FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

Appendix 2

Background to the Proposed Development

Appendix 2.1 - Rehabilitation Plans/ Reports

Appendix 2.2 - Copy of Scoping Letters, Reports and Responses

Appendix 2.3 - Community Engagement Report

Appendix 2.4 - SID Determination and Meeting Minutes

Appendix 2.5 - NPWS Consultation

Appendix 2.1

Rehabilitation Plans / Reports

APPENDIX 2.1

Rehabilitation Plans/ Reports

Littleton Bog



Littleton Bog

Cutaway Bog Decommissioning and Rehabilitation Plan

2026

This document seeks to address the requirements of Condition 10.2 of IPC Licence Ref. P0499-01:

> "*The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area.*"

This licence condition requires BnM agree with the EPA the measures that will provide for rehabilitation, i.e., stabilisation of Littleton Bog upon cessation of peat production and compliments the licence requirement to decommission the site.

***Rehabilitation** generally comprises site stabilisation with natural colonisation with or without targeted management.*

Industrial peat production has now fully ceased at Littleton Bog. A rehabilitation programme was carried out at Littleton Bog in 2018-2021.

BnM have defined the key rehabilitation outcome at Littleton Bog as environmental stabilisation, re-wetting and setting the bog on a trajectory towards development of naturally functioning peatland and wetland habitats.

Any consideration of any other future after-uses for Littleton Bog will be conducted in adherence to the relevant planning guidelines and consultation with relevant authorities and will be considered within the framework of this rehabilitation plan.

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NON-TECHNICAL SUMMARY

- BnM (formerly known as Bord na Móna) is updating the rehabilitation plan prepared in 2018 for Littleton Bog, located in Co. Tipperary.
- BnM Industrial peat harvesting ceased at Littleton Bog in 2017.
- Littleton Bog was in industrial peat production since 1940s and formerly supplied peat to the Littleton Briquette Factory.
- In 2017, BnM announced the closure of the Littleton Briquette factory and the cessation of industrial peat production in a number of cutaway bogs within the Littleton Bog Group.
- A rehabilitation programme was carried out by BnM between 2018-2021 (Phase 1) with targeted drain-blocking through the site.
- Littleton Bog is now developing a mosaic of cutaway peatland habitats including Birch woodland and scrub, bog vegetation and wetlands.
- Littleton Bog has a partially pumped drainage regime. Pumps have been decommissioned.
- This rehabilitation plan has been prepared by BnM as part of obligations to carry out peatland rehabilitation via an IPC licence issued by the Environmental Protection Agency.
- The key objective of peatland rehabilitation is environmental stabilisation. This means developing habitats and vegetation back onto the bare peat (putting a “skin” back onto the peat), and minimising effects to downstream waterbodies.
- In general, soggy ground conditions are preferred. This means the remaining peat is wet and that plants that prefer wetter conditions, like Bog Cotton will thrive.
- Rehab measures included drain-blocking and other measures to raise water levels to the surface of the bog, thus encouraging the development of naturally functioning cutaway peatland habitats.
- These rehabilitation measures were planned by a team consisting of expert ecologists and engineers. It is a guiding principle of BnM rehabilitation planning that no actions or activities will be undertaken that would negatively impact on adjacent land. No boundary drains will be blocked. Water will still leave the bog via the existing outlets.
- Peatland rehabilitation of this bog will bring a range of benefits to the local community via improvements to the local landscape and is also important for supporting national policies and strategies in relation to reduction of carbon emissions from these peatlands, supporting biodiversity and improvements to water quality.
- Rehabilitation at Littleton Bog will result in improved water quality, climate benefits with the reduction of carbon emissions and enhanced biodiversity when the residual peat is re-wetted.
- Many BnM bogs cannot be restored back to raised bog, as the majority of peat has been removed and the environmental conditions have been modified. However other natural habitats will develop, like poor fen and regenerating wet deep peat vegetation communities (on deeper peat); and wetlands with Reedbeds and Birch woodland on shallower peat. In time a naturalised peatland can be developed.
- It will take some time for vegetation and habitats to fully develop at Littleton Bog, and a peatland ecosystem to be restored. However, it is expected that any bare peat will be developing pioneer habitats after 5-10 years.
- The development of a range of habitats at Littleton Bog will support biodiversity including plants, insects, birds and mammals. This includes some species that are rare and protected in the wider landscape.
- This peatland rehabilitation plan does not consider future after-use or development. BnM continually reviews its land-bank to consider future commercial or industrial developments. Any other proposed

development will be planned in adherence to relevant planning guidelines and will consider the rehabilitation and the condition of the bog.

1. INTRODUCTION

BnM (formerly known as Bord na Móna) operates under IPC Licence issued and administered by the EPA to extract peat within the Littleton Bog Group (Ref. P0499-01) (see Appendix I for details of the bog areas within this Group). As part of Condition 10.2 of this licence, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area. Littleton Bog is located in Co. Tipperary.

This document seeks to address the requirements of Condition 10.2 of IPC Licence Ref. P0499-01:

> "*The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area.*"

It also seeks to outline measures to optimise climate action and other ecosystem services benefits, mainly through hydrological management.

This plan is a specific rehabilitation plan for the bog and outlines:

- Description of site management and status.
- Main issues and approaches to rehabilitation.
- Consultation to date with interested parties.
- Interaction with other policy and legislative frameworks (Appendix V).
- The planned rehabilitation goals and outcomes.
- The scope of the rehabilitation plan.
- Criteria which define the successful rehabilitation and key targets to validate rehabilitation.
- Proposed rehabilitation actions.
- Proposed timeframe to implement these measures.
- Budget and Costings.
- Associated aftercare, maintenance, and monitoring.

Note: This plan should be read in conjunction with the accompanying Map book.

Littleton Bog is part of the Littleton Bog Group and supplied the Littleton Brickette Factory. BnM made the decision to close this brickette factory in 2017 and to rehabilitate the Littleton Bog group. Littleton Bog was rehabilitated by BnM during 2018-2021.

This updated rehabilitation plan supersedes the previous rehabilitation plan prepared and submitted to the EPA in 2018.

1.1 Constraints and Limitations

This document covers the area of **Littleton Bog** shown in drawing number *BNM-ECO-26-11B-01: Site Location Map*.

There are areas of active turf cutting (turbary) on the margins of the bog which have been mapped as a constraint. The parts of Littleton Bog (within the areas owned by BnM) that are currently used by domestic turf cutters to harvest peat are ecologically and hydrologically linked to the area owned by BnM. BnM are aware of such issues which may constrain the proposed rehabilitation actions, and this rehabilitation plan considered potential impacts of turf cutting on the delivery of the stated objectives.

Part of Littleton Bog was developed as Conifer forestry by Coillte. This is mapped as a constraint.

Rehabilitation in other areas of the bog may also be constrained due to other property issues or archaeological features. There is known archaeology close to Littleton Bog. There are some areas of agricultural grassland along the margins of Littleton Bog. These areas will not be subject to rehabilitation and have been identified as constrained land.

2. METHODOLOGY

This rehabilitation plan was developed with a combination of desktop and field surveys, consultations with internal and external stakeholders. The development of this rehabilitation plan considered recently published guidance issued by the EPA, '*Guidance on the Process of Preparing and Implementing a Bog Rehabilitation Plan' (EPA, 2020)*.

The ecological information and site information collected during the BnM ecological baseline survey, additional confirmatory site visits (covering the period 2011 to 2025 inclusive) and monitoring and desktop analysis forms the basis for the development of the rehabilitation plan for the bog, along with:

- Experience of 40 years of research on the after-use development and rehabilitation of the Bord na Móna cutaway bogs (Clarke, 2010; Bord na Móna, 2016)
- Significant international engagement during this period with other counties in relation to best practice regarding peatland rehabilitation and after-use through the International Peat Society and the Society for Ecological Restoration (Joosten & Clarke, 2002; Clarke & Rieley, 2010; Gann *et al*., 2019),
- Consultation and engagement with internal and external stakeholders,
- GIS Mapping,
- BnM drainage surveys,
- Bog topography and LIDAR data,
- Previous research studies on site,
- Hydrological modelling.

2.1 Desk Study

The desk study involved collecting all relevant environmental and ecological data for the study area. The development of the rehabilitation plan also takes account of research, experience and engagement with other peatland restoration and rehabilitation projects and peatland research including Irish, UK, European and International best practice guidance (full citations are in the References Section):

- Anderson *et al*. (2017). An overview of the progress and challenges of peatland restoration in Western Europe.
- Barry, T.A. *et al*. (1973). A survey of cutover peats and underlying mineral soils. Soil Survey Bulletin No. 30. Dublin, Bord na Móna and An Foras Taluntais.
- Bonn *et al*. (2017). Peatland restoration and ecosystem services- science, policy and practice.
- Carroll *et al*. (2009). *Sphagnum* in the Peak District. Current Status and Potential for Restoration. Moors for the Future Report No 16.
- Clark & Rieley (2010). Strategy for responsible peatland management.
- Eades *et al*. (2003). The Wetland Restoration Manual.
- Farrell & Doyle (2003). Rehabilitation of Industrial Cutaway Atlantic Blanket Bog, NW Mayo, Ireland.
- Gann *et al*. (2019). International Principles and Standards for the practice of Ecological Restoration.
- Hinde *et al*. (2010). *Sphagnum* re-introduction project: A report on research into the re-introduction of *Sphagnum* mosses to degraded moorland. Moors for the Future Research Report 18.
- Joosten & Clarke (2002). Wise Use of mires and peatlands – Background and Principles including a framework for Decision-making.

- Lindsay (2010). Peatbogs and Carbon: a Critical Synthesis to Inform Policy Development in Oceanic Peat Bog Conservation and Restoration in the Context of Climate Change.
- Mackin *et al*. (2017). Best practice in raised bog restoration in Ireland. Irish Wildlife Manuals, No. 99. National Parks and Wildlife Service,
- McBride *et al*. (2011). The Fen Management Handbook (2011), Scottish Natural Heritage.
- McDonagh (1996). Drain blocking by machines on Raised Bogs. Unpublished report for National Parks and Wildlife Service.
- NPWS (2017a). National Raised Bog Special Areas of Conservation management plan. Department of Arts, Heritage and the Gaeltacht.
- Pschenyckyj et al., (2021). Optimising Water Quality Returns from Peatland Management while Delivering Co-Benefits for Climate and Biodiversity. An Fóram Uisce.
- Quinty & Rochefort (2003). Peatland Restoration Guide, second edition. Canadian *Sphagnum* Peat Moss Association and New Brunswick Department of Natural Resources and Energy.
- Regan*, et. al.* (2020). Ecohydrology, Greenhouse Gas Dynamics and Restoration Guidelines for Degraded Raised Bogs. EPA Research Report. Prepared for the Environmental Protection Agency by Trinity College Dublin.
- Renou-Wilson *et al*. (2011). BOGLAND - Sustainable Management of Peatlands in Ireland. STRIVE Report No 75 prepared for the Environmental Protection Agency.
- Schouten (2002). Conservation and Restoration of Raised Bogs: Geological, Hydrological and Ecological Studies. Dúchas - The Heritage Service of the Department of the Environment and Local Government, Ireland.
- Thom (2019). Conserving Bogs – Management Handbook.
- Wheeler & Shaw (1995). Restoration of Damaged Peatlands – with Particular Reference to Lowland Raised Bogs Affected by Peat Extraction.
- Wittram *et al*. (2015). A Practitioners Guide to Sphagnum Reintroduction. Moors for the Future Partnership.

Additional on-line resources were also incorporated into the desk study, including:

- Littleton Integrated Pollution Control Licence
- Littleton Annual Environmental Reports
- Review of the National Biodiversity Data Centre (NBDC) webmapper
- Inland Fisheries Ireland (IFI) Reports
- Environmental Protection Agency database (www.epa.ie)
- EPA Guidance on Requests for Alterations to a Licensed Industrial or Waste Activity
- Birdwatch Ireland online data (including I-WeBS and CBS datasets; www.birdwatchireland.ie)
- Geological Survey of Ireland - National Draft Bedrock Aquifer map
- Geological Survey of Ireland - Groundwater Database (www.gsi.ie)
- Historic Environment Viewer at https://webgis.archaeology.ie/historicenvironment/
- National Parks & Wildlife Services Public Map Viewer (www.npws.ie)
- Water Framework Directive catchments.ie/maps/ Map Viewer (www.catchments.ie)
- OPW Indicative Flood Maps (www.floodmaps.ie)
- CFRAM Preliminary Flood Risk Assessment (PFRA) maps (www.cfram.ie)
- River Basin Management Plan for Ireland 2022-2027

- BnM Annual Report 2025
- Spatial data in respect of Article 17 reporting, available online at https://www.npws.ie/maps-and-data/habitat-and-species-data/article-17

2.2 Consultation

A number of stakeholders have been identified during the course of BnM's rehabilitation and Biodiversity Action Plan activities and are contacted during the rehabilitation planning process for their views. See Section 4.

2.3 Field Surveys

BnM carried out a baseline ecological survey of all of its properties in 2009-2012 and developed habitat maps. As part of this exercise, Littleton Bog was surveyed in 2012, with additional surveys in 2013 and 2016. Habitat maps were updated in 2018. Habitat maps have been updated, where required. This rehabilitation plan is informed by the original baseline survey as well as subsequent confirmatory site walk-over surveys and visits, and updates to baseline data.

Habitat mapping followed best practice guidance from Smith *et al.* (2011). Map outputs including all habitat maps and target notes were produced using GIS software application packages (ArcGIS). General marginal habitats and other habitats that had not been modified significantly by industrial peat extraction were classified using Fossitt *et al*. (2000). Plant nomenclature for vascular plants follows Stace (2019), while moss and liverwort nomenclature follow identification keys published by the British Bryological Society (2010).

The original ecological survey report for Littleton Bog is contained in Appendix II.

3. SITE DESCRIPTION

Littleton Bog is located in Co. Tipperary, 3 km east of Littleton Village. The total combined area of the rehabilitation footprint of the bog is 995 ha. It is part of the Littleton Bog group with Longford Pass Bog to the north and Ballybeg bog to the south. A former BnM industrial railway passes through the site. Littleton bog is situated in a lowland landscape and is mostly surrounded by farmland and Coillte forestry. It is a relatively long (extending for 7 km along the railway) and narrow bog. It is bordered to the north by a minor road (that separates Littleton from the adjacent Longford Pass BnM property).

Industrial peat extraction started in the 1940s and finally ceased in 2017 with the announcement of the closure of the Littleton Brickette Factory.

Rehabilitation took place at Littleton Bog between 2018-2021. Targeted measures were applied to areas that had already vegetated or had maturing habitats and were stabilised. Some outfalls were blocked or adjusted with hydrological management. More intensive rehabilitation was carried out across the bare peat areas. Field drains were regularly blocked.

The central part of the bog has been developing as cutaway for some time. The underlying glacial topography is quite influential. There are many localised wetlands where there are basins with open water and wet peatland vegetation, and some of these are divided by mounds or ridges where there is drier habitat development with Birch scrub, Heather and some pioneer grassland communities. Pine is colonising the north-east section from an adjacent conifer plantation. This area has also been further sub-divided by a series of deep trench drains and associated high fields. These divide the bog into regularly grouped series of fields. The high fields act as berms to maintain small wetland areas.

Littleton Bog has a partially pumped drainage system with pumps located in three locations along the spine of the bog. The central pump ceased pumping in 2018. Pumping ceased in the northern section of the site in 2022. Some additional drainage was carried out in 2022 to alleviate flooding that was occurring in this area and that was impacting on adjacent land and the rail underpass at the N9 motorway. Pumps at Littleton Bog are now permanently depowered and scheduled for removal, although some pumping may be required in the future for maintenance.

These are several old former sod peat production areas that have naturally re-colonised over a long period (50-60 years). Re-vegetation tends to be dominated by Heather-dominated and Bog Cotton-dominated vegetation, in mosaic with scattered Birch scrub and small amounts of Purple Moor-grass dominated vegetation. There are also other elements of raised bog vegetation present, due to the presence of more acidic deeper peat, although *Sphagnum* re-generation in the drier areas is poor. Some of the wetter areas have excellent *Sphagnum* re-generation and can be classed as embryonic peat-forming *Sphagnum* communities. Overall re-vegetation has been excellent with only the travel paths still having significant bare peat. Several sod peat bays have been cut to a much lower level than the surrounding bog and have now developed as wet peatlands. These wetlands attract significant amount of wildfowl.

See Drawing number *BNM-ECO-26-11B-01: Site Location Map*, included in the accompanying Mapbook[1] , which illustrates the location of Littleton Bog in context to the surrounding area.

[1] Cutaway Bog Decommissioning and Rehabilitation Plan – Littleton Bog Map Book

3.1 Status and Situation

3.1.1 Site history

Large-scale industrial peat production began at Littleton Bog in the 1940's when sod turf was produced for fuel, by manual labour. Sod peat production was mechanised during the 1950's. Milled peat production began in the 1970's and milled peat was supplied to the Briquette factory at Lanespark, which was constructed in 1981. Some of the sod peat production areas in the bog were converted to milled peat production. Littleton Bog formerly supplied peat to the Littleton briquette factory.

Some conifer plantation was developed at the southern end of the bog in the 1980's by Coillte. The main central part of the bog came out of production prior to 2000 and has been developing as cutaway since then. Much of the peat was cut out of this section and the underlying glacial subsoil was exposed in places, and some wetlands had developed by this stage. A small part of the site was used for industrial peat extraction between 2010-2018.

In 2017, BnM announced the closure of the Littleton Briquette factory and the cessation of industrial peat production in the majority of cutaway bogs within the Littleton Bog Group including Littleton Bog.

Rehabilitation commenced at Littleton Bog in 2018, with a program of targeted drain blocking and other measures.

3.1.2 Current land-use

Industrial peat extraction by BnM ceased in 2017. There is some active private sod-peat cutting around the margins of the site.

A small area (10 ha) at the northern end of Littleton Bog has recently been planted with Eucalyptus as a commercial biomass trial (2018).

Coillte have developed a relatively large area of conifer forestry on the site (85 ha leased from BnM).

Littleton Bog has a particularly pumped drainage regime. Two pumps are still present on site and remain non-functional. The former BnM industrial railway is still present on site. This former railway is expected to be decommissioned shortly.

BnM and Tipperary County Council carried out a feasibility study of the potential for amenity development across the Littleton Bog Group called Littleton Labyrinth. The first phase of this amenity has been completed, and a greenway has been constructed at Killeen Bog to Loch Doire Bhile. A further extension (Phase 2) is proposed at Ballybeg and Derryvilla Bog. There is potential for future extensions to this greenway network through Littleton Bog.

Tipperary County Council has currently included the area of Littleton Bog within the Mid-Tipperary Decarbonising Zone in the Tipperary Climate Action Plan.

3.1.3. Socio-Economic conditions

BnM has historically been a vital employer for the rural communities in the Irish Midlands. BnM compiled a report on the role of peat extraction in the midlands historically in which they report that in 1986, by the end of BnM's Third Development Programme, a total of twenty-three work locations had been established around the country. The company had an average employment of approximately 4,688 in the mid 1980's, with a peak employment of 6,100 during the production season, which placed it among the country's largest commercial employers. The

importance of such levels of employment were largely due to its regional concentration in the Midlands and the lack of alternative employment opportunities in these areas at the time.

According to the Energy Crop Socio-Economic Study undertaken by Fitzpatrick Associates in 2011, there were an estimated 1,443 jobs supported by the peat-to-power industry in Ireland at the time, some 81% of which were located in the catchment areas of the three peat-fired generating stations (Lough Ree, West Offaly, and Edenderry Power Stations). These constituted jobs in the plants and in peat extraction, jobs indirectly supported in upstream supply industries and jobs induced through the trickle-down effects of the wages and salaries of those supported directly or indirectly. These job numbers have now declined with the cessation of peat extraction.

In respect of Littleton Bog, jobs included in the above study would have included those to facilitate extraction of peat at this bog and associated processing and transfer to Littleton Briquette Factory.

As the primary employer in many Midland counties, BnM played a central role in building communities through several initiatives, including development and construction of local housing complexes, education bursaries, support of local sporting clubs, the provision of community gain funds, charity programmes and the provision and building of amenity areas.

Employment numbers have now declined significantly following the cessation of peat extraction at this bog.

3.2 Geology and Peat Depths

3.2.1 Sub-soil geology

The underlying geology[2] at Littleton Bog is limestone-based and comprises three different bedrock units; Ballysteen Formation (Dark muddy limestone and shale), Waulsortian Limestones (Massive unbedded lime-mudstone) and a small area of Lisduff Oolite (Oolitic limestone).

Quaternary subsoil mapping maps most of the Littleton area as cut peat, underlain by till derived from limestones and some small pockets of gravels derived from limestones.

3.2.2 *Peat type and depths*

Much of the peat exposed in the cutaway is fen peat. The conifer plantation was planted on a range of *Phragmites* peat and Sphagnum peat. The northern area (formerly managed for industrial peat production) is somewhat younger and exposed comprising light brown peat. The old sod peat areas along the western side have much deeper remnant acidic peat.

There is limited peat depth information for Littleton Bog. Parts of the site have been mapped across the bog using GPR and are provided in figure *BNM-ECO-26-11B-04: Peat depths*. The majority of the site has very shallow peat remaining (0-1m), with several areas where subsoil is exposed. Thicker deposits remain in the lobe of intact raised bog around the margins and in a pocket of cutover bog at the north-east end of the site (> 2 m).

[2] https://www.gsi.ie/en-ie/data-and-maps/Pages/Bedrock.aspx

3.3 Key Biodiversity Features of Interest

3.3.1 Current habitats

The most common vegetation communities/habitats[3] present in the former production areas at Littleton Bog include:

- Bare peat (BP),
- Birch/Willow scrub (eBir/oBir/cBir),
- Pine-dominated scrub (ePine/oPine),
- Pioneer Soft Rush-dominated or Bog Cotton-dominated poor fen (pJeff/pEang),
- Open water (wetlands also contain emergent pioneer poor fen – pEang/pJeff/pRos),
- Pioneer Heather in mosaic frequently with pEang,
- Embryonic raised bog community (Bog Cotton-dominated vegetation with Sphagnum (EM –pEangS),
- Embryonic raised bog community (Sphagnum-rich vegetation with PB1 species),
- Pioneer Purple Moorgrass-dominated vegetation (gMol) (frequently in mosaic with dHeath and oBir along high fields and other areas),
- Bulrush-dominated Reedbeds (pTyph) (small infilled wetlands),
- Common Reed-dominated Reedbeds (pPhrag),
- Pioneer poor fen with Marsh Arrowgrass (pTrig),
- Pioneer acidic grassland (gAn-H-Eq) (in mosaic with scrub, gMol and pJeff on some of the drier mounds where gravel was exposed),
- Pioneer potential rich fen (pRos/pVir with some Black Bog-rush),
- Railway (Acc) (with some exposed gravel - ED2/ED3/DisTuss).

The most common habitats[4] found around the margins include:

- Conifer plantation (WD4) (Codes refer to Heritage Council habitat classification, Fossitt 2000),
- Cutover Bog (PB4)
- Secondary cutover bog – now mosaic of Heather, poor fen and scrub (PB/PF2/WS1)
- Scrub (WS1),
- Raised bog (PB1) (minor remnants) with poor fen flushes (PF2),
- Birch woodland (WN7),
- Dense Bracken (HH3),
- Acid grassland (GS3),

[3] Codes refer BnM classification of pioneer habitats of production bog

[4] Codes refer to Heritage Council habitat classification, Fossitt 2000

- Improved grassland (GA1) (privately-managed land along margins).

See Drawing number *BNM-ECO-26-11B-17: Habitat Map (2018)*, included in the accompanying Mapbook.

- Littleton contains a significant amount of wetland and open water scattered across the site. Some of this wet peatland provides breeding habitat for wetland birds (Copland, 2011)) as well as refuge for wintering wildfowl. Some duck (Mallard and Teal) were noted on one of the larger wetlands close to the margin of the site. The extent of wet peatland habitat is likely to increase in the future when the bog comes out of production. These wetland areas are likely to continue to mature and become more structurally diverse in the future. Shoveler Duck, a scarce breeder in Ireland, was confirmed breeding on the site in 2018 (Birdwatch Ireland Tipp).
- Littleton also contains a significant area of bog remnant that was formerly partially used for sod peat cutting. Much of these bog remnants and former sod peat areas have completely re-vegetated and have been zoned for biodiversity by BnM. The relatively deep remnant peat is indicative that there is a large mainly Heather-dominated area on the site. *Sphagnum*-rich vegetation is also present, indicating some regeneration. As much of the bog has developed secondary peatland habitats, it forms a relatively large refuge for wildlife.

Photos of Habitats at Littleton Bog (2024)	
	**Littleton Bog SW** Derryhogan Bog 2021 New wetlands evident across the landscape.
	**Littleton South 2021** Conifer plantation evident to the left of the picture. Extensive Birch woodland and mosaic of wetlands developing. Bare peat strip is a travel path along the railway. .
	**Littleton South 2022** Looking south towards the conifer plantation Mosaic of wetland (open water, poor fen, wet scrub and woodland) and drier woodland and open habitats developing across this area.

	**Littleton North 2021** Old wetland along the western margin (looking south). Adjacent area has been out of peat extraction since 1980s and has re-vegetated.
	**Littleton North 2021** New wetland creation and development of cutaway habitats in central section (looking south
	Embryonic *Sphagnum* rich vegetation developing in the former trenches at Derryhogan Bog. This cutaway vegetation has been developing for > 40 years and is one of the best examples of typical future habitat on re-wetted acidic deep peat bog. The *Sphagnum* moss forms an extensive mat in places. No re-wetting was carried out in these trenches as it was deemed in good condition and providing significant habitat for wintering and breeding birds.

	Re-wetted area in Derryhogan 2025. This area has radically transformed compared to pre-rehab.

3.3.2 Species of conservation interest

A number of species of conservation interest utilize the habitats available at Littleton Bog. The following is a summary of the records of these species available within both BnM and NBDC records.

- Multiple mammal species have been recorded as part of BnM surveys on or in close proximity to the bog including Otter (*Lutra lutra*), Hare (*Lepus timidus spp. hibernicus*), Eurasian Red Squirrel (Sciurus vulgaris), Badger (*Meles meles*) and the bat species Leislers Bat (*Nyctalus leisleri*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*).
- There are records of Marsh Fritillary (*Euphydryas aurinia*) along the margins of Littleton Bog, including larval webs and butterflies in flight. Marsh Fritillary is a species of significant conservation interest (Annex II species – EU Habitats Directive).
- Littleton contains a significant amount of wetland and open water scattered across the site. Some of this wet peatland provides breeding habitat for wetland birds (Copland, 2011)) as well as refuge for wintering wildfowl. Some duck (Mallard and Teal) were noted on one of the larger wetlands close to the margin of the site. These wetland areas are likely to continue to mature and become more structurally diverse in the future. Shoveler Duck, a scarce breeder in Ireland, was confirmed breeding on the site in 2018 (Birdwatch Ireland Tipp).
- Littleton is used by wintering Hen Harrier, Merlin and by small flocks of Whooper Swans (Biosphere Environmental Services 2014). The small wetlands are regularly used by wintering wildfowl. Breeding Curlew has also been recorded on the site at Derryhogan in the south-west part of the site. This is a particularly rare Red-listed bird species. The wetlands also support a colony of Black-headed Gull, another Red-listed breeding species. Curlew are still confirmed breeding on the site (2025).
- Bird species of conservation interest recorded from the bog include the BOCCI[5] red listed species Snipe (*Gallinago gallinago*), Kestrel (*Falco tinnunculus*), Lapwing (*Vanellus vanellus*), Meadow Pipit (*Anthus pratensis*) and small flocks of Golden Plover (*Pluvialis apricaria*). The BOCCI amber listed species Willow

[5] https://birdwatchireland.ie/app/uploads/2021/04/BOCCI4-leaflet-2-1.pdf

Warbler (*Phylloscopus trochilus*), Mallard (*Anas platyrhynchos*), Swallow (*Hirundo rustica*), Northern Wheatear (*Oenanthe Oenanthe*), Lesser Black-backed Gull (*Larus fuscus*), Linnet (*Linaria cannabina*) and House Martin (*Delichon urbicum*) have also been recorded at Littleton Bog.

- Plant species of particular conservation value that were recorded on the site include Blue Fleabane and Marsh Hellebore. Blue Fleabane is a Red Data Book species.

3.3.3 Invasive species

There are BnM records for the high impact invasive species Japanese Knotweed (*Fallopia japonica*) recorded from the northern gate at Littleton Bog. Some herbicide control has been carried out over the past few years.

3.4 Statutory Nature Conservation Designations

There are no European Designated Sites in close proximity (i.e. within a 5km radius at minimum) to Littleton Bog.

The nearest European Designate Sites to Littleton Bog are as follows:

- The Loughans SAC (000407)- located approximately 8km northeast,
- Lower Suir SAC (site code: 002137) - located approximately 9.5km west (at the closest point,)
- River Barrow and River Nore SAC (002162) (002162)-10km east (at the closest point),
- Spahill and Clomantagh Hill SAC (000849)- located approximately 10.3km northeast,
- Galmoy Fen SAC (001858) - located approximately 13.7km northeast,
- Cullahill Mountain SAC (000831)- located approximately 14.8km northeast,

There are also no NHA's (Natural Heritage Areas) within a 5km radius of this site. There is only one proposed NHA (Proposed Natural Heritage Area) within a 5km radius of this site, i.e. Kilcooly Abbey Lake pNHA (site code: 000958) which is located approximately 5km east of Littleton Bog. A number of non-statutory designated sites which overlap with European designated sites occur in the wider area. There are also a number of pNHA's that occur within 10km of Littleton Bog including:

- Kilcooly Abbey Lake pNHA (site code: 000958), located approximately 5km east.
- Laffansbridge pNHA (000965) - located approximately 6.3km south,
- The Loughans pNHA (000407)- located approximately 8km northeast,
- Killough Hill pNHA (000959) - located approximately 9.2km to the southwest,
- Cabragh Wetlands pNHA (001934) – located approximately 9.5km to the west,
- Spahill and Clomantagh Hill pNHA (000849) - 10.3km northeast.

See drawing *BNM-ECO-26-11B-23: Proximity to Designated Sites* in the accompanying map book.

3.4.1 Other Nature Conservation Designations

The Ramsar Convention entered into force in Ireland on 15th March 1985. Ireland currently has 45 sites/wetlands designated as Wetlands of International Importance (Ramsar Sites). These cover a surface area of 66,994ha.

There are no Ramsar sites in close proximity to Littleton Bog.

3.5 Hydrology and Hydrogeology

Littleton Bog forms part of the Suir Catchment (Catchment ID: 16) as defined by the EPA under the Water Framework Directive (WFD). The bog lies within several sub-catchments including Black (Twomileborris_SC_10) Clover_010 and Drish_010. Littleton Bog had a partially based pumped drainage system. The bog contains several drainage pathways and discharge locations, with most of the bog discharging to streams (via silt ponds), which eventually flow into the River Suir.

The northern part of the site is considered a locally important aquifer (LI) as the bedrock is moderately productive only in specific zones. The southern part of the site is classified as a regionally important (Rk) as it is subject to karstificaiton.

An aquifer is an underground body of water-bearing rock or unconsolidated materials (gravel or sand) from which groundwater can be extracted in useful amounts. GSIs Aquifer classes are divided into three main groups based on their resource potential, and further subdivided based on the type of openings through which groundwater flows. There are nine aquifer categories in total. Locally important aquifers are capable of supplying locally important abstractions (e.g. smaller public water supplies, group schemes), or good yields (100-400 m3/d). This data gives an indication of sub-surface deposits (bedrock and unconsolidated materials) in terms of their groundwater resource potential and dominant groundwater flow type.

Regionally important aquifers are those in which the network of fractures, fissures and joints, through which groundwater flows, is well connected and widely dispersed, resulting in a relatively even distribution of highly permeable zones. There is good aquifer storage and groundwater flow paths can be up to several kilometres in length. There is likely to be substantial groundwater discharge to surface waters (‘baseflow’) and large (>2,000 m3/d), dependable springs may be associated with these aquifers.

The majority of the cutover bog is located in an area mapped by GSI as of moderate groundwater vulnerability with some peripheral sections having low groundwater vulnerability (GSI Mapviewer). Groundwater vulnerability for the area surrounding Littleton Bog ranges from moderate to low vulnerability. Groundwater Vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities. Groundwater vulnerability maps are based on the type and thicknesses of subsoils (sands, gravels, glacial tills (or boulder clays), peat, lake and alluvial silts and clays), and the presence of karst features. Groundwater is most at risk where the subsoils are absent or thin and, in areas of karstic limestone, where surface streams sink underground at swallow holes. These data indicate there is generally low risk of any groundwater contamination occurring at this site. Groundwater Vulnerability is typically used to indicate the susceptibility to groundwater pollution.

3.6 Emissions to surface-water and watercourses

Littleton Bog has 2 treated surface water outlets (SW34 and SW35) from previously active peat extraction catchment. SW34 and SW35 discharge to unnamed streams eventually meeting the Clover River (IE_SE_16C040300). The Clover River is classed as Good water quality status (Ecological Status or Potential SW 2019-2024 – Water Framework Directive) but the unnamed streams leading to the Clover River are classed as having poor/moderate water quality.

The locations of silt ponds, associated surface water emission points and those being monitored and sampled as part of the IPC licence are detailed on the BNM-ECO-26-11B-02 Littleton Bog: Structures and Sampling, along with the water quality map (BNM-ECO-26-11-WQ01 Littleton Bog: Water Quality Map) in the associated map book.

Peat extraction continues to be identified as a pressure in the third cycle of the River Basin Management Plan (Water Action Plan for Ireland). The main emission limit value (ELV) associated with these bogs is 35mg/l suspended solids, with trigger levels for ammonia of 3.6 mg/l and COD 100mg/l.

An analysis of the results over a number of years of the IPC licence environmental monitoring of some of the discharges from this bog indicates that results were well under the Emission Limit Value for Suspended Solids for the last 30 months of monitoring up to December 2025, with a similar level of compliance for COD at 95% and 100% under the trigger level for Ammonia.

Ammonia averaged 0.301mg/l and ranged from 0.028 to 1.78 mg/l with Suspended Solids ranging from 2 to 7 mg/l and averaging 3.54 mg/l.

The Annual Monitoring Return (AMR) for the period up to December 2025 is due to be submitted to the EPA in May 2026.

Rehabilitation of cutaway peatland is closely linked with control of emissions. One of the criteria for successful rehabilitation is stabilisation through re-vegetation, which will stabilise all substrates and in turn remove the need for further silt control measures. This site is already vegetated in some areas. Re-wetted peat also aids the primary objective of stabilizing peat, as when peat is re-wetted it is not vulnerable to wind erosion. Re-wetted peat and the development of wet peatland habitats can also act as sinks for silt and mobile peat, and increases additional retention time for solids, and the peatland vegetation can quickly stabilise this material within blocked drains on site (by acting like constructed wetlands).

Water quality of water discharges from restored peatlands normally improves as a result of bog restoration measures and the restoration of natural peatland processes (Bonn *et al*., 2017). Bog restoration is also expected to improve water attenuation of the site as the drains are blocked, slowing water movement and water release from the site. Restored peatlands help slow the release of water and aid the natural regulation of floods downstream (Minayeva *et al*., 2017). The draft National River Basin Management Plan (NRBMP) 2022-2027 (DHPCLG, 2022) is the key national plan for Ireland to achieve the objectives of the Water Framework Directive (WFD). The NRBMP outlines how key actions such as the BnM peatland rehabilitation is expected to have a positive impact on water quality and help the NRBMP deliver its objectives in relation to the WFD.

Water will still discharge from designated emission points when rehabilitation at Littleton Bog has been completed. This discharge will have improving water quality and there will be increased wetland attenuation, meaning slower release of water. This is expected to have a positive impact on status of downstream water bodies. While water quality improvements assist in meeting water frameworks directive ambitions and targets, they can also improve drinking water sources in applicable catchments with drained peatlands and the potential for associated reduction in treatment requirements at drinking water treatment facilities.

Decommissioning and Rehabilitation Programme Water Quality Monitoring.

Results for the quarterly monitoring programme for the last 3 yrs are included in Appendix XI, for Littleton.

BnM have been providing the Local Authority Water Programme (LAWPRO) with details of the surface water emissions points associated with this bog.

This is necessary to ensure that there is alignment with the WFD monitoring programme and that where possible, the monitoring programme will enable any improvements in water quality or establishing trends to be quantified against any available WFD monitoring data. It will also enable the periodic sharing of data which will inform the monitoring reports, success criteria and enable LAWPRO under the Water Framework Directive to track any changes in pressures and be aware of changes in water chemistry.

Monitoring results will be maintained, trended every six months and reported on each year and as required, as part of the requirement to report on Condition 10.1 of the IPC Licence on Bog Rehabilitation in the Annual Environmental Report, and will be provided to LAWPRO and the EPA as required to inform progress and national monitoring requirements under the WFD.

These results will also be available in May each year as a requirement of the Annual Environmental Report at www.epa.ie.

The parameters to include as per condition 6.2 of the IPC Licence include monthly monitoring for pH, Flow, Suspended Solids, Total Solids, Total Phosphorus, Total Ammonia, Colour & COD.

3.7 Fugitive Emissions to air

None.

The bog is no longer in industrial peat production. Rehabilitation of the cutaway peatland will seek to re-wet the dry peat where possible and re-vegetate all areas (whether wet or dry). Collectively, ceasing industrial peat production, re-wetting and re-vegetating will minimise any risk of emission to air from dust.

3.8 Carbon emissions

Irish peatlands are a huge carbon store, containing more than 75% of the national soil organic carbon (Renou-Wilson *et al.* 2012). Peatland drainage and extraction transforms a natural peatland which acts as a modest carbon sink (taking in 0.1 to 1.1 t of carbon as CO_2-C /ha/yr) into a cutaway ecosystem which is a large source of carbon dioxide (releasing 1.3 to 2.2 t of carbon as CO_2-C /ha/yr) based on Tier 1 Emission factors (Evans *et al*. 2017). Renou-Wilson *et al.* (2018) reported losses of between 0.81 – 1.51 CO_2-C /ha/yr from drained peatlands located in Ireland.

Re-wetting of dry peatlands will increase methane emissions (Gunther *et al*. 2020) as a consequence of the anoxic conditions within the peat body that provide a suitable environment for the microbial breakdown of plant litter and root exudates. Tanneberger *et al.* (2021) describes how peatland management has to choose between CO_2 emissions from drained peatlands or increased methane (CH_4) emissions from rewetted industrial peatlands. However, when radiative effects and atmospheric lifetimes of both GHG gases are considered and modelled, postponing rewetting increases the long-term warming effect of continued CO_2 emissions (Gunther *et al*. 2020). This means the increase in methane due to rewetting of dry peatlands is still negated by the CO_2 emissions reductions. Further, Wilson *et al.* (2022) confirmed the benefit of rapid rewetting to achieve strong carbon reductions and potentially altering the warming dynamics from warming to cooling depending upon the climate scenario.

It is expected that Littleton Bog will become a reduced carbon source following rehabilitation. The potential of any cutaway site to develop as a carbon sink in the longer-term depends on the success of the rehabilitation measures, the extent of development of *Sphagnum*-rich or other peat-forming habitats, the balance of carbon

fluxes from different cutaway habitats and future climatic conditions. Much of this bog is expected to develop wetland habitats on shallow peat with open water, reed swamp and fen habitats with alkaline emission factors and a smaller proportion will develop as regenerating wet deep peat vegetation on deep peat areas. Birch woodland is expected to develop on the drier mounds and along peripheral headlands.

3.9 Current ecological rating

(Following NRA (2009) Evaluation Criteria)

Parts of this site are deemed to be of **County-National Importance**. The site supports breeding Curlew, a species whose breeding population has experienced drastic declines on a national level, presence of wintering Hen Harrier; and the establishment of *Sphagnum*-rich poor fen habitat deemed to be of County Importance.

Other sections of the site support semi-natural habitats such as Birch woodland, pioneer cutaway habitats and smaller sections of high bog deemed to be of **local importance; higher value**.

4. CONSULTATION

4.1 Consultation to date

Consultation with interested parties.

There has been ongoing consultation about rehabilitation, biodiversity and other general issues over the years about Littleton bog group, including Littleton Bog, with various stakeholders in relation to:

- General consultation with range of stakeholders at annual Bord na Móna Biodiversity Action Plan review days 2010-2018.
- Open consultation with range of stakeholders at annual BAP review days 2010-2018.
- Consultation with the North Tipperary Heritage Forum during the period 2010-2015.
- General consultation at a local community event in Littleton in Dec 2016.
- General consultation with Tipperary County Council and other stakeholders in relation to the Littleton Labyrinth Project Feasibility Study.
- Ongoing engagement with Lisheen Mine.
- Archaeological Liaison Committee (National Museum of Ireland & Dept of Culture Heritage and the Gaeltacht).
- Midlands & East Regional WFD Operational Committee (River Basin Management Plans).
- Ongoing consultation with Coillte – proposed Coillte/BnM Midlands Native Woodland Project.
- Ongoing consultation with Slieve Ardagh Rural Development Group.
- General consultation with Tipperary County Council and other stakeholders in relation to the Midlands Network Trail.
- Specific Consultation with Tipperary Climate Action Officer and Biodiversity Officer relating to the Tipperary Climate Action Plan and the Mid-Tipperary Decarbonising Zone.

There was specific consultation and engagement about rehabilitation of the Littleton Bog group, including Littleton Bog, with various stakeholders during the period 2018-2021:

- Lisheen Mine.
- Irish Peatland Conservation Council.
- NPWS (site visits).
- Tipperary County Council (2018).
- Tipperary Heritage Forum.
- Kilkenny County Council.
- Consultation with members of the local community.
- Consultation with local community groups.
- Slieve Ardagh Rural Development.
- National University of Galway.
- Limerick Institute of Technology.
- Irish Wildlife Trust.
- Environmental Protection Agency.
- Birdwatch Ireland.
- Birdwatch Ireland Tipperary Branch.
- Forest Service.

- Coillte.

To inform the original Plan (Phase 1 Rehabilitation), both national and local stakeholders, local representatives of national bodies (such as Regional National Parks and Wildlife Service staff) and relevant offices in County Councils (such as the Heritage or Environmental Offices) were contacted. Any identified local interest groups were informed of the opportunity to engage with this rehabilitation plan and were invited to submit their comments or observations in relation to the proposed rehabilitation (Phase 1) at Littleton Bog or the programme in general.

4.2 Issues raised by Consultees

Some issues were raised by consultees during the consultation process for the rehabilitation plan for Ballybeg/Lanespark/Derryvella Bog and for response to consultation for rehabilitation across the Littleton Bog Group between 2018-2025, and these are summarised below.

NPWS welcomed the restoration and rehabilitation measures proposed for the Littleton Bog Group in 2018, particularly where it could result in the development of Annex I active raised bog or would significantly aid Ireland in meeting its commitments under the EU Habitats Directive.

NPWS (2018) suggested that BnM consider more fully the potential for forward-planning during production phases of its operation so that the topography of the commercial fields could be engineered so as to best facilitate rewetting of the sites. Consideration should be given to reprofiling works within the Littleton Bog Group.

NPWS (2018) highlighted the potential for more intensive rehabilitation during initial consultation and the potential for larger project opportunities focusing on GHG emission reduction creation of peat-forming habitats, biodiversity enhancement, other ecosystem services enhancement/restoration. The use of bunding at several sites was discussed.

Birdwatch Ireland (2018) welcomed the proposed restoration/rehabilitation of the Littleton Bog Group and highlighted need to take consideration of bird nesting season when carrying out works, particularly for Lapwing and Curlew.

IPCC (2018) requested clarity around the scope of sites included in the Littleton Rehabilitation Programme and recommended that priority be given to raised bog restoration, where possible. IPCC were concerned about the fact that milled peat extraction was projected to continue at Killeen Bog (in 2018, subsequently ceased in 2021). The IPCC were also unclear about the aims and objectives for sites with biodiversity interest. The IPCC recommended the use of contouring as a methodology to improve re-wetting outcomes.

The IPCC (2018) highlighted that monitoring of changes to water-levels as a result of rehabilitation could be improved using piezometers and queried the frequency of ecotope mapping. NPWS (2018) recommended that ongoing research into the interaction between rehabilitation measures and carbon emissions is prioritized so as to better inform future rehabilitation plans.

The Irish Farmers Association (IFA), The Department of Agriculture Food and the Marine, individual local residents and ICMSA queried likely impacts relating to the finalisation of several bog rehabilitation plans in 2021 and 2022. They raised concerns based on the proposed re-wetting in relation to flooding on adjoining lands and, specifically, with regards to the maintenance of drains. In previous submissions, the IFA also raised the issue of Health and Safety in relation to raising water levels as well as possible impacts on land and property prices.

Several individuals who owed adjacent land to bogs within the Littleton Bog Group expressed concerns about the potential impacts of re-wetting to their land (2018).

Several individuals and organisations expressed interest in the development of amenity and greenways through the Littleton Bog Group (2018). IPCC highlighted a bog area at the north of Littleton Bog that had been used for educational purposes in the past.

Tipperary County Council (2018) highlighted the need to avoid any unnecessary deterioration in the quality and quantity of ground and surface waters. Tipperary County Council (2018) also suggested that peatland water levels and flow regimes should be restored to as close to the natural reference conditions as possible.

Queries about future nature conservation designations were also submitted by IPCC, discussed with IWT and with Birdwatch Ireland Tipperary Branch. Birdwatch Ireland, Tipperary Branch (2018) suggested further management of sites for to improve habitat for breeding wetland birds.

The Irish Farmers Association (IFA) (2021-2022) expressed concerns regarding the future ownership of the BnM bogs subject to rehabilitation, in submissions made on earlier rehabilitation plans. They expressed a desire for contingency planning for potential future ownership of designated bogs so as to ensure no negative impacts arise on adjacent properties from any new ownership. A local landowner (2017) with a holding adjacent to a Littleton Bog made some enquires about the return of land originally CPOed by BnM.

University of Galway (2017) were interested in developing an INTEREG Project on peatland sites and were discussing the inclusion of several BnM sites in this proposed project. (This subsequently became the CarePeat INTEREG Project and Cavemount Bog Co. Offaly was included in the project, which is now completed).

Limerick Institute of Technology (LIT) were interested in developing a project on peatlands and paludiculture and were discussing the potential availability of land within the Littleton Bog Group. This proposal ultimately did not develop into a project on BnM lands.

An individual highlighted the presence of several rare Bee Orchid varieties along the BnM railway at Longford Pass.

Tipperary County Council developed a Climate Action Plan in 2024 and have developed an area called the Mid Tipperary Decarbonizing Zone. This Decarbonising Zone within the local authority area is to act as a test bed for a range of climate mitigation, adaptation and biodiversity measures in a specifically defined area through the identification of projects and outcomes that will assist in the delivery of the National Climate Objective (Tipperary County Council 2024).

4.3 BnM response to issues raised during consultation and rehabilitation 2018-2021

BnM carried out extensive consultation and engagement with all interested parties during 2018-2021.

Consultees during the Phase 1 rehabilitation (2018-2021), including NPWS and the IPCC, suggested the use of more intensive rehabilitation measures such as contouring and bunding. These ultimately were beyond the scope of the rehabilitation budget allocated to these sites by BnM at the time (2018-2021). PCAS is now an opportunity to carry out some of these suggested measures (e.g. bunding, recontouring) through the Littleton Bog Group as part of Phase 2 rehabilitation and various additional phase 2 rehab has been proposed for Templetouhy,

Carrickhill, Derryville, Baunmore, Inch, Ballybeg, Derryvilla and Killeen. This additional Phase 2 rehab is dealt with by the 2025 update to the Ballybeg-Lanespark-Derryvilla Rehabilitation Plan 2025.

Sphagnum inoculation is one measure that was initially suggested by IPCC (in 2018) for use at Ballysorrell to support raised bog restoration. This measure was ruled out initially by BnM in 2018 due to its relatively high cost, lack of resources and other logistical issues such as lack of suitable local *Sphagnum* donor sites. Since then, BnM has developed the Peatlands and People LIFE Project (Home | Ireland's Climate Action Catalyst | Peatlands & People) and one of the main objectives of this project on BnM land is to inoculate approx. 800 ha of suitable residual deep peat with *Sphagnum* plugs to speed up the trajectory of development of *Sphagnum*-rich embryonic bog vegetation. So far, 350 ha has been inoculated across midlands bogs. The future selection of sites within the Littleton Bog Group for *Sphagnum* inoculation will be dependent on availability of resources for planting. Site visits to Lanespark and Littleton (2025) has also shown that *Sphagnum* is present on site and is recolonising and spreading in certain areas quickly in response to the re-wetting in 2018-2021.

Rehabilitation measures should positively impact the water quality in receiving water bodies through enhancing the water attenuation across rehabilitated sites. The robust water monitoring programme implemented will be used to assess water quality leaving rehabilitated sites at designated points. BnM also advised that decommissioning of silt ponds will only be carried out when the EPA are satisfied that adequate stabilisation of the bog has been achieved and silt ponds are no longer required. This decommissioning will be determined by water quality results and EPA approval.

During Phase 1 of the rehabilitation across Littleton Bogs, individual landowners who expressed concerns were met on site. No boundary drains were blocked and, in several instances, (Ballybeg) some internal drainage was modified to allow water draining from external lands to flow through these sites unhindered. It is the intention of BnM that the re-wetting of the bogs will be carried out in such a manner that does not impact on third party lands. Where it is deemed that blocking of a shared drain would cause any adjoining lands to be adversely affected, this will be avoided, and alterations made to the rehabilitation plan. In general, drains around the margins of the bog will not be blocked. It is intended that rehabilitation measures will not significantly alter the existing topographical catchments and that the spine of the drainage networks, those which the upstream catchments drain through, will be retained by BnM. If issues arise with boundary drainage in the future, then these will be dealt with by BnM.

BnM and Tipperary County Council carried out a feasibility study of the potential for amenity development across the Littleton Bog Group called Littleton Labyrinth in 2018-2020. The first phase of this amenity has been completed and a greenway has been constructed at Killeen Bog to Loch Doire Bhile. A further extension (Phase 2) is proposed at Ballybeg and Derryvella Bog. There is potential for future extensions to this greenway network in the future. These greenways can be integrated into the rehabilitated landscape with no significant impact to the previous re-wetting.

Rehabilitation plans are not intended to plan out future management of these sites. Known or planned after-use (way-leave, Littleton Labyrinth greenway feasibility) has been incorporated, where possible, in the rehabilitation plan. Peatland rehabilitation is not intended to constrain future land-uses, where they are compatible with this environment.

Ballybeg Bog is proposed to be included in the Coillte/BnM Midlands Native Woodland Project (Midlands Native Woodland - Coillte). The main objective of this proposed project is to develop and enhance native woodland in areas of cutaway that would remain naturally dry, developing woodland habitat that would naturally complement wetland and peatland habitats already developing across these sites. An area of 11.2 ha is proposed for planting

at this Bog. This proposed project is currently being considered for consent by the Forest Service. Areas proposed to be included in Native Woodland Project have also been mapped as constrained land in the rehabilitation plan.

BnM will continue to manage their land bank into the future. As industrial peat production has now ceased on BnM lands and rehabilitation measures carried out, a regular drainage maintenance programme will not be required or carried out as would have been the case in the past. However, if issues arise with the BnM internal drainage system that affects upstream or downstream landowners, then these issues will be addressed by BnM.

BnM considers issues regarding estate security, fire risk, invasive species and water pollution of utmost importance. BnM intends to maintain security and manage fire risk over the entirety of the estate. In this regard, rehabilitation should have no detrimental impact on these issues. Regarding water pollution, BnM is regulated by the EPA and as such adheres to the strict water pollution measures laid out by the same. BnM will consider future opportunities for biodiversity enhancement, subject to availability of resources and funding, where possible. BnM intends to maintain a “No Shooting” policy on Littleton Bog.

It is the intention of BnM to keep secure the estate and ensure that any anti-social behaviour that occurs within the estate is reported and dealt with by the appropriate authorities.

5. REHABILITATION GOALS AND OUTCOMES

The rehabilitation goals and outcomes outline what BnM want to achieve by implementing the rehabilitation. These include:

- Meeting conditions of IPC Licence.
- Stabilisation or reduction in water quality parameters of water discharging from the site (e.g. suspended solids).
- Reducing pressure on receiving waterbodies that have been classified as *At Risk* from peatlands and from peat extraction, via stabilization or improving water-quality from this bog, and therefore, reducing pressures.
- Optimising hydrological conditions for **climate action benefits**.
- Optimising hydrological conditions for the protection of exposed archaeological structures, their retention in situ and preservation into the future.
- Integrating rehabilitation measures with existing land-use (e.g. conifer forestry). Supporting other potential future land-uses. Integrating rehabilitation measures with future potential land-uses on site. It is not proposed to carry out any rehabilitation actions to change or negatively affect any infrastructure.
- The main goal and outcome of this plan is the successful rehabilitation (environmental stabilisation) of peatlands used for industrial peat production at the bog in a manner that is acceptable to both external stakeholders and to BnM and which optimise climate action and other ecosystem service benefits.

The rehabilitation goals and outcomes take account of the following issues.

- BnM have carried out rehabilitation at Littleton Bog in 2018-2021. Significant drain-blocking and re-wetting was carried out during this phase.
- It will take some time for stable naturally functioning habitats to fully develop at Littleton Bog. This will happen over a longer timeframe than the implementation of this rehabilitation plan.
- Re-wetting residual peat will initially maintain and enhance the carbon storage capacity of the bog. There is scientific consensus that restoration of hydrology in damaged bog can improve carbon storage, water storage and attenuation and help support biodiversity both on the site and in the catchment (See Section 3.8). This will reduce carbon emissions from the site from a larger carbon source to a smaller carbon source. In time, the site has the capacity to develop in part as a carbon sink.
- It is not expected that the cutover bog in the former production area has the potential to develop active raised bog (ARB) analogous to the priority EU Habitats Directive Annex I habitat within the foreseeable future (c.50 years). Littleton Bog has relatively some sections with relatively deep residual peat across the site, with sections of the bog containing shallow residual peat and proportions of the bog cutaway with exposed gravel ridges. Therefore, there are areas that have potential to develop *Sphagnum*-rich habitats in this timeframe. Nevertheless, re-wetting across the entire bog, as part of the Scheme, will improve habitat conditions of the whole bog. Other peatland habitats such as wetland or scrub/woodland will develop in a wider mosaic that reflects underlying conditions.
- Rehabilitating former industrial peat production bog will also in the longer-term support other ecosystem services such as such the development of new habitat to support biodiversity and local attenuation of water flows from the bog.
- WFD status in receiving water bodies can be affected by peatlands and peat extraction but is also affected by other sources such as agriculture. In addition, receiving water bodies that are assessed as At Risk from

peatlands and from peat extraction are likely to have several contributary sources of impacts (private peat extraction and BnM). Reducing pressures due to former peat extraction activities at Littleton Bog will contribute to stabilising or improving water quality status of receiving water bodies in general. Ultimately, improving the WFD status of the receiving water body will depend on reducing pressure from a range of different sources, including peatlands in general (private and BnM).

- Re-wetting in general will benefit the future preservation of most known and unknown archaeological features.

6. SCOPE OF REHABILITATION

The principal scope of this enhanced rehabilitation plan is to rehabilitate the bog. This is defined by:

- The area of Littleton Bog within the rehabilitation footprint.
- EPA IPC Licence - Ref. P0499-01. As part of Condition 10.2 of this licence, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area.
- Much of the site already has establishing pioneer cutaway habitats with some areas having well-developed habitats. Targeted drain-blocking, wetland outfall management and deep peat measures are the most suitable rehabilitation approach for the site.
- BnM have defined the key goal and outcome of rehabilitation at Littleton Bog as **environmental stabilisation** and **optimising residual peat re-wetting,** to enhance the development of compatible habitats.
- Rehabilitation of Littleton Bog will support multiple national strategies of climate action, biodiversity action and other key environmental strategies such was the Water Framework Directive.
- Rehabilitation of Littleton Bog also supports and aligns with the goals and objectives of the Tipperary Decarbonizing Zone.

6.1 Key constraints

- **Bog conditions.** Rehabilitation outcomes are constrained by the environmental characteristics of the particular bog. For example, there is potential for raised bog restoration at some sites where there has not been significant industrial peat extraction, and the peat body is largely intact (deep peat sites that are drained). At other sites, most of the peat mass has been removed, the environmental characteristics of these areas have therefore changed radically (peat depths, hydrology, water chemistry, substrate type, nutrient status, etc.) and there will therefore be different habitat outcomes (wetlands, fen, heathland, grassland and Birch woodland).
- The majority of Littleton Bog has shallow residual peat with some deeper peats. The bog has a partially pumped drainage regime. Two pumps are still present on site but remain non-functional. Wetland habitats (fen, wetland, reedswamp) and dry cutaway habitats (Birch woodland, scrub and grassland) are the most likely habitats to develop in areas with shallower peat. Areas of residual deeper peat are likely to develop *Sphagnum* rich bog vegetation in time. These habitats are already developing in places on older cutaway.
- **Surrounding landscape and neighbours.** Another key constraint is the interaction between the BnM bogs and the surrounding landscape. Care has to be taken that no active rehabilitation management is carried out that could negatively and knowingly impact on surrounding land. This includes any hydrological management on neighbouring farmland. It is anticipated that the work carried out at Littleton (blocking drains and re-wetting cutaway peatlands) will not have any flooding impacts on adjacent land.
- **Archaeology**. The discovery of monuments or archaeological objects during peatland rehabilitation may potentially constrain the rehabilitation measures proposed for a particular area. The rehabilitation will optimise hydrological conditions for the protection of exposed archaeological structures, their retention in situ and preservation into the future. Any newly discovered archaeology may require rehabilitation measures to be reviewed and adapted. Should any previously unknown archaeological material be uncovered during the rehabilitation works, it will be avoided and reported to the BnM Archaeological Liaison Officer and the National Museum of Ireland.

- **Turf-cutting.** There are areas of active turf cutting (turbary) on the margins of the bog. No rehabilitation measures will be carried out that affect turbary rights.
- **Coillte Conifer Plantation.** No measures will take place that will affect Coillte conifer forestry.
- **Biomass**. A small area (10 ha) used as a pilot Eucalyptus biomass project was constrained.
- **Conifer plantation/agricultural grassland**. Conifer plantation forestry and parcels of agricultural grassland border the bog. These areas have been identified as constrained land where they overlap the rehabilitation footprint.
- **Potential Future Amenity development.** BnM and Tipperary County Council carried out a feasibility study of the potential for amenity development across the Littleton Bog Group called Littleton Labyrinth. There is potential for future extensions to this greenway network through Littleton Bog. The proposed rehabilitation measures will not impact on the delivery of any future amenity as a route is still available across the bog, and there is no constraint to rehabilitation.

6.2 Key Assumptions

- It is assumed that BnM will have all resources required to deliver this project.
- It is expected that weather conditions will be within normal limits over the rehabilitation plan timeframe. Long periods of wet weather have the capacity to significantly affect ground conditions and constrain drain blocking and other ground activities.

6.3 Key Exclusions

The scope of this rehabilitation plan does not cover:

- Areas subject to turf cutting are excluded.
- Coillte conifer plantation.
- The longer-term development of stable naturally functioning habitats at Littleton Bog. The plan covers the short-term rehabilitation **actions** and **an additional monitoring and after-care programme** to monitor the rehabilitation and to respond to any needs.
- This plan is not intended to be an after-use or future land-use plan for Littleton Bog.
- The longer-term management of this site, potentially as a nature conservation site, or for amenity, or for other uses in the future.

7. CRITERIA FOR SUCCESSFUL REHABILITATION

This section outlines what criteria will be used to indicate successful rehabilitation and what critical success factors are needed to achieve successful rehabilitation. All criteria used will be measured to validate the achievement of the rehabilitation goals and outcomes and validate the completion of the rehabilitation.

The key objective of this enhanced rehabilitation plan is **environmental stabilisation** and the stabilisation of any emissions from the site that related to the former industrial peat extraction activities.

Rehabilitation is generally defined by BnM as:

- stabilisation of bare peat areas via targeted active management (e.g. drain-blocking/re-wetting) slowing movement of water across the site and encouraging natural colonisation; and
- mitigation of key emissions (e.g. potential run-off of suspended solids).

In addition, BnM wish to optimise climate action and other ecosystem service benefits.

7.1 Criteria for successful rehabilitation to meet EPA IPC licence conditions:

- Rewetting of residual peat in the former area of industrial peat production to offset potential silt run off and to encourage and accelerate development of vegetation cover via natural colonisation and reducing the area of bare exposed peat. See Table 7.1 for a summary of the criteria for successful rehabilitation and associated monitoring. The target will be the delivery of measures and this will be measured by an aerial survey after rehabilitation is completed.
- That there is a stabilizing/improving concentration of suspended solids and ammonia in discharges from BnM sites, associated with the measures undertaken to stabilize the peat surface by the blocking of the internal drainage system and the maximized rewetting of the peat surface. This will be demonstrated by developing a stable or downward trajectory of water quality indicators (suspended solids and ammonia) towards what would be typical of a re-wetted cutaway bog. This will be measured via water quality monitoring (suspended solids and ammonia) for at least 2 years after the rehabilitation has been completed.
- Receiving water bodies have been classified under the River Basin Management Plan and this classification includes waters that are *At Risk* from peatlands and peat extraction. The success criteria will be that the *At Risk* classification will see improvements in the associated pressures from this peatland or if remaining *At Risk*, that there is an improving trajectory in the pressure from this peatland.

Table 7-1 Summary of Success criteria, targets, how various success criteria will be measured and expected timeframes.

Criteria type	Criteria	Target	Measured by	Expected Timeframe
IPC validation	Rewetting in the former area of industrial peat production	Delivery of rehabilitation measures Reduction in bare peat.	Aerial photography after rehabilitation has been completed – to demonstrate measures (drain-blocking)	2025-2027

Criteria type	Criteria	Target	Measured by	Expected Timeframe
			Establishment of a baseline for future monitoring of bare peat, vegetation establishment and habitat condition.	
IPC validation	Key water quality parameters Ammonia, Phosphorous, Suspended solids, pH and conductivity	Reduction or stabilisation of key water quality parameters associated with this bog	Water quality monitoring for a period after rehabilitation has been completed	2025-2027
IPC validation	Reducing pressure from peat production on the local water body catchment (WFD)	Where this section of the water body, that this bog drains to, has not been identified as under pressure from peat extraction, that the intervening EPA monitoring programme associated with its Programme of Measures for this water body, confirms that its classification remains at not being at risk from peat extraction associated with activities at this bog.	EPA WFD monitoring programme	WFD schedule

Meeting climate action verification criteria and monitoring of these criteria after the scheme has been completed is dependent on support from the Climate Action Fund or other sources of funding. Note that monitoring and verification of the overall scheme will be stratified – not all these criteria will be measured at each individual site. Baseline monitoring to be carried out during the scheme when rehabilitation is complete. Sites can be re-monitored in the future and compared against this baseline.

7.2. Critical success factors needed to achieve successful rehabilitation as outlined in the plan

The achievement of successful rehabilitation as outlined in the plan requires:

- **Funding to pay for resources required to deliver the planned rehabilitation (BnM and external).** BnM maintains a provision on its balance sheet to pay for these future costs. BnM is fully committed to meeting its obligations relating to rehabilitation and decommissioning under the Integrated Pollution Control

Licence. It is expected that additional costs of enhanced rehabilitation will be supported by Government through the Climate Action Fund and Ireland's National Recovery and Resilience Plan.

- **BnM to have sufficient resources (staff and training) to deliver the planned rehabilitation with required associated skills and competencies.**
- **BnM to have sufficient resources (suitable machinery) and staff to maintain this machinery.**
- **Weather conditions to be within normal limits over the rehabilitation plan timeframe.** Long periods of wet weather have the capacity to significantly affect ground conditions and constrain the delivery of rehabilitation. The potential impact of wet weather on ground conditions can be reduced by appropriate planning and management. BnM have significant experience of managing these issues through 70 years of working in these peatland environments.
- **Rehabilitation measures to be effective.** The rehabilitation measures proposed in this plan are based on 40 years of BnM experience of peatland management and best practice applied internationally in peatland management. Measures proposed in this plan have already been shown to be affective at other sites. BnM will apply a flexible and adaptable approach to the more innovative rehabilitation measures proposed in this plan**.** If measures are not initially effective, BnM will review any requirement for additional practical rehabilitation.
- **Natural colonisation of vegetation to develop semi-natural habitats at a rate within the normal limits.** The development of naturally functioning semi-natural habitats on degraded bog takes time. It may take 30-50 years for active raised bog vegetation to re-develop on suitable cutaway that was previously bare peat. However, BnM experience has demonstrated the effectiveness of these type of measures for re-wetting bog and creating carbon sinks (Renou-Wilson *et al*. 2018).
- Rehabilitation measures have been designed to accelerate and work with natural colonisation and other natural processes. BnM experience of rehabilitation has shown that re-wetting improves conditions for natural colonisation and that natural colonisation is accelerated where the environmental conditions are most suitable. Rehabilitation measures have been designed to modify the conditions of areas within sites where conditions are less suitable for natural colonisation (modifying hydrology, topography, nutrient status or availability of potential seed sources).
- **Monitoring to be robust and effective.** Rehabilitation Monitoring will be established to validate the success of rehabilitation as required by Condition 10 of the IPC Licence and to verify the benefits of the proposed enhanced measures to optimise climate action. This will focus on a collecting a range of scientific data that can then quickly be adapted and into metrics that can be used to measure changes in various ecosystem services.

8. REHABILITATION ACTIONS AND TIME FRAME

Peatland rehabilitation requires detailed planning and the use of data from desktop surveys and field surveys. This data in association with topographical and hydrological modelling will be important in planning the future peatland landscapes and planning the use of the most appropriate rehabilitation methodologies to maximise climate action benefits. Hydrological modelling indicates those areas that are likely to re-wet when drains are blocked, based on the current topography, and areas where water levels may have to be modified, where needed. Enhanced rehabilitation measures will look to optimise hydrological conditions for re-wetting peat in other areas. This planning is also essential for matching the most sustainable rehabilitation methodology to the most suitable cutaway environment to maximise the benefits of the resource outlay (maximising cost/benefit).

A number of illustrative figures have been produced to inform Rehab Planning and Design, including Aerial Photography, Peat Depths, LiDAR Surface Maps, and Depression Analysis modelling; these are included in the accompanying Mapbook as the drawings referenced below:

BNM-ECO-26-11B-21 Littleton Bog: Aerial Imagery 2000

BNM-ECO-26-11B-22 Littleton Bog: Aerial Imagery 2020

BNM-ECO-26-11B-04 Littleton Bog: Peat Depths

BNM-ECO-26-11B-03 Littleton Bog: LiDAR Map

BNM-ECO-26-11B-09 Littleton Bog: Depression Analysis

The rehabilitation actions themselves will be a combination of measures to re-wet peat and encourage natural colonisation. The distribution of these measures is provisionally outlined in drawing titled *BNM-ECO-26-11B-20 Littleton Bog: Standard Rehab Measures* in the accompanying Mapbook**.**

Extensive drain-blocking was already carried out as part of the rehabilitation programme between 2018-2022.

Rehabilitation measures for Littleton included (see Table 8.1):

- Re-assessment of the pumping regime and removing pumps if this was desired and had no significant external impact or impacts on proposed future land-uses. Initial hydrological modelling indicated that a part of the site would develop a mosaic of wetland habitats with some permanent deeper water if pumps were decommissioned. Hydrological management looked to optimise summer water levels to maximise the development of wetland vegetation (by looking to set water depths at < 0.5 m, where possible. It is inevitable that some sections will naturally have deeper water due to the topography at this site). Water-levels were adjusted at outfalls and by adjusting piped drainage, where possible. More sustainable permanent gravity drainage solutions were examined. It is expected that a natural seasonal regime of water fluctuation will develop, with water-levels fluctuating in association with levels of surrounding rivers.
- A targeted drain-blocking programme was implemented across the cutaway, where possible. In general, field drains were blocked where possible to re-wet cutaway and re-wet to the optimum water-level. More intensive measures were targeted towards the bare peat.
- Less intensive measures (targeted drain-blocking) were used in areas where habitats have already established.
- Hydrological measures included modifying outfalls and managing water levels with overflow pipes.

The existing silt pond was retained and maintained during the rehabilitation phase. During the monitoring and verification phase the silt pond wase continually inspected and maintained, where appropriate. When it is deemed that the silt pond is not required, as the bog has been successfully stabilised and there is no silt run-off, the condition of the silt pond will be reviewed. The silt pond will either be de-watered (water levels lowered to a level where the silt pond will naturally develop as a small wetland feature), left in situ, or infilled (where discharges do not require silt control).

8.1 Completed

- A rehabilitation programme was carried out in Littleton between 2018-2021. This comprised of a range of measures outlined in *BNM-ECO-26-11B-20 Littleton Bog: Standard Rehab Measures*. These measures varied in intensity, were targeted in places and reflected the existing environmental conditions.
- Some areas of bare peat had regular drain-blocking (Drain-blocking).
- Southwest portion of Littleton Bog (Derryhogan Bog subsite) had a combination of regular drain blocking, trench drain blocking and outfall management to encourage re-wetting and bog restoration (Deep peat re-wetting).
- Some areas were subject to reducing or ceasing pumping (Hydrological management).
- Some areas had minimal intervention as there were already re-vegetated and developing a mosaic of wetland, woodland and peatland habitats (Minimal intervention).
- Some areas were allowed to continue to develop as wetland due to the natural breakdown of drainage and ceasing drain maintenance (Wetland).
- Southwest portion of Littleton Bog (Derryhogan Bog subsite) was also subject to some tree clearance (removal of feral conifers) to encourage breeding Curlew on site (Tree clearance).
- Pumping ceased in the northern section of the site in 2022. Some additional drainage was carried out in 2022 to alleviate flooding that was occurring in this area and that was impacting on adjacent land and the rail underpass at the N9 motorway. Pumps at Littleton Bog are now permanently depowered and scheduled for removal.
- The majority of Littleton Bog is now vegetated or re-vegetating. Some sections have been developing as secondary habitats for a significant period of time (40 years). Birch woodland and scrub has significantly expanded across the site on some of the drier ground. The central part of the site is developed a mosaic of wetland and woodland habitats, on mostly shallow residual peat. The wetland habitats include some Reedbeds and wet scrub where the water is deeper, and some poor fen vegetation with Bog Cotton and Bottle Sedge dominating where there are water levels closer to the peat surface.
- The western margins have several lobes where there is deeper residual peat and more typical bog vegetation is developing. The wetter areas and the flooded trenches have developed mats of *Sphagnum* moss. The drier areas have developed a drier Heather-dominated bog vegetation type, particularly where there are relatively steep slopes. Drain-blocking in these areas with residual deep peat is encouraging the development of bog vegetation and *Sphagnum*-rich embryonic bog vegetation.
- In general, cutaway habitats are developing according to the underlying environmental conditions and reflect the varying topography, hydrology and peat depths. Drain-blocking and other rehabilitation measures have had a significant positive impact across the site in re-wetting residual peat and enhancing the development of wetter peatland and wetland habitats. Ceasing pumping has also had a significant impact and has led to the development or a large wetland in the north-western corner of the site.

8.2 Short-term planning actions (0-1 years)

- Seek formal approval of this plan.
- Ensure all activities comply with the environmental protection requirements of the IPC Licence.

8.3 Short-term practical actions (0-2 years)

- Silt ponds will be monitored during this period and there will be continued maintenance and cleaning to prevent potential run-off of suspended solids from the site during the rehabilitation phase.

8.4 Long-term (>5 years)

- Evaluate success of short-term rehabilitation measures outlined above and remediate where necessary.
- Delivery of a monitoring, aftercare and maintenance programme (See section 9 below).
- Decommissioning of silt-ponds will be assessed and carried out, where required.
- Reporting to the EPA will continue until the IPC Licence is surrendered.

8.5 Timeframe

- **2026**: Short-term planning actions.
- **2025-2026**: Short-term delivery actions.
- **2026**: Long term delivery actions. Evaluate success of short-term rehabilitation measures outlined above and remediate where necessary.
- **2028**: Decommission silt-ponds, if necessary.

8.6 Budget and costing

BnM maintains a provision on its balance sheet to pay for the future costs of standard rehabilitation and decommissioning. This is updated every year - for more information see the BnM Annual Report (BnM, 2025). BnM is fully committed to meeting its obligations relating to rehabilitation and decommissioning under the Integrated Pollution Control Licence.

At this time, a ‘standard’ rehabilitation provision (sufficient to discharge the requirement of Condition 10 in the licence) has been allocated to the site based on the area of different cutaway types across the site.

9. AFTERCARE AND MAINTENANCE

9.1 Programme for monitoring, aftercare and maintenance

This programme for monitoring, aftercare and maintenance has been designed to meet the Conditions of the IPC Licence. This is defined as:

- There will be **initial monitoring assessments** of the site to determine the general status of the site, the condition of the silt ponds, assess the condition of the rehabilitation work, monitoring of any potential impacts on neighbouring land, general land security, boundary management, dumping and littering.
- These monitoring visits will also consider any requirements for further practical rehabilitation measures.
- **Water quality monitoring** at the bog will be maintained. The main objective of this water quality monitoring will be to establish a baseline and then monitor the impact of peatland rehabilitation on water quality from the bog.
- Monitoring results will be maintained, trended and reported on each year as part of the requirement to report on Condition 10.1 of the IPC Licence on Bog Rehabilitation in the Annual Environmental Report, which will be available in April each year at www.epa.ie.
- The parameters to be included (as per condition 6.2 of the IPC Licence) include monthly monitoring for pH, Suspended Solids, Total Solids, Total Phosphorus, Total Ammonia, Colour, and COD and DOC.
- If, after two years, key criteria for successful rehabilitation are being achieved and key targets are being met, then the water quality monitoring will be reviewed, with consideration of potential ongoing research on site. The water quality data, the aerial surveys and the habitat mapping will be collated and will be submitted to the EPA as part of the final validation report.
- If, after two years, key criteria for successful rehabilitation have **not** been achieved and key targets have **not** been met, then the rehabilitation measures and status of the site will be evaluated and enhanced, where required. This evaluation may indicate no requirement for additional enhancement of rehabilitation measures but may demonstrate that more time is required before key criteria for rehabilitation has been achieved. Monitoring of water quality will then also continue for another period to be defined.
- Where other uses are proposed for the site that are compatible the provision of biodiversity and ecosystem services, these will be assessed by BnM in consultation with interested parties. Other after-uses can be proposed for licensed areas and must go through the required assessment process and planning procedures.

9.2 Rehabilitation plan validation and licence surrender – report as required under condition 10.4

IPC Licence Condition 10.4. *A final validation report to include a certificate of completion for the Rehabilitation Plan, for all or part of the site as necessary, shall be submitted to the Agency within six months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.*

Reporting to the EPA will continue until the IPC Licence is surrendered. The bog will be included in the full licence surrender process as per the Guidance to Licensees on Surrender, Cessation and Closure of Licensed Sites EPA, 2012, when:

- The planned rehabilitation has been completed.

- The key criteria for successful rehabilitation have been achieved and key targets have been met;
- Water quality monitoring demonstrates that water quality of discharge is stabilising or improving; and
- The site has been environmentally stabilised.

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APPENDIX I: BOG GROUP CONTEXT

The Littleton Bog Group IPC Licenced area was in industrial peat production for several decades until 2017. There are 11 defined bog units covering a total area of 4,421 ha. Each bog area further comprises a range of habitats from bare milled peat former production areas to re-colonising cutaway to workshops areas and transport infrastructure. Industrial peat extraction from these sites mainly supplied briquettes (Littleton Brickette Factory), horticulture and commercial turf for domestic use.

Industrial peat extraction across the majority of the Littleton Bog Group ceased in 2017. (Killeen extended to 2021). Littleton Brickette Factory finally ceased production in 2021. All licences for sod turf production also ceased during this period.

The Littleton Rehabilitation Programme started in 2018. Rehabilitation was planned and implemented across all of the Littleton Bogs. A range of different strategies was implemented across different sites, which reflect variable underlying environmental conditions and land-uses and potential future land-uses at the time.

Drain-blocking was carried out at Ballysorrell Bog and Knockahaw Bogs with the objective of raised bog restoration. These bogs had not had significant peat extraction and retained raised bog restoration potential. Rehabilitation measures at Templetouhy took account of the Bruckana Windfarm, which was is operational since 2015. Bawnmore, Littleton, and Derryville were developing cutaway habitats already as scrub and wetland, and targeted measures were carried out through these sites to enhance these developing habitats. More intensive drain-blocking was carried out across Carrickhill, Inch, Ballybeg, Derryvilla, Longford Pass and Killeen Bogs, particularly where there was recent industrial peat extraction and there were functional drains and bare peat dominated. Pumping ceased at Carrickhill, Inch and Baunmore. Some pumping continued for various periods at Derryville, Longford Pass and Littleton, due to operational issues. Some fertiliser treatments were carried out at Carrickhill and Derryvilla in 2020 as a pilot rehabilitation project.

Rehabilitation measures so far has been very effective. The majority of the targeted areas have been re-wetted. Ballysorrell and Knockahaw Bogs are responding quite quickly to the new conditions with the development of Sphagnum and improvement in bog conditions. Areas at Templetuohy, Bawnmore, Littleton and Derryvilla are changing quickly with the development of existing habitats and new pioneer vegetation where there was bare peat. Habitats at Killeen and Lanespark are developing and integrating with the new greenway amenity. Areas in Carrickhill, Inch and Killens that where large areas of bare peat in 2018 have been slower to recolonise due to underlying environmental factors (deeper residual peat).

A project called the BnM/Coillte Midlands Native Woodland Project was developed over the same period (Midlands Native Woodland - Coillte). It was proposed to be funded and administered by the Forest Service. The main objective of this proposed project is to develop and enhance native woodland in areas of cutaway that would remain naturally dry, developing woodland habitat that would naturally complement wetland and peatland habitats already developing across these sites. An initial feasibility study was carried out in 2018 and a project was developed across the Littleton bogs, which finally identified 120 ha of cutaway to be developed as woodland. This project has piloted alternative methods to establish native woodland, including seeding, and these trials were carried out at Bawnmore. This proposed project has not been approved by the Forest Service yet. Areas of cutaway at Carrickhill, Bawnmore, Inch, Ballybeg and Killeen have been proposed as part of this project.

The Littleton Labyrinth is a proposed amenity project that was also developed during this period, in partnership with Tipperary County Council. Initially a feasibility study was carried out that looked at developing greenway

amenity, and associated facilities across the Littleton Bogs, and potential links to existing infrastructure and local villages/towns. The first phase of this project was developed by Tipperary County Council in 2023/24, and a greenway was constructed on former BnM industrial railway though Killeen and Lanespark Bog to link with Loch Doire Bhile amenity, north of Lanespark. There are proposals to develop a Phase 2 shortly, with additional links being planned in Ballybeg and Derryvilla Bogs. This project is in pre-planning and is funded via Failte Ireland.

BnM rehabilitated several bogs in the Littleton Bog Group via Peatland Climate Action Scheme in 2025. The main objective of this proposed Phase 2 rehabilitation is to look at enhancing re-wetting and development of pioneer vegetation to support climate action, where possible. Measures are likely to include targeted drain-blocking, use of fertiliser to encourage pioneer vegetation growth, water-level management (adjustment of outfalls and use of over-flows). Bogs included Templetouhy, Derryville, Carrickhill, Baunmore, Inch, Ballybeg, Inch and Killeens.

A breakdown of the component bog areas for the Littleton Bog Group IPC Licence Ref. P0499-01 is outlined in Table Ap-2. Industrial peat production history varies across the Littleton bog group, so there is a wide range of peat depths at present.

Table Ap-2: Littleton Bog Group names, area and indicative status

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
Carrickhill	170 ha	Cutover Bog Industrial peat production started in the 1970's and ceased in 2017. There is residual deep peat across much of this site. Carrickhill had a partially pumped drainage system.	Carrickhill Bog formerly supplied peat to the Littleton briquette factory. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities. The pump was decommissioned in 2018. Drain blocking was carried out in 2018. A fertiliser treatment on part of the headland was carried out in 2021. The majority of the site is still mostly bare peat. Carrickhill is proposed for the Coillte/BnM Midlands Native Woodland Project. 28 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service.	2017	Draft 2018 Phase 1 Rehab measures implemented 2018-2021. Updated 2025. Phase 2 PCAS measures ongoing 2026
Templetuohy	737 ha	Cutover Bog Industrial peat production commenced at Templetuohy Bog in 1940's. Areas began to develop as cutaway during the 1980s as peat extraction ceased on a phased basis. Industrial peat extraction finally ceased in 2017. This bog has a partially pumped drainage system. Part of the site has developed pioneer cutaway habitats. Areas re-developed for peat extraction in 2015-17 are now revegetating quickly. Areas that were used for peat extraction upto 2017 are a	Templetuohy Bog formerly was developed to supply fuel sod peat and also supplied peat to the Littleton briquette factory. BnM have constructed a 40MW Wind Farm with 14 turbines and road network on cutaway at Templetuohy bog called Bruckana Wind Farm. This windfarm is operational. Pumping is still operational across this site to support the windfarm infrastructure.	2017	Draft 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025. Phase 2 PCAS measures ongoing 2026

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
		mosaic of re-wetted bare peat and pioneer communities.			
Derryville	250 ha	Cutover Bog Industrial peat production commenced at Derryville Bog in 1970's. Areas began to develop as cutaway during the 2000s as peat extraction ceased on a phased basis. Peat extraction finally ceased in 2017. This bog has a partially pumped drainage system.	Derryville Bog formerly supplied peat to the Littleton briquette factory. Part of the site has been developed for conifer forestry and is leased to Coillte. Part of the site was sold to Lisheen Mine and removed from the IPC Licence in the 2000s. Much of the former production area on site is developing pioneer cutaway vegetation communities, the remainder of the site is bare peat and developing wetland. Pumping continued at Derryville until 2022. Pumping has now ceased, and measures have been implemented in 2024 to manage water levels across the site and to decommission the pump.	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025 Phase 2 PCAS measures ongoing 2026
Bawnmore	531 ha	Revegetating cutover bog. Industrial peat production commenced at Baunmore Bog in 1970's. Areas began to develop as cutaway during the 2000s as peat extraction ceased on a phased basis. Peat extraction finally ceased in 2017. Much of the site is now developing a mosaic of woodland, peatland and wetland habitats. Baunmore had a partially pumped drainage regime.	Bawnmore Bog formerly supplied peat to the Littleton briquette factory. Much of the site is developing pioneer cutaway habitats and the site has significant biodiversity value. Pumping ceased in 2018. Part of the access is used for log biomass storage (for Edenderry Power). Bawnmore is proposed for the Coillte/BnM Midlands Native Woodland Project. 39 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service.	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025 Phase 2 PCAS measures ongoing 2026
Ballysorrel	196 ha	Drained raised bog – This site was initially drained for peat extraction. It was developed for peat production in the 1970s, but milled peat harvesting only occurred over a short 2 year timeframe. The site was then left as a peat reserve to be re-developed in the future. Restoration/drain blocking carried out in in 2018.	Much of the site was bare peat in the early 2000s. The site has since re-vegetated naturally (in a drier situation) since then and is now responding quickly to the recent re-wetting. Much of the high bog has re-colonised with Heather-dominated vegetation. Small hummocks of *Sphagnum* capillifolium and S. subnitens are present. *Sphagnum* spp. are also present in some low-lying areas that are permanently waterlogged and are spreading.	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025 Phase 2 PCAS measures ongoing 2026
Inch	120 ha	Cutover Bog Industrial peat production since 1970s. Finally ceased in 2017. Inch had a partially pumped drainage regime.	Inch Bog formerly supplied peat to the Littleton briquette factory. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities with deep peat areas slow to colonise and remaining mostly bare peat.	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
			Pumping ceased in 2018. Inch is proposed for the Coillte/BnM Midlands Native Woodland Project. 19 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service.		Updated 2025 Phase 2 PCAS measures ongoing 2026
Longford Pass (Popes Bog)	214 ha	Cutaway Bog Peat production at Longford Pass bog commenced in the 1940's and finally ceased in 2017. Peat extraction ceased and cutaway habitats began to develop on a phased basis. Longford Pass has a partially pumped drainage system.	Longford Pass Bog initially was developed as a sod turf production site. It then formerly supplied peat to the Littleton briquette factory. The site was bisected by the construction of the N8 Motorway in 2000s. A small area between the new motorway and R639 (old main road) was leased and developed for farmland in 2018. Longford Pass is part of the proposed Littleton Windfarm Project. This project is currently in pre-planning. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities with deep peat areas slower to colonise. Pumping continued at the site until 2022, when the pumping failed. Since then, measures have been carried out to manage water-levels.	2017	Finalised 2018 Rehab measures implemented 2018-2021 Updated 2026
Ballybeg, Lanespark and Derryvilla	474 ha	Cutaway Bog Industrial peat production since 1970s and finally ceased in 2017. Peat extraction ceased and cutaway habitats developed on a phased basis during this period. .	Ballybeg, Lanespark and Derryvilla initially were developed for sod turf production, and then formerly supplied peat to the Littleton briquette factory. Part of the site has been developed for conifer forestry and is leased to Coillte. Part of Lanespark/Derryvilla (Loch Doire Bhile) was developed as fishing lake and an amenity site in 1999-2002. This site is leased to Slieve Ardagh Rural Development. A greenway was constructed across the site as part of the Littleton Labyrinth Project in 2024, connecting the historical site of Derrynaflan to Loch Doire Bhile amenity, via Lanespark. Additional greenway is proposed to extend amenity through Derryvilla and Ballybeg as part of Failte Ireland. Midlands Trail project. This is currently in pre-planning. Ballybeg and Lanespark are proposed for the Coillte/BnM Midlands Native Woodland Project. 21 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service .	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025 Phase 2 PCAS measures ongoing 2026
Killeen	632 ha	Industrial peat production commenced at Killeen Bog in 1980s. Industrial peat extraction finally ceased in 2021.	Killeen bog formerly supplied peat to the Littleton briquette factory and the horticultural market. Re-wetting was carried out across the site in 2021.	2017	Finalised 2018 Phase 1 Rehab measures

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
			Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities with deep peat areas slower to colonise since the site was re-wetted. A greenway was constructed across the site as part of the Littleton Labyrinth Project in 2024, connecting the historical site of Derrynaflan to Loch Doire Bhile amenity, via Lanespark. Killeen is proposed for the Coillte/BnM Midlands Native Woodland Project. 31 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service .		implemented 2018-2021 Updated 2025 Phase 2 PCAS measures ongoing 2026
Littleton	1,020 ha	Cutaway Bog Littleton is a relatively old industrial peat production bog. Large-scale industrial peat production began in the 1940's where sod peat was produced for fuel. Sod peat production was mechanised during the 1950's. Milled peat production began in the 1970's and milled peat was supplied to the Briquette factory (constructed in 1981) at Lanespark. Peat extraction ceased and cutaway habitats developed on a phased basis since the 1890s and some well-established cutaway habitats have developed. Industrial peat extraction finally ceased in 2018. Littleton has a partially pumped drainage system.	Littleton Bog formerly supplied sod peat before supplying peat to the Littleton briquette factory. Older cutaway has already extensively colonised with pioneer cutaway, wetland and scrub habitats. Part of the site has been developed for conifer forestry and is leased to Coillte. A small area (10 ha) was used as a pilot biomass project and Eucalyptus was planted in 2018. Some pumps in Littleton Bog have been decommissioned and some have been retained but are non-functional.	2017	Finalised 2018 Rehab measures implemented 2018-2021 Updated 2026

See Drawing number *BNM-ECO-26-11B-24: Littleton Bog Group*, included in the accompanying Mapbook which illustrates the location of Killeen Bog and the Littleton Bog Group in context to the surrounding area.

APPENDIX II: ECOLOGICAL SURVEY REPORT

Ecological Survey Report

Note: This report outlines an ecological survey of the bog. This report should not be taken as a management plan for the site as other land-uses may still be considered. Information within this report may inform the development of other land-uses and identify areas with particular biodiversity value. The report outlines potential options for biodiversity management after industrial peat production has ceased, (if this is the proposed main land-use for the site).

Bog Name:	**Littleton**	**Area (ha):**	995 ha
Works Name:	Littleton	**County:**	Tipperary
Recorder(s):	MMC	**Survey Date(s):**	23-24/08/2012

Habitats present (in order of dominance)

The most common pioneer habitats present in the former production areas include:

- Bare peat (BP) (Codes refer BnM classification of pioneer habitats of production bog.
- Birch/Willow scrub (eBir/oBir/cBir)
- Pine-dominated scrub (ePine/oPine)
- Pioneer Soft Rush-dominated or Bog Cotton-dominated poor fen (pJeff/pEang)
- Open water (wetlands also contain emergent pioneer poor fen – pEang/pJeff/pRos)
- Pioneer dry heath (dHeath) (in mosaic frequently with pEang)
- Embryonic raised bog community (Bog Cotton-dominated vegetation with *Sphagnum* (EM –pEangS)
- Embryonic raised bog community (*Sphagnum*-rich vegetation with PB1 species)
- Pioneer Purple Moorgrass-dominated vegetation (gMol) (frequently in mosaic with dHeath and oBir along high fields and other areas),
- Bulrush-dominated Reedbeds (pTyph) (small infilled wetlands)
- Common Reed-dominated Reedbeds (pPhrag)
- Pioneer poor fen with Marsh Arrowgrass (pTrig)
- Pioneer acidic grassland (gAn-H-Eq) (in mosaic with scrub, gMol and pJeff on some of the drier mounds where gravel was exposed)
- Pioneer potential rich fen (pRos/pVir with some Black Bog-rush)
- Railway (Acc) (with some exposed gravel - ED2/ED3/DisTuss)

The most common habitats found around the margins of the former production bog and other sections include:

- Conifer plantation (WD4) (Codes refer to Heritage Council habitat classification, Fossitt 2000),
- Cutover Bog (PB4)
- Secondary cutover bog – now mosaic of dry heath, poor fen and scrub (HH1/HH3/PF2/WS1)
- Scrub (WS1)
- Raised bog (PB1) (minor remnants) with poor fen flushes (PF3)
- Birch woodland (WN7)
- Dense Bracken (HH3)
- Acid grassland (GS3)
- Improved grassland (GA1) (privately-managed land along margins)

Description of site

Littleton is located in north Co. Tipperary, 3km from Littleton village. It is part of the Littleton Bog group with Longford Pass Bog to the north and Ballybeg bog to the south. A BnM railway passes through the site and connects the northern BnM sites to the wider Littleton network. Littleton bog is found in a lowland landscape and is mostly surrounded by farmland and Coillte forestry. The bog has developed in a basin in the landscape and one noticeable feature of the site is that parts of the western margin are at a much higher level (10 m) compared to the central section along the railway and in the former milled peat production areas. The site comprises a relatively long and narrow bog (extending for 7 km along the railway). It is bordered to the north by a minor road (that separates Littleton from the adjacent Longford Pass BnM property). One feature of Littleton Bog is that much of it is relatively remote and inaccessible and the main access points are at the northern and southern ends where there are railway crossings. There is also a travel path along the railway, but this is over peat in places and in poor condition. This inaccessibility probably means that there is less unauthorised access to this bog compared to other BnM bogs in the Littleton group. As of 2017/2018, industrial peat production has ceased on all parts of the bog with onset closure of Littleton Briquette factory.

Some of the marginal remnant high bog at the southern end is being privately cut for sod peat. There is also some sod peat production along the eastern boundary. Some of this turbary overlaps with the BnM property line. There are several large private sod peat production areas adjacent to the bog. One of these areas at the south-west corner of the bog is expanding quite rapidly and beginning to use some of the remnant high bog within the BnM property line that was previously designated as a peat reserve prior to the cessation of industrial peat production at Littleton Bog.

Littleton is a relatively old industrial peat production bog. Large-scale industrial peat production began in the 1940's where sod peat was produced for fuel. Sod peat production was mechanised during the 1950's. Milled peat production began in the 1970's and milled peat was supplied to the Briquette factory (constructed in 1981) at Lanespark up until 2017/2018. Some of the former sod peat production areas in the bog were converted to milled peat production in the past. However, some of the former sod peat production areas along the western side were abandoned and have naturally re-colonised and since this time. The main central part of the bog was out of production prior to 2000. Much of the peat was cut out of this section and the underlying glacial subsoil was exposed in places and some wetlands had developed by this stage.

Northern area (former milled-peat production bog)

This sub-section is divided into two main parts by the BnM railway and central travel path. It extends to the west where it borders an area formerly classed as a peat reserve area with a deep trench drain marking the boundary. The majority of this northern sub-section was managed for milled peat production prior to the cessation of industrial peat production in 2017/2018. The north-east section has the deepest remnant peat and some of the peat is still relatively light and brown in colour. Several fields within this area were developing dry bog vegetation (Ling Heather) where there has not been any activity for several years. There is some recent drainage development with a new pipe being constructed at the northern end of the site to drain a localised basin towards a new pump at the outfall.

There is some recent wetland development in localised basins in small sections in the southern end. The south-west part of this sub-section has also come out of industrial peat production recently (prior to 2017/2018). Fields on both sides of the railway have also been out of production for some time. Those nearest to the railway and travel path tend to have somewhat deeper peat and the vegetation is dominated by dry heath with Heather and Birch scrub, with small amounts of Purple Moor-grass. Some of this has developed into closed Birch scrub and woodland. Other fields further out from the railway (and lower down) have been out of production for a shorter period and are also on thinner fen peat. The vegetation tends to be dominated by Soft Rush-dominated poor fen with patches of emerging or open Birch scrub. There are also some intermediate vegetation communities with mixed Heather and Purple Moor-grass as well as Soft Rush. The youngest fields out of production tend to have scattered patches of pioneer poor fen vegetation with Marsh Arrow-grass, Bog Cotton and/or Soft Rush dominating. Bog Cotton tends to dominate in the wetter sections, while Soft Rush tends to dominate where it is drier and where the peat is thinner and some sub-soil may be exposed.

The central railway has been constructed on the underlying glacial sub-soil. Marsh Hellebore was noted at several locations along the travel path adjacent to the railway. There has been some excavation along the railway towards the southern end associated with the re-alignment of the track. This produced a large spoil heap of sub-soil adjacent to the travel path. This spoil heap is now vegetating with several species of conservation interest including Blue Fleabane and Marsh Helleborine.

Central area (former production-related cutaway)

The majority of this sub-section has been out of industrial peat production for some time (prior to 2017/2018). It is bordered to the south by the BnM/Coillte conifer plantation and to the west by the railway. Much of the cutaway area is almost completely vegetated, apart from high fields and travel paths. Some of the younger cutaway areas to the east are still vegetating, as is the central mound around the old tea centre. Comparison of 2000 aerial photos to more recent aerial photo series shows that there have been significant changes in this sub-section in the past 12 years as there seemed to be much more bare peat visible in 2000. Only a small portion of the cutaway seemed to be vegetated at this stage.

The landscape of this sub-section is more typical of midlands cutaway and not like adjacent bogs such as Bawnmore. Much of the peat seems to have been cutaway so the remaining peat is fen peat and much of the habitat development is dominated by pioneer poor fen communities. There is less influence from acidic peat and less dry heath/Purple Moor-grass dominated communities. As peat has been cutaway, the underlying topography is also quite influential. There are many localised wetlands were there are basins and some of these are divided by mounds or ridges where there is drier habitat development with Birch scrub and some pioneer grassland communities. This area has also been further sub-divided by a series of deep trench drains and associated high fields. These divide the bog into regularly grouped series of fields. The high fields act as berms to enhance wetland development and hold water within these areas. The high fields tend to be vegetated with dry heath, Purple Moor-grass-dominated vegetation and scrub.

The wetland development is likely to have been enhanced by the pumped drainage in this area and the fact that some of the pumps have been turned off in the past. There are significant wetlands scattered across this area. The largest and deepest wetlands have open water and are fringed by Bog Cotton-dominated poor fen. Some smaller wetlands have infilled with poor fen vegetation usually dominated by Bog Cotton, but also containing Soft Rush. There are also several small wetlands that have infilled with Reedmace. There is some development of Bottle-Sedge-dominated vegetation associated with the wetlands towards the northern end, perhaps indicating some shell-marl influence (although no shell marl was noted on the site). The lower lying drier land is usually vegetated with Birch scrub and with Soft Rush-dominated pioneer poor fen. Gravel mounds also tend to have well-developed Birch scrub development, and this is associated with somewhat more grassy vegetation with Sweet Vernal-grass (gAn-HO-Eq) and Purple Moor-grass (gMol). Some of the younger cutaway towards the east and the south also has Marsh Arrow-grass present.

Comparison of aerial photo series (2000 and 2009) seems to indicate that there has been significant re-vegetation and development of scrub and wetlands within this period. This comparison also indicates that there has also been new wetland development (possibly attributed to pumps being turned off). There also seems to have been some new re-wetting and wetland development between 2009-2012 in the south-east section.

The central area (where railway branches) around the old tea centre is located on a low mound. This area is still re-vegetating and there is a significant amount of bare peat. The re-vegetation along the railway tracks tends to be dominated by Purple Moor-grass with some open Birch and dry heath mosaic where there has been no disturbance for a longer period of time.

There is a small area of cutaway located south-east of the conifer plantation. This area seems to have been developed for milled peat production but had much less production compared to the other central cutaway. However, there is much more dry heath development in this section, perhaps indicating that there is deeper remnant peat.

Dry Heath was developing in association with open Birch scrub and with Bog Cotton-dominated poor fen. There were also patches of purple Moor-grass vegetation. *Sphagnum* was also noted in this area, although not in any great quantity and the drains tends to have a poor fen influence, rather than a more acidic influence.

The north-east section is located adjacent to conifer plantation. This is having a significant impact on the re-vegetation of the cutaway, with much of the drier sections being colonised by Pine-dominated scrub. There is a similar topography/landscape and Pine-dominated areas and high fields are interspersed with wetlands. Some of the wetlands contain significant Reedbed development. The proportion of Pine decreased further away from the plantation, but was significant over a relatively large area. Some of the Pine scrub was burnt in the recent past but is regenerating (ca. 2006). A small part of the cutaway was developing potential rich fen vegetation where there was some wetland development close to the margin that was dominated by Yellow Sedge and Bottle Sedge. Black Bog-rush was also present. Other species present included Star Sedge and Flea Sedge and Large-leaved Sundew. However, there was no indication of any brown moss development. This area is located adjacent to a natural poor fen area, some of which is found in the marginal remnant bog. This section was dominated by Purple Moor-grass dominated vegetation and also contains patches of Bog Myrtle, as well as scattered Birch scrub. It has also been burnt in the recent past.

South-western area (former peat reserve area)

This sub-section includes all of the bog between the railway/conifer plantation and the south-west margin. A portion of this area along the railway was developed for milled peat production in the past. The majority of this area was re-vegetating with pioneer habitats and there seemed to be no production in this area in recent times. The habitat development is similar to the central cutaway area in that pioneer poor fen communities dominate. It also has a similar topography with dry mounds and wet basins appearing. A pump is located midway along this section. These communities are much younger in terms of development, and the majority of this area was in full production in 2004 (apart from mounds). The wet basins are vegetating with a range of poor fen communities including Bog Cotton, Marsh Arrowgrass and Soft Rush, depending on water depth. There is also some permanent open water and a significant proportion of bare peat with scattered pioneer vegetation. As of 2017/2018, industrial peat production has ceased on all parts of the bog with onset closure of Littleton Briquette factory.

The adjacent old sod peat sections are somewhat different in character. These are divided into long wide bays and are also drained by deep trench drains. There are also some high travel fields separating the bays. The bays to the east have been cut to some extent and are lower than bog to the west. Re-vegetation tends to be dominated by dry heath and Bog Cotton-dominated vegetation, in mosaic with scattered Birch scrub and small amounts of Purple Moorgrass-dominated vegetation. This section was abandoned in ca. 1970's and has been subject to approximately 40 years of regeneration. Overall, re-vegetation has been performing well with only the travel paths still having significant bare peat.

Bog Cotton-dominated vegetation dominates in the wetter areas while Heather dominates in drier sections. Some the drier Heather-dominated sections still have a proportion of bare peat between the Heather stands and the moss layer is poorly developed, being dominated by *Campylopus introflexus* and *Hypnum jutlandicum*. The peat is generally quite firm. The wettest vegetation also contains elements of high bog not usually found on typical cutaway such as Hare's-tail Bog Cotton, White-beak Sedge, Carnation Sedge, Bog Asphodel and Deer-grass. There is also some extensive *Sphagnum* development. This includes a mat of dense *S. cuspidatum* associated with the Bog Cotton where there is surface water and extensive hummocks of *S. subnitens*, *S. palustre*, S. *papillosum* and *S. capillifolium* where it is just water-logged . The areas of standing water with the *Sphagnum* mat and Bog Cotton had generally developed over firm peat (not quaking bog). Some of the *S. subnitens* hummocks are up to 40 cm high. Some of the wetter sections are dominated by White-beak Sedge, creating a pool/hollow type raised bog community. *Sphagnum* cover reaches 100% in small patches. Birch, Pine and Willow saplings and young trees are also present. Much of this vegetation has been classified as an embryonic raised bog vegetation type rather than pioneer poor fen. Other sections of similar vegetation have less scattered *Sphagnum* cover. There has been some recent drainage work (in past few years) to let off water from some of these areas. It is likely that the *Sphagnum* regeneration was greater in the past prior to this recent drainage work.

Further west, there is a wide sod peat bay that was cut to a much greater extent and is therefore much lower, and sandwiched between two higher bays. This section has re-wetted to create a large wetland. There is a significant area of open water along with emergent wetland vegetation. This wetland vegetation is dominated by Bog Cotton with a small amount of Bottle Sedge. There are also extensive patches of *S. cuspidatum* mat associated with the emergent Bog Cotton, and this vegetation has been classified as an embryonic bog vegetation community (similar to those found in Mayo). This mat of *Sphagnum*-dominated vegetation is similar to transnational mire communities found at some other intact peatland sites. Patches that are intermediate in elevation have greater Heather cover as well as scrub with Pine and Birch. This wetland had attracted a large flock of Mallard as well as some Teal.

The northern margin around this section is planted with conifer forestry. Pine and some Spruce are spreading from this plantation and into the scrub areas with Birch. These trees are growing in association with Heather-dominated vegetation.

There is a small high bog remnant (PB1) at the north-east corner of this section. This area of bog is in relatively good condition. It was wet in places with a high *Sphagnum* cover. Other sections were firm and dried out. Ecotope quality varies between sub-central and sub-marginal. Bog Rosemary and Cranberry were both present.

Mid-western area (former peat reserve area)

This sub-section is found about midway along the western margin of the bog. It includes the lobe of the bog found west of the railway and the central production related cutaway area. Two series of fields adjacent to the railway were converted to milled peat production but have since been abandoned. These fields were in industrial peat production in 2000. In the intervening period, peat production stopped and these fields have generally re-vegetated with Soft Rush-dominated poor fen and emergent Birch scrub. There is also some Bog Cotton-dominated poor fen.

Further west, there is a large old sod peat area that was abandoned and has now regenerated. The main feature is a wide bay where sod peat was cut with bagger machines that was largely cutaway and has re-wetted, sandwiched between two higher bays where there was less production. A large wetland has been created with a significant area of open water and emergent vegetation. There is also some development of embryonic raised bog vegetation with the development of *Sphagnum* mats associated with the Bog Cotton. There is some development of scrub and Birch woodland at both ends of this bay with occasional Spruce and Pine. The intermediate zones tend to have good *Sphagnum* hummock development with *S. palustre* and *S. subnitens*.

The high bog areas on the edge of the wetland area contain deep peat. Some of this high bog had been developed for milled peat production with field drains in the past but production had never started. The vegetation is dominated by Heather in the dry sections and is typical of pioneer dry heath communities on cutaway. However, there are wetter areas where water accumulates midway along the bay and these sections have more Hare's-tail Bog Cotton, as well as some *Sphagnum* cover. The *Sphagnum* development is less impressive compared to the south-west sod peat area. Some wet areas are also dominated by White-beak sedge. Overall, vegetation cover is about 90%, with a small amount of bare peat cover still present. There is not likely to have been significant peat production over these high bog areas however these areas have been disturbed or had vegetation cleared in the past. There are no indications of original *Sphagnum* hummocks present or old features such as pools.

Further west, there is some old remnant high bog that has been drained with field drains but has not been significantly disturbed with industrial peat production in the past.

A mineral ridge divides this mid-west sod peat production area (and peat reserve) from the north-west sod peat production area. This ridge extends to the edge of the bog and there is a small section within the BnM property on this high bog where acidic grassland (GS3) has developed. This grassland has developed on a thin layer of peat that is relatively dry. It contains Sweet Vernal-grass, Red Clover, Creeping Bent, Heath Bedstraw Bramble, Purple Moorgrass, Heather, Silverweed, Hawthorn, Yorkshire Fog, Tormentil, Heath Sorrel, Soft Rush, Devil's Bit and Wild Rose. This is an area of high ground with significant slopes and a fall towards the adjacent cutaway areas.

North-western area (former peat reserve area)

This sub-section includes the old sod peat production area along the north-west margin of the site. There are significant slopes and falls from high ground towards the western margin towards the lower cutaway close to the railway. The eastern margin is marked by a deep trench drain that separates this section from the adjacent former area previously managed for milled peat production (ceased 2017/2018).

There is another wetland found on the higher slopes along the western margin. Again, this was created by old sod peat production with baggers. The wetland is similar in nature to the previous two sod peat wetlands and contains a large open water area with emergent vegetation. One feature of note is that the water level within the wetland is at a significant elevation above the adjacent cutaway areas. The surrounding high bog is dominated by dry heath and Bog Cotton-dominated vegetation. There seems to have been some milled peat bog development on the lower slopes of this section, with fields and bare peat present in the aerial photos in 2000. However, this area is now re-vegetating with pioneer dry heath and Bog Cotton (poor fen). *Sphagnum* is much rarer in this section compared to the other old sod peat production areas. There is some Birch scrub, but this is relatively light and there is a wide expanse of Heather-dominated vegetation.

Pine and Birch have colonised the bog towards the northern end of this section. These trees are found in association with Heather-dominated dry heath. Some wetter communities have developed down the slope and adjacent to the deep trench drain. Bog Cotton-dominated vegetation has developed in one section and further north there is some Reed Bed development.

Designated areas on site (cSAC, NHA, pNHA, SPA other)

None in the immediate vicinity of Littleton bog.

Adjacent habitats and land-use

Adjacent habitats include conifer plantation (WD4), wet grassland (GS4), improved agricultural grassland (GA1), scrub (WS1), Birch woodland (WD7) and cutover bog (PB4).

Watercourses (major water features on/off site)

- Littleton is located within the Suir catchment.
- There are several main sub-catchments within the bog. These drain off the bog at various locations, with the majority of the bog draining to the west. There are several channelized streams/drains that drain the bog towards the Clover River, which drains towards the Dinish River. Some of the southern section drains south towards the Black River, which also drains towards the Dinsh River.
- The majority of the northern area (formerly managed for industrial peat production) is the only section where the catchment runoff is treated by silt-ponds. Part of this production area is not treated at all. Silt-ponds are required in some other sections of the bog. Much of the catchment runoff from the cutaway areas is treated by outfalls.

Peat type and sub-soils

Much of the peat exposed in the cutaway is fen peat. The conifer plantation was planted on a range of *Phragmites* peat and *Sphagnum* peat. The northern area (formerly managed for industrial peat production) is somewhat younger and exposed comprising light brown peat. The old sod peat areas along the western side have much deeper remnant acidic peat.

The bog is generally underlain by a mixed glacial till. This is exposed around the site at various locations. There are no indications of any significant shell-marl deposits exposed around the site.

Fauna biodiversity

Birds

Several bird species were noted on the site during the survey.

- Hen Harrier. This bird was noted roosting in the centre of the site.
- Kestrel. Kestrel was noted hunting over the site several times during both days of the survey.
- The large wetlands associated with the old sod peat cutting areas attracted some wildfowl. A small flock of Teal (6) were noted roosting on the south-west wetland in the old sod peat cutting areas. A larger flock of Mallard (60) were also noted at this location. The northern wetland also had Teal (9) and Mallard (1).
- The smaller wetlands towards the centre of the site had relatively few wildfowl, apart from 1 pair of Mallard.
- Other species noted on the site included Snipe, Heron, Magpie, Pheasant, Rook (2) Raven, Swallow (30) northern section), Grey Crow, Wren, Blackbird, Blue Tit, Goldcrest, Wood Pigeon, Meadow Pipit and Reed Bunting.
- This site was also surveyed by Copland (2011). Breeding Lapwing and Common Sandpiper were noted using the more exposed sections of cutaway to the east of the site. Curlew was recorded on the bog to the west and was suspected of breeding.

Mammals

Signs of several mammal species were noted on the site during the survey.

- Rabbit – at several places along the central line
- Signs of Fox were noted around the site.
- Signs of Badger were noted around the site.
- Several Hares were noted on the site.

Other species

- Butterfly species noted on the site included Meadow Brown, Ringlet and Small Tortoise-shell

References

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European Commission (2013). Interpretation manual of European Union Habitats. European Commission DG Environment Nature ENV B.3.

Fossitt, J. (2000). A guide to habitats in Ireland. Kilkenny. The Heritage Council.

NRA (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes (Revision 2). National Roads Authority.

APPENDIX III: ENVIRONMENTAL CONTROL MEASURES TO BE APPLIED TO BOG REHABILITATION

- Bog restoration/rehabilitation measures will be restricted to within the footprint of the proposed rehabilitation area.
- The proposed rehabilitation will have due regard to noise limits and hours of operation (i.e. dusk and dawn) to minimise any potential disturbance on resident and local fauna that utilise the site and immediate environs.
- All plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations (SI 359/1996).
- The proposed activities will be restricted to daylight hours and there will be no requirement for artificial lighting.
- Silt ponds will be inspected and maintained as per the IPC Licence.
- During periods of heavy precipitation and run-off, activities will be halted.
- Measures will be carried out using a suitably sized machine and in all circumstances, excavation depths and volumes will be minimised where possible.
- All machines will be regularly checked and maintained prior to arrival at the site to prevent hydrocarbon leakage.
- Hoses and valves will be checked regularly for signs of wear and will be closed and securely locked when not in use.
- Fuelling and lubrication of equipment shall only be carried out in designated areas away from surface water drainage features and ecologically sensitive areas.
- Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or re-cycling.
- Vehicles will never be left unattended during refuelling.
- No direct discharges to waters will be made. No washings from vehicles, plant or equipment will be carried out on site.
- All plant refuelling will take place using mobile fuel bowsers. Only dedicated trained and competent personnel will carry out refuelling operations.
- Mobile storage such as fuel bowsers will be bunded to 110% capacity to prevent spills. Tanks for bowsers and generators shall be double skinned. When not in use, all valves and fuel trigger guns from fuel storage containers will be locked. All pumps using fuel or containing oil will be locally and securely bunded where there is the possibility of discharge to waters.
- Potential impacts caused by spillages etc. during rehabilitation will be reduced by keeping spill kits and other appropriate equipment on-site.
- Site activities will be carried out in accordance with 'best practice'. In order to ensure compliance and implementation of 'best practice', these measures will be communicated to relevant BnM staff and updated as required.

APPENDIX IV: BIOSECURITY

The potential for importation or introduction of non-native plant species (such as Japanese Knotweed, Himalayan Balsam, etc.) during future rehabilitation management, such as drain-blocking using excavators, has the potential to result in the establishment of invasive species within the site. Section 49 of the European Communities (Birds and Natural Habitats) Regulations 2011 prohibits the introduction and dispersal of invasive alien species (particularly plant species) listed on Part 1 (third column) of the 'Third Schedule'.

This section aims to reduce the risk from, and impacts of, invasive species and protecting biodiversity on lands under BnM ownership. Rehabilitation and decommissioning in the bog will have due regard to the relevant biosecurity measures outlined below:

- Records of problematic invasive species within the various bog units will be marked out with signs to highlight areas of infestation to personnel.
- All plant machinery will be restricted from disturbing known colonies of invasive species.
- All plant machinery will avoid unnecessary crossings to adjoining lands.
- Good site hygiene will be employed to prevent the introduction and spread of problematic invasive alien plant species (i.e. Japanese Knotweed (*Fallopia japonica*), Himalayan Balsam (*Impatiens glandulifera*), Himalayan Knotweed (*Persicaria wallichii*), etc.) by thoroughly washing vehicles prior to entering the area.

The biosecurity measures outlined above are in line with best practice guidelines issued by the National Roads Authority (NRA, 2010) – The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads and broadly based on the Environment Agency's (2013) – The Knotweed Code of Practice: Managing Japanese Knotweed on Development Sites (Version 3, amended in 2013).

In addition to the above, Best Practice measures around the prevention and spread of Crayfish plague[6] will be adhered with throughout all rehabilitation measures and activities.

[6] https://www.biodiversityireland.ie/projects/invasive-species/crayfish-plague/

APPENDIX V: POLICY AND REGULATORY FRAMEWORK

BnM Plc is a publicly owned company, originally established in 1934 to develop some of Ireland's extensive peat resources for the purposes of economic development and to support energy security. In the decades since its establishment the company has employed tens of thousands of people in its fuel, energy, and horticultural growing media businesses. For much of its history the company's support of important national policy aims has been enabled and encouraged in a variety of ways by Government.

Today, BnM is undertaking a number of highly significant actions in support of climate policy. These actions involve a radical transformation and decarbonisation of nearly the entire BnM business. This transformation will be driven by unlocking the full potential of our land and creating significant value for Ireland and the Midlands in particular.

BnM is an integral part of the economic, social, and environmental fabric of Ireland and Irish life. As a key employer in the Midlands, the company is conscious that its obligations go beyond purely commercial and environmental – there is also a social responsibility to employees and the communities served by BnM. It is the company's role and absolute priority to ensure that its long-term strategy delivers on all of these important areas in a robust and balanced way.

There are a wide range of policies, plans, legislation and land designations that inform the development of this BnM peatland rehabilitation plan. BnM have also developed and operate various policies and strategies that also inform the development of this rehabilitation plan.

1 EPA IPC Licence

BnM operates under IPC Licence issued and administered by the EPA to extract peat within the Littleton Bog group (Ref. P0-499-01). As part of Condition 10.2 of this licence, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area. The bog is part of the Littleton Bog group. This regulatory requirement is the main driver of the development of this rehabilitation plan.

2 The Peatlands Climate Action Scheme (PCAS)

BnM (BnM) understand that it is the Minister's (DECC) intention to impose an obligation on BnM to develop a programme of measures, 'the Scheme', for the enhanced decommissioning, rehabilitation and restoration of boglands previously used to supply peat for electricity generation within the State. The enhanced decommissioning, rehabilitation and restoration of the peatlands funded by the Scheme (PCAS) will deliver benefits across climate action (GHG mitigation through reduced carbon emissions and acceleration towards carbon sequestration), enrich the State's natural capital, increase eco-system services, strengthen biodiversity, improve water quality and storage attenuation as well as developing the amenity potential of the peatlands.

BnM is carrying out an enhanced decommissioning, rehabilitation and restoration, under the Scheme (PCAS), and supported by the Climate Action Fund and Ireland's National Recovery and Resilience Plan across a footprint of 24,500 ha between 2021-2026. This scheme will significantly go beyond what is required to meet rehabilitation and decommissioning obligations under existing EPA IPC licence conditions. Interventions and measures supported by the Scheme will ensure that environmental stabilisation is achieved (meaning IPC obligations are met), and importantly, significant additional benefits, particularly relating to climate action and other ecosystem services, will also be delivered. However, only the additional costs associated with the additional and enhanced

rehabilitation, i.e., those activities which go beyond the existing decommissioning and rehabilitation requirements arising from Condition 10 will be eligible for support under the Scheme.

3 National Climate Policy

The National Policy Position establishes the fundamental national objective of achieving a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050. It sets out:

- the context for the objective;
- clarifies the level of GHG mitigation ambition envisaged; and
- establishes the process to pursue and achieve the overall objective.

The evolution of climate policy in Ireland will be an iterative process based on the adoption by government of a series of national plans over the period to 2050. GHG mitigation and adaptation to the impacts of climate change are to be addressed in parallel national plans – respectively through the National Climate Action Plan. The plans will be continually updated, as well as being reviewed on a structured basis at appropriate intervals and, at a minimum, every five years. This will include early identification and ongoing updating of possible transition pathways to 2050 to inform sectoral strategic choices.

BnM is following a decarbonisation programme aimed at reducing the carbon emissions from its activities. Industrial peat production has now ceased, and several other decarbonisation measures are being implemented. The company aims to further develop renewable energy and resource recovery markets with a key objective of reducing the carbon intensity of all products. In addition, the carbon emission mitigation benefits associated with the post-peat extraction rehabilitated peatland following re-wetting, revegetation and colonisation of significant areas with native woodland will make a significant contribution to achieving the State's carbon emission reduction targets.

4 National Peatlands Strategy

The National Peatlands Strategy (2015) contains a comprehensive list of actions, necessary to ensure that Ireland's peatlands are preserved, nurtured and become living assets within the communities that live beside them. It sets out a cross-governmental approach to managing issues that relate to peatlands, including compliance with EU environmental law, climate change, forestry, flood control, energy, nature conservation, planning, and agriculture. The Strategy has been developed in partnership between relevant Government Departments/State bodies and key stakeholders through the Peatlands Council.

The strategy recognises that Ireland's peatlands will continue to contribute to a wide variety of human needs and to be put to many uses. It aims to ensure that Ireland's peatlands are sustainably managed so that their benefits can be enjoyed responsibly. It aims to inform appropriate regulatory systems to facilitate good decision making in support of responsible use. It also aims to inform the provision of appropriate incentives, financial supports and disincentives where required. The strategy attempts to strike an appropriate balance between different needs, including local stakeholders like turf-cutters and semi-state bodies such as BnM.

In line with a National Peatlands Strategy recommendation, a Peatlands Strategy Implementation Group (PSIG), was established, assisted in the finalisation of the Strategy, is overseeing subsequent implementation and will report to Government on an annual basis on the implementation of the actions and principles contained within the Strategy.

BnM is a key stakeholder in the National Peatlands Strategy and the Peatlands Strategy Implementation Group. The strategy recognises the potential for some BnM sites to be restored and to contribute to the national SAC and NHA network of protected raised bog sites. The strategy (agreed in 2015) also recognises the various different values of cutaway bog and developed six key principles (with BnM) for the after-use of cutaway bog.

- BnM will continue to assess and evaluate the potential of the company's land bank, using a land use review system. The assessment will help prepare a set of evidence-based management plans for the various areas of peatland. These plans will also inform its cutaway bog rehabilitation.
- The policy of BnM is not to open up any undrained new bogs for peat production.
- Lands identified by BnM as having high biodiversity value and/or priority habitats will be reserved for these purposes as the principal future land use.
- Generally, BnM cutaway bogs that flood naturally will be permitted to flood unless there is a clear environmental and/or economic case to maintain pumped drainage.
- In deciding on the most appropriate afteruse of cutaway peatlands, consideration shall be given to encouraging, where possible, the return to a natural functioning peatland ecosystem.
- This will require re-wetting of the cutaway peatlands which may lead in time to the restoration of the peatland ecosystem.
- Environmentally, socially and economically viable options should be analysed to plan the future use of industrial cutaway peatlands, in conjunction with limiting factors as outlined in BnM's Strategic Framework for the Future Use of Peatlands.

The National Peatlands Strategy highlights the importance and value of developing peatland rehabilitation plans for BnM cutaway sites and implementing this peatland rehabilitation. Some of these principles have now been superseded by the company's decision to cease industrial peat extraction. The National Peatlands Strategy is currently being reviewed by Government.

5 National River Basin Management Plan 2022-2027 (Water Framework Directive)

The River Basin Management Plan for Ireland 2022-2027 (Department of Housing, Local Government and Heritage, 2022) is the key national plan for Ireland to achieve the objectives of the Water Framework Directive (WFD). In broad terms, the objectives of the WFD are (1) to prevent the deterioration of water bodies and to protect, enhance and restore them with the aim of achieving at least good status and (2) to achieve compliance with the requirements for designated protected areas.

The NRBMP 2022-2027 outlined how peat extraction can be a potentially significant pressure on various water quality parameters. Peatland rehabilitation of BnM cutaway (in addition to other measures) was part of the WFD (2022-2027) programme of measures. The NRBMP 2022-2027 takes account of the fact that BnM was in the process of phasing out the extraction of peat for energy production, that it set a target to rehabilitate 9,000 ha of cutaway bogs (covering 25 peatlands) by 2021 (in 2018) and will look to implement best-available mitigation measures to further reduce water quality impacts caused by peat extraction while the phasing-out process is taking place. This NRBMP 2022-2027 rehabilitation target was superseded by the acceleration of the BnM de-carbonisation programme and the Scheme (PCAS).

The development of site rehabilitation plans and the delivery of peatland rehabilitation by BnM was expected to have a positive impact on water quality and will help the NRBMP 2022-2027 deliver its objectives in relation to the Water Framework Directive and is one of the five key principal actions.

The NRBMP 2022-2027 describes how the number of waterbodies impacted by peat, industry and forestry have decreased by 10, 10 and 5 waterbodies, respectively since the second cycle. Impacts on water quality and river habitat arising from peat and peat extraction and associated drainage include the release of ammonium and fine-grained suspended sediments, and physical alteration of aquatic habitats. Drainage of peatlands also results in changes to the hydromorphological condition of rivers.

The NRBMP 2022-2027 outlines how maintaining and restoring Irish bogs will lead to a decrease in waterborne carbon leaching to levels comparable with intact bogs as well as reducing losses of peat silt and ammonia. Vegetation on the surface of the peat can also slow the flow of water over the land surface. Based on the EPA's most recent reports, peat extraction and drainage is impacting on 106 water bodies across the country, with peat the single pressure on 28 of these water bodies. However, compared to the data in the second-cycle plan, the number of water bodies impacted by peat has decreased.

The cessation of industrial peat extraction by BnM in 2021 was expected to have a significant positive impact on water quality of receiving water courses by reducing the impact of peat extraction as a key pressure on particular water courses. This is now being supported by the results and conclusions of the draft NRBMP 2022-2027.

6 4th National Biodiversity Action Plan 2023-2030

Ireland's 4th National Biodiversity Action Plan (NBAP) sets the national biodiversity agenda for the period 2023-2030 and aims to deliver the transformative changes required to the ways in which we value and protect nature. The 4th NBAP has been developed with the support, advice and input of the interdepartmental Biodiversity Working Group and the independent Biodiversity Forum. Ireland's 2nd National Biodiversity Conference was held to gather insights and recommendations for the development of the NBAP and a public consultation process was held to provide further opportunities to engage with the Plan.

The 4th NBAP strives for a "whole of government, whole of society" approach to the governance and conservation of biodiversity. The aim is to ensure that every citizen, community, business, local authority, semi-state and state agency has an awareness of biodiversity and its importance, and of the implications of its loss, while also understanding how they can act to address the biodiversity emergency as part of a renewed national effort to "act for nature".

The delivery of rehabilitation via PCAS is expected to significantly contribute in the future to actions and targets of the 4th National Biodiversity Action Plan 2023-2030, particularly in relation to peatland restoration, nature restoration and creation of new habitats such as wetlands and woodlands.

7 EU Nature Restoration Law

The EU Nature Restoration Law is a key element of the EU Biodiversity Strategy, which sets binding targets to restore degraded ecosystems, in particular those with the most potential to capture and store carbon and to prevent and reduce the impact of natural disasters. The regulation combines an overarching restoration objective for the long-term recovery of nature in the EU's land and sea areas with binding restoration targets for specific habitats and species. These measures should cover at least 20% of the EU's land and sea areas by 2030, and ultimately all ecosystems in need of restoration by 2050.

This regulation has now been adapted and it is expected that all Member States will be required to produce a National Restoration Plan within two years of adoption. This will be led by the National Parks and Wildlife Service

and will comprise a broad and deep public participation process, informed by robust ecological and socio-economic impact assessments. BnM are working with NPWS and DAFM to identify bog restoration and other re-wetted cutaway sites that can contribute towards Irelands targets for the Nature Restoration Law.

8 National conservation designations

BnM operates in a wider landscape that also includes a network of European and National nature conservation sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs), National Heritage Areas (NHAs, pNHAs) and National Nature Reserves). BnM will take account of this network of conservation objectives and their conservation objectives when developing these rehabilitation plans. It is expected that peatland rehabilitation will, in general, benefit the conservation objectives of this network of nature conservation sites.

9 National Raised Bog Special Area of Conservation Management Plan 2017-2022.

The National Raised Bog Special Area of Conservation Management Plan 2017-2022 sets out a roadmap for the long-term management, restoration and conservation of protected raised bogs in Ireland. The Plan strikes an appropriate balance between the need to conserve and restore Ireland's raised bog network as part of Ireland's commitments towards the EU Habitats Directive, and the needs of stakeholders and gives recognition to the important role that communities have to play in the conservation and restoration of raised bogs. The National Raised Bog Special Areas of Conservation (SACs) Management Plan 2017-2022 is part of the measures being implemented in response to the on-going infringement action against Ireland in relation to the implementation of the EU Habitats Directive, with regard to the regulation of turf cutting on the Special Areas of Conservation (SACs). The then Minister for Arts, Heritage and the Gaeltacht, also published a **Review of Raised Bog Natural Heritage Area Network** in 2014.

BnM has also responded to the needs of the National Raised Bog Special Area of Conservation Management Plan (NRBMP) and provided several sites to the government for the relocation of turf-cutters from SACs. This is part of a suite of ongoing bog conservation measures in the NRBMP to manage turf-cutting in protected sites. BnM and the National Parks and Wildlife Service continues to engage regarding the ongoing relocation of turf-cutters from protected raised bog sites.

10 All-Ireland Pollinator Plan 2021-2025

The All-Ireland Pollinator Plan 2026-2031 outlines key objectives and actions to protect and support pollinating insects and the habitats they rely on. A BnM specific action in this plan includes the adoption of pollinator-friendly management within the BnM network of sites. One action to help achieve this objective is habitat rehabilitation and restoration, where possible, of pollinator-friendly habitats, including peatland habitats.

11 Land-use planning policies

As BnM operates in many counties across Ireland, it is important to note the respective development plans in these counties. Many of the existing development plans recognise the potential that exists in the after-use of cutover/cutaway peatlands. BnM seeks to work with all of the relevant local authorities to ensure that the most appropriate after-uses are reflected in local planning policy. The following areas of consistent importance are of

both direct and indirect relevance to BnM: heritage, tourism, biodiversity/conservation, landscape, renewable energy, and economy/enterprise.

12 National Archaeology Code of Practice

BnM operated under an agreed Code of Practice (COP) regarding archaeology with the Department of Arts, Heritage and the Gaeltacht and the National Museum of Ireland which provided a framework to enable the Company to progress peat extraction whilst carrying out archaeological mitigation. (https://www.archaeology.ie/sites/default/files/media/publications/cop-bord-na-mona-en.pdf)

Under the Code, BnM, the Minister and Director worked together to ensure that appropriate archaeological survey and mitigation was carried out in advance of peat extraction.

As peat extraction ceased in 2018, the remaining elements of the COP that are still applicable include:

- BnM must ensure that any newly discovered monuments on BnM lands are reported in a timely manner to the National Monuments Service of the Department of Arts, Heritage and the Gaeltacht.
- BnM must ensure that any archaeological objects discovered on BnM lands are reported immediately to the Duty Officer of the National Museum of Ireland.
- BnM will adhere to the Archaeology Code of Practice relating to management of any archaeological finds that may arise during cutaway peatland rehabilitation and decommissioning.

13 Bord na Móna Biodiversity Action Plan 2016-2021

Rehabilitation of industrial peatlands is a key objective of the Bord na Móna Biodiversity Action Plan 2016-2021. This action plan outlines the main objectives and actions around biodiversity on BnM lands. The Bord na Móna Biodiversity Action Plan also outlines key International and European policy in relation to biodiversity. This includes the **United Nations Convention on Biodiversity 2011-2020 (CBD)** and **European Biodiversity Strategy to 2020**. Further details of these policies and BnM s responses can be found in the Bord na Móna Biodiversity Action Plan (Bord na Móna , 2016). Both policy documents highlight targets such as reducing pressure on biodiversity, promoting sustainability, habitat restoration and benefits of ecosystem services.

One example of a key CBD target is:

- *“Restore at least 15% of degraded areas through conservation and restoration activities.”*

The EUs headline target for progress by 2020 is to:

- *“halt the loss of biodiversity and the degradation of ecosystems in the EU by 2020, restore them as far as feasible, while stepping up the EU contribution to averting global biodiversity loss.”*

This rehabilitation plan is aligned to the CBD target and the EU Biodiversity Strategy target and will help Ireland meet its commitment to these international Biodiversity polices.

14 BnM commitments

BnM made the commitment in 2009 not to develop any new peatland sites for industrial peat production. The company has continued to work with different stakeholders.

In line with BnM's accelerated decarbonisation programme, the company made a further commitment to a significantly larger rehabilitation target. This was reflected in our plans to rehabilitate a further 20,000 hectares of cutaway and cutover bog to wetland and woodland mosaics by 2025. In addition, we planned to restore a further 1,000 hectares of raised bog habitat by 2025. These initial targets have been achieved.

The company announced the cessation of industrial peat production in 2021 and that it would rehabilitate a target of 33,000 ha between 2021-2026 . Rehabilitation measures will continue to be carried out with the focus on re-wetting and rehabilitation of cutover and cutaway areas in line with national policies (such as the National Peatland Strategy, the National Biodiversity Action Plan, The Nature Restoration Law, the Climate Action Plan, the Water Framework Directive, etc.) and rehabilitation guidelines set down by the Environmental Protection Agency. BnM has now transitioned to a Climate Solutions company with a key commercial and development focus being the delivery of renewable energy to support Ireland's Climate Action Plan. In general, BnM will seek to balance and optimise commercial, social, and environmental value of its bogs, and develop integrated land-uses, while taking account of the need for sustainability and their biodiversity value.

These commitments outline the importance of peatland rehabilitation to BnM. The company will continue to demonstrate environmental responsibility and continue to deliver on these commitments in relation to peatland rehabilitation and in relation to the future management of these lands to maximise their benefits, particularly their ecosystem service benefits, along with the sustainable development of a portion of the land bank for other uses, such as renewable energy.

APPENDIX VI: DECOMMISSIONING

1. Condition 10 Decommissioning

Under condition 10.1, BnM must decommission relevant infrastructure and other materials that supported peat extraction, that may result in environmental pollution.

10.1.1 Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

To date across all of BnM's peatlands that have been rehabilitated, this has entailed removal of rail infrastructure, plant, equipment, materials, and waste.

In relation to this bog, this was primarily rail to be lifted and any associated polybrane materials, production plant and equipment, any waste materials including stockpile covering, stored at production centers.

During the decommissioning of this bog, these materials were either brought to a central roadside location to be removal via a licensed waste provider or brought centrally to the nearest main works site, either Littleton or Templetuohy for removal as waste, to be either recycled or deposited to landfill.

Records, EWC codes, waste treatment operations, weights, descriptions and final destinations of these wastes are reported each year in the Annual Environmental Report (AER) and the Environmental Performance Report (EPR) and are available at the EPA's Licensing & Enforcement Access Portal (LEAP).

Rail lifting is ongoing in Littleton Bog in 2026 and is expected to be completed this year, as is the removal of some residual pumping infrastructure.

In relation to this bog, the list and tasks would be as follows:

Item	Description	Littleton Decommissioning Plan
1	Clean-up of remaining or unconsolidated waste or materials located in Bogs, Yards, Buildings and Offices	Clean-up of Bog
2	Cleaning Silt Ponds	Cleaning Silt Ponds
3	Decommissioning Peat Stockpiles	Peat Stockpile Management
4	Decommissioning or Removal of Buildings and Compounds	Decommissioning or Removal of Buildings and Compounds
5	Decommissioning Fuel Tanks and associated facilities	Where relevant
6	Decommissioning and Removal of Bog Pump Sites	Where relevant
7	Decommissioning or Removal of Septic Tanks	Where relevant

In addition, condition 7 of the licence requires these now defined waste items to be disposed of or recovered as follows:

7.1 Disposal or recovery of waste shall take place only as specified in *Schedule 2(i) Hazardous Wastes for Disposal/Recovery* and *Schedule 2(ii) Other Wastes for Disposal/Recovery* of this licence and in accordance with the appropriate National and European legislation and protocols. No other waste shall be disposed of/recovered either on-site or off-site without prior notice to, and prior written agreement of, the Agency.

7.2 Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as agreed by the Agency, and only transported from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the environment.

7.3 A full record, which shall be open to inspection by authorized persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall as a minimum contain details of the following:

7.3.1 The names of the agent and transporter of the waste.

7.3.2 The name of the persons responsible for the ultimate disposal/recovery of the

waste.

7.3.3 The ultimate destination of the waste.

7.3.4 Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site.

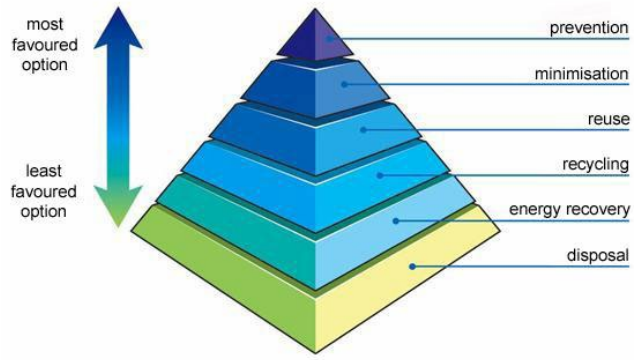
7.3.5 The tonnages and EWC Code for the waste materials listed in *Schedule 2(i) Hazardous Wastes for Disposal/Recovery* and *Schedule 2(ii) Other Wastes for Disposal/Recovery* sent off-site for disposal/recovery.

7.3.6 Details of any rejected consignments.

A copy of this Waste Management record shall be submitted to the Agency as part of the AER for the site.

As required by the licence, these waste items will be removed for recycling or disposal, using external contractors with the required waste collection permits, approved under 7.2, with waste records maintained as required under 7.3.

Where possible, BnM will utilize the appropriate waste hierarchy to identify waste that can reused or recycled ahead of disposal.



The validation of the success of condition 10.1 is carried out through an Independent Closure Audit (ICA), followed by and EPA Exit Audit (EA) and the eventual partial or full surrender of the licence.

2. Enhanced Decommissioning.

The remaining infrastructure does not constitute a risk to the environment and would not be a requirement of condition 10 of the licence. The removal of these are deemed as enhanced measures. These may enhance the future after use of the bog for amenity value, security against access for illegal and unsocial activities and general State and community benefit. In relation to this bog, this would include the infrastructure defined below:

Item	Enhanced Decommissioning Type	Littleton Decommissioning Plan
1	Removal of Railway Lines	Removal of Railway Lines
2	Decommissioning Bridges and Underpasses	Where Applicable
3	Decommissioning Railway Level Crossing	Where Applicable
4	Restricting Access (bogs and silt ponds)	Restricting Access to Bog
5	Removal of High Voltage Power Lines	Where Applicable

APPENDIX VII: GLOSSARY

Cutaway Bog: A BnM site generally becomes cutaway when it is economically unviable to continue industrial peat extraction or when the majority of peat has been removed.

Deep peat cutover bog. Deep peat cutover bog is defined as former raised bogs that have been in industrial peat production, where production has ceased but the residual peat depth is typically in excess of 2m. *Sphagnum* mosses are key species of raised bogs and the majority of the peat mass is formed from these mosses. *Sphagnum* species and other raised bog species are a key part of raised bog habitat function and prefer more acidic, nutrient poor, water-logged conditions. Typical raised bog *Sphagnum* mosses and other bog species do not thrive with the more typical alkaline water chemistry of cutaway bog but do grow well in these more acidic conditions where peat has been re-wetted. There is potential to re-develop *Sphagnum*-rich plant communities in these conditions if the peat can be re-wetted. This brings the opportunity of re-developing *Sphagnum*-rich vegetation communities that are considered Carbon sinks or peat-forming habitats and restoring the carbon sequestration function of these sites.

Dry cutaway bog: Cutaway bog is categorised as dry cutaway where it is not practical or feasible to re-wet these areas completely. It is inevitable that some areas of cutaway will remain relatively dry due to the heterogenous topography of the cutaway, as well as requirements for continued drainage on site for identified after-uses, or off site in relation to neighbouring lands or other infrastructure. Ridges and mounds of glacial deposits can become exposed during peat extraction and form a heterogenous topographical mosaic separated by basins. Dry cutaway may have very thin or no residual peat where ridges and mounds have been exposed. The exposed sub-soils are a mix of glacial gravels, muds and tills that can be quite free-draining. Dry cutaway may also have deeper residual peat, but in a location (i.e. at the margin) where the peat cannot be re-wetted due to boundary constraints. Dry cutaway may also develop in situations where there a relatively steep slope that inhibits re-wetting. The majority of dry cutaway will develop towards grassland, heath, scrub and dry woodland habitats.

Enhanced decommissioning: This is defined as decommissioning carried out under the Scheme, which is proposed to be externally funded.

Enhanced rehabilitation: This is defined as rehabilitation carried out under Scheme, which is proposed to be externally funded. It is proposed by Government that BnM be obligated to carry out enhanced decommissioning, rehabilitation and restoration on peatlands. This Scheme will significantly go beyond what is required to meet rehabilitation and decommissioning obligations under existing EPA IPC licence conditions. Interventions and activities supported by the Scheme will ensure that environmental stabilisation is achieved (meaning IPC obligations are met), and importantly, significant additional benefits, particularly relating to climate action and other ecosystem services, will also be delivered. However, only the costs associated with the additional, enhanced and accelerated measures, i.e., those interventions which go beyond the existing decommissioning and rehabilitation requirements arising from Condition 10 will be eligible for support under the Scheme.

Environmental stabilisation: The key objective of peatland rehabilitation is environmental stabilisation. This means developing habitats and vegetation back onto the bare peat, slowing water movement across the bog, minimising effects to downstream waterbodies and meeting the conditions of the IPC Licence. This is achieved by a combination of re-wetting, where possible, and natural colonisation of the former cutaway, with or without intervention**.** Habitats will develop that reflect the underlying environmental conditions. Other after-use development may also serve to act as environmental stabilisation.

Marginal land. Marginal land is defined as land around the margin of the industrial peat production area. This margin generally contains a range of habitats including scrub, birch woodland, cutover bog and raised bog remnants. It has a variety of land-uses including turf-cutting (private turbary). The Scheme will consider potential rehabilitation and restoration actions (e.g. drain blocking) within marginal land zones, where appropriate.

Rehabilitation: Rehabilitation is defined in general by BnM as environmental stabilisation of the former cutaway. This is generally achieved via re-wetting, where possible, and natural colonisation of the former cutaway, with or without intervention. It is not possible to restore raised bog habitats on BnM cutaway in general in the short-term. In general, most of the peat mass has been removed from many BnM cutaway sites and the environmental characteristics of these areas have therefore changed radically (peat depths, hydrology, water chemistry, substrate type, nutrient status. This means there will therefore be different habitat outcomes (wetlands, fen, heathland, grassland and Birch woodland). Other after-use development may also serve to act as rehabilitation.

Restoration: Ecological restoration is defined as the process of re-establishing to the extent possible the structure, function and integrity of indigenous ecosystems and the sustaining habitats they provide" (SER, 2004). Defined in this way, restoration encompasses the repair of ecosystems (Whisenant, 1999) and the **improvement of ecological conditions in damaged wildlands** through the **reinstatement of ecological processes**. In general, BnM cutaway peatlands cannot be restored back to raised bog in a reasonable timeframe as their environmental conditions has changed so radically (with the removal of the acrotelm – the living layer and much of the peat mass). However, they can be returned to a **trajectory** towards a naturally functioning peatland system (Renou-Wilson, 2012). **Raised bog restoration** is an objective of some BnM sites where there is residual natural raised bog vegetation and where the majority of the peat is still intact.

Standard rehabilitation: This is defined as rehabilitation that is designed to meet the conditions of the EPA IPC Licence. The key objective of rehabilitation is environmental stabilisation. This is achieved by a combination of re-wetting, where possible, and natural colonisation of the former cutaway, with or without intervention**.** Other after-use development may also serve to act as rehabilitation.

Standard decommissioning: This is defined as decommissioning that is designed to meet the conditions of the EPA IPC Licence. This is defined as to render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

Wetland cutaway bog. Wetland cutaway bog is defined as former raised bogs that have been in industrial peat production, where production has ceased and the majority of peat has been cutaway, and where this cutaway has the potential to be re-wetted. A significant number of BnM sites have pumped drainage and these sites are likely to develop a mosaic of wetland habitats when pumping in reduced or stopped. The water chemistry of wetland cutaway frequently is strongly influenced by the more alkaline sub-soils that have been exposed during peat production. This means that pioneer vegetation is more typical of fen and wetland, rather than raised bog. Wetland cutaway will have a broad range of hydrological conditions depending on the local topography. In some cases, these wetlands may form deep water (> 0.5 m) whilst other areas may have the water table at or just below the surface of the ground.

APPENDIX VIII: EXTRACTIVE WASTE MANAGEMENT PLAN

(Minimisation, treatment, recovery and disposal)

Objective:
The objective of this generic plan is to comply with the requirements of regulation 5 of the Waste Management (Management of Waste from Extractive Industries) Regulations, and to prevent or reduce waste production and its harmfulness.

Scope:
This plan covers IPPC Licence's Ref P0499-01, Littleton Group of Bogs located in Co. Tipperary.

1.0 Extractive Waste:
Waste classified as extractive waste from peat extraction operations arise from three operations associated with this activity.

1.1 Silt Pond excavations and maintenance.
All peat extraction activities in the Littleton bog group are serviced by silt lagoons/ponds. During the excavation of these silt ponds, pre IPPC Licensing in 1999 and since licensing, the excavated material is stored adjacent to the silt pond, where it either remains in situ ores levelled out. As required by condition 6.6, these silt lagoons are cleaned twice per annum or more often if inspections dictate. These silt cleanings are also deposited on the same location, adjacent to the silt pond, where they may be levelled periodically to allow room for subsequent cleanings. These mounds of silt pond excavation material and cleanings are generally no higher that 2-3 metres.

1.2 Power Station screenings:
Lough Ree Power Station screens the peat from the bogs prior to processing. This screening removes oversized peat, stones and bogs timbers. Schedule 3 (ii) of the IPPC licence permits disposal of these peat screenings back to the bog, where it is levelled and graded into the surrounding peat landscape. These locations have been agreed with the Agency as per condition 7.4 of the IPPC Licence, and as per the attached locations.

1.3 Bog Timbers:
During peat extraction operations, bog timbers often arise in the bog surface and are required to be cleared. These timbers consist of bog pine, oak and some yew. Some of these timbers, such as the oak and yew are removed for use in the wood craft industry, with the remaining bog pine stockpiled in locations at the opposite end of each bog, where it generally becomes a habitat for flora and fauna. These piles of timber are generally no higher than 1-2 metres.

2.0 P0499-01 IPPC Licence Extractive Waste Conditions

2.1 Condition 7.5 Extractive Waste Management
The licensee shall draw up a Waste Management Plan (to be known as an Extractive Waste Management Plan) for the minimisation, treatment, recovery and disposal of extractive waste. This Plan shall meet the requirements of regulation 5 of the Waste Management (Management of Waste from the Extractive Industries) Regulations,2009. The Plan shall be submitted for agreement by the Agency by the 31' December 2012. The Plan shall be reviewed at least once every five years thereafter in a manner agreeable to the Agency and amended in the event of substantial changes to the operation of a waste facility or to the waste deposited. Any amendments shall be notified to the Agency.
All extractive waste shall be managed in accordance with the Extractive Waste Management Plan. A report on the implementation of the Extractive Waste Management Plan shall be provided in the AER.

2.2 Condition 7.6 Waste Facility

(i) No new waste facility may be developed or an existing waste facility modified unless agreed by the Agency.
(ii) The licensee shall ensure that all existing waste facilities are managed and maintained to ensure their physical stability and to prevent pollution or contamination of soil, air, surface water or groundwater.
(iii) The licensee shall ensure that all new waste facilities are constructed, managed and maintained to ensure their physical stability and to prevent pollution or contamination of soil, air, surface water or groundwater.
(iv) Operational measures shall be continuously employed to prevent damage to waste facilities from personnel, plant or equipment.
(v) The licensee shall establish and maintain a system for regular monitoring and inspection of waste facilities.
(vi) All records of monitoring and inspection of waste facilities, as required under the licence, shall be maintained on-site in order to ensure the appropriate handover of information in the event of a change of operator or relevant personnel.

2.3 Condition 7.7 Excavation Voids

7.7.1 Unless otherwise agreed by the Agency, only extractive waste shall be placed in excavation voids.
7.7.2 When placing extractive waste into excavation voids for rehabilitation and construction purposes, the licensee shall, in accordance with regulation 10 of the Waste Management (Management of Waste from the Extractive Industries) Regulations, 2009, and the Extractive Waste Management Plan:

- Secure the stability of the waste
- Put in place measures to prevent pollution of soil, surface water and ground water.
- Carry out monitoring of the extractive waste and excavation void.

Condition 7.5. Extractive Waste Management Plan. 5 (1)

3.0 Minimisation.

3.1 Silt pond excavation material and cleanings.

IPPC Licence conditions require all production areas to be serviced by an appropriately designed silt pond based on storage volume and retention time. Condition 6.6 requires all ponds to be cleaned bi-annually and more often if inspections dictate, so the only opportunity for minimisation of same is through Standard Operating Procedures. These are required under condition 2.2.2 (i) regarding minimisation of suspended solids, and are in-place to minimise the generation of silt, which in-turn will minimise the generation of silt pond waste.

3.2 Power Station Screenings.

These screenings cannot be minimised as they are a consequence of peat production, stones, timbers and oversize peat materials are naturally occurring on the bog, and are required to be removed prior to processing.

3.3 Bog Timbers.

Bog timbers are also naturally occurring materials within a bog and are required to be removed prior for production. The volume of these bog timbers varies from bog to bog and as such their minimisation is not controllable or quantifiable.

4.0 Treatment

4.1 Silt pond excavation material and cleanings.

The silt pond excavation material and silt cleanings do not require any treatment for its end use which will be either backfilling these silt pond voids as per condition 7.7.1 above as part of the Bog Rehabilitation Plan, or reincorporated into the surrounding peatlands.

4.2 Power Station Screenings.

The factory screenings are permitted to be returned to the bog as they were naturally occurring materials from the bog, and as such do not require any treatment to serve this purpose.

4.3 Bog Timbers
As per 1.3 above, these timbers are stockpiled at two locations in each bog, as per the attached list of sites and become habitats for various flora and fauna.

5.0 Recovery
5.1 Silt pond excavation material and cleanings.
Condition 2.2.2 (vi) requires the reuse of silt pond waste to be examined. This was undertaken in 2006, the outcome of which was that this waste peat silt material, as a fuel, was contaminated with sub-soils, rendering it unsuitable for combustion. In addition, volumes are small compared to overall peat production volumes.

5.2 Power Station Screenings.
Given the nature of these screenings as outlined in 1.2 above, there is no further use identified and they are permitted to be disposed of back to the bog.

5.3 Bog Timbers
Investigations into processing these materials into smaller fractions for potential heating purposes did not yield any viable results. In addition, these older stockpiles are now classified as habitats and as such would not be considered for reuse as a fuel.

6.0 Disposal
6.1 Silt pond excavation material and cleanings.
Schedule 3 (ii) permits the disposal of silt pond cleanings (Lagoon Sediments) to the bog and these locations, adjacent to the silt pond site, are presented in the attached spreadsheet, with associated grid coordinates.

6.2 Power Station Screenings.
Schedule 3 (ii) permits the disposal of screenings (Peat Screenings) to the bog at designated locations agreed under Condition 7.4, and these locations, are presented in the attached spreadsheet, with associated grid coordinates.

6.3 Bog Timbers
These naturally occurring bog timbers are stockpiled at locations in each bog, grid coordinates attached.

7.0 Extractive Waste Management Plan

5 (2a)(i)
The vast majority of peat extraction bogs were all designed and drained for production prior to the 1960's and as such the production fields layout cannot' be altered. Under our Cleaner Reduction Procedures, various design changes have been implemented to the production machines and process to reduce lost peat which eventually is captured in the silt ponds and requires removal as waste peat silt. This along with training and ongoing research and development will continuously reduce waste peat and subsequently waste silt pond cleanings. Bog timbers are present naturally in various volumes and quantities in different bogs and as peat production involves stripping peat in layers, the exposure, generation and removal of these timbers is unavoidable. Work has been undertaken recently into project looking at grinding of these bog timbers in situ using a timber miller, and if this project becomes viable it will contribute to the reduction of bog timbers.

5 (2a)(ii)
Given the nature and expanse of peat bogs, the stockpiling and storage of these waste materials do not present a visual, storage or stability problem. As required under Condition 10 of the IPPC Licence, the silt pond excavations and screenings will be utilised to backfill the silt pond voids once the bogs have finished and stabilised in accordance with out Bog Rehabilitation Plan. Storage of these wastes in the interim, open to the elements does

not present a change on the nature of these wastes that will threaten the environment or prevent their reuse during the bog rehabilitation process.

5 (2a)(iii)
Under Condition 10 of the IPPC Licence, all silt ponds will be decommissioned once the bog surface has stabilised, in agreement with the Agency. This will involve the removal of weirs and flow controls, returning the silt pond back to its original drain or removing the silt pond from the drainage system. Both of these activities will involve placing the silt pond extraction and cleaning material back into the excavation void.

5 (2a)(iv)
The peat bogs do not contain any topsoil, so this is not required.

5 (2a)(v)
Peat mineral resources do not undergo any treatment.

5 (2b)
These three extractive waste are all being reused and recovered back to their original extraction points and have not undergone any physical, chemical, or biological change.

5 (2c)(i, ii & iii)
These three extractive wastes, stored on the bog for reuse or recovery during the bog rehabilitation phase, do not require any management or monitoring during the operation of these bogs. Silt pond excavations and cleanings are stored adjacent to the silt pond and quickly revegetated and stabilise, the screenings are graded back into the bog at the agreed locations upon disposal and the bog timbers do not prevent any water or airborne danger to the environment.

5 (3)
The three extractive wastes arising from peat extraction operations at this site are classified wastes from mineral non-metalliferous excavation, with an EWC code of 0101 02. The materials are not classified as hazardous under Directive 91/689/EEC20, and do not contain substances or preparations classified as dangerous under Directives 67/548/EEC5 or 1999/45/EC6 above a certain threshold.
The peat excavations and cleanings are stored in locations and in a manner that they could not collapse, and are remote in their nature. The stockpiles are located adjacent to silt ponds that are cleaned regularly and as such these stockpiles are managed and levelled to facilitate further cleanings.
Therefore the material stored at these waste facilities would not be considered to be a Category A waste facility.

Classification in accordance Annex II.

Waste Material	Description	Classification	Chemical Process treatment	Deposition description	Transport System
Silt Pond Excavations and cleanings	Peat and mineral soils associated with peatlands. Stored for reuse during bog rehabilitation, with no displacement of overburden	01 01 02	None	Excavated from silt ponds by excavator and deposited adjacent to the silt pond.	Excavator
Peat Screenings	Stones, timbers and oversized peat particles, reincorporated into low	01 01 02	None	Removed by screen at the factory and	Tractor and trailer.

Waste Material	Description	Classification	Chemical Process treatment	Deposition description	Transport System
	areas, agreed with the Agency, and stabilized under normal natural bog conditions			transported by tractor and trailer to the designated and agreed locations	
Bog Timbers	Pine, Oak and Yew species, stored at locations in each bog. Not subject to any stability issues due to exposure to atmospheric/meteorological conditions.	01 01 02	None	Removed from the bog surface by excavator and transported by tractor and trailer to the agreed locations	Tractor and Trailer

Description of operations.
Silt pond excavations arise from the requirement to have silt ponds treating all peat extraction sites. Silt pond cleanings arise from the removal of peat silt from silt ponds as required under IPPC Licence. Bog timbers arise from preparation of the bogs surface for peat production. Estimated quantities of materials are below:

Closure plan. (Bog Rehabilitation Plan).
Condition 10.1 – 10.3 of the IPPC Licence requires the following:

- 10.1 Following termination of use or involvement of all or part of the site in the licensed activity, the licensee shall:
- 10.1.1 Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.
- 10.1.2 Implement the agreed cutaway bog rehabilitation plan (refer Condition 10.2).

10.2 Cutaway Bog Rehabilitation Plan:

- 10.2.1 The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area. This plan shall be submitted to the Agency for agreement within eighteen months of the date of grant of this licence.
- 10.2.2 The plan shall be reviewed every two years and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the written agreement of the Agency.

10.3 The Rehabilitation Plan shall include as a minimum, the following:

- 10.3.1 A scope statement for the plan; to include outcome of consultations with relevant Agencies, Authorities and affected parties (to be identified by the licensee).
- 10.3.2 The criteria which define the successful rehabilitation of the activity or part thereof, which ensures minimum impact to the environment.
- 10.3.3 A programme to achieve the stated criteria.
- 10.3.4 Where relevant, a test programme to demonstrate the successful implementation of the rehabilitation plan.
- 10.3.5 A programme for aftercare and maintenance.

10.4 A final validation report to include a certificate of completion for the Rehabilitation Plan, for all or part of the site as necessary, shall be submitted to the Agency within six months of execution of the plan. The licensee

shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment. This plan including maps and ecological classifications are available on file at the Allen Clonsast IPPC Licence Coordinators office.
The location in relation to the silt pond excavations and cleanings are adjacent to the silt ponds, which are considered under the Shannon River Basin Management Plan in accordance with the requirements of Directive 2000/60/EC.
Screenings and bog timbers are all naturally occurring elements of peatland and there placement back to the bog in smaller concentrated designated waste facilities does not constitute a risk to the prevention of water compliance.
The lands under where these materials are deposited are peatlands and are un-effected by the placing of this material.

Review.
This plan will be reviewed every five years, the first review to take place in September 2017. This review will entail an inspection of these waste facilities to ensure their placing, management, maintenance and stability comply with the requirements of the Extractive Waste Management requirements and condition 7.5, 7.6 and 7.7 of the Littleton IPPC Licence P0499-01.

APPENDIX IX: CONSULTATION SUMMARIES

Table APXI -1 Consultees contacted.

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Consultation undertaken in 2017-2018						
Baunmore	Private individual A		27/11/2017	Letter		
Littleton Bog Group	Irish Peatland Conservation Council	Several staff members		letter	14/02/2018	
Ballysorrell, Templetouhy, Baunmore	National Parks and Wildlife Service	Several staff members	6/02/2018	Site meeting	8/3/2018	
Lanespark	Private individual B		11/04/2018	Site Visit	11/04/2018	
Ballysorrell, Carrickhill Baunmore	NUIG	Several staff members	23/04/2018	Site Visit	23/04/2018	
Littleton Bog Group	Private individual C		25/04/2018	Phone	25/04/2018	
Derryvilla	Slieve Ardagh Rural Development Group	Several members	1/06/2018	Meeting	1/6/2018	
Littleton Bog Group	National Parks and Wildlife Service	Regional staff	24/05/2018	Email	1/06/2018	
Littleton Bog Group	General community meeting – Loch Doire Bhile, site visit to Baunmore		12/06/2018	Site Visit/meeting	12/06/2018	
Littleton Bog Group	National Parks and Wildlife Service	Regional staff	14/06/2018	Site visit	14/06/2018	
Littleton Bog Group	Tipperary County Council	Heritage Officer	23/06/2018	Phone	23/06/2018	
Derryvilla	Private Individual D		27/06/2018	Meeting	27/06/2018	
Littleton Bog Group	Birdwatch Ireland	Several staff members	1/08/2018	Email	3/08/2018	
Littleton Bog Group	Irish Peatland Conservation Council	Several staff members	1/08/2018	Letter	15/08/2018	
Littleton Bog Group	Kilkenny County Council	Heritage Officer	1/08/2018	Email	3/08/2018	

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Littleton Bog Group	National Parks and Wildlife Service	Several staff members	1/08/2018	Letter	9/10/2018	
Littleton Bog Group	Irish Peatland Conservation Council	Several staff members	30/08/2018	Meeting	30/08/2018	
Littleton	Forest Service	Several staff members	14/08/2018	Email	14/08/2018	
Baunmore & Littleton	Birdwatch Ireland – Tipperary Branch	Several staff members	1/10/2018	Site visit	1/10/2018	
Littleton Bog Group	Tipperary County Council	Several staff members	5/11/2018	Email	19/11/2018	
Littleton Bog Group	Tipperary Heritage Forum	Several staff members	15/02/2019	Presentation	15/02/2019	
Knockahaw	Private Individual E		1/02/2019	Site Visit	1/02/2019	
Littleton Bog Group	Environmental Protection Agency, National Parks and Wildlife Service, Irish Peatland Conservation Council	Several staff members	26/02/2019	Presentation meeting	26/02/2019	
Baunmore	Irish Wildlife Trust	Several staff members	12/05/2019	Site Visit/Walk	12/05/2019	
Lanespark Derryvilla	National Parks and Wildlife Service and Slieve Ardagh Rural Development Group – Loch Doire Bhile	Several staff members	22/05/2019	Meeting	22/05/2019	
Longford Pass	Private Individual F		5/07/2019	Site visit	5/07/2019	
Ballysorrell	Heritage Week Walk - Ballysorrell	Several staff members	17/08/2019	Site Visit/Wak	17/08/2019	
Baunmore Carrickhill	Limerick Institute of Technology (LIT)	Several staff members	13/09/2019	Site visit	13/09/2019	

APXI -2 Response summary from Consultees contacted (*Note: This includes consultation undertaken as part of the Phase 1 rehabilitation plan).*

Organisation	Summary of Response by Stakeholder	BnM Response
NPWS 8/3/2018	Ballysorrell All walked over the bog and viewed the bog restoration works. MCC outlined work carried out so far and work planned for the future. Planned work is > 75% complete. NPWS staff very complementary of the bog restoration work (drain-blocking with peat dams) carried out so far. All agreed that the bog had significant potential for bog restoration, and future nature conservation. Signs that the bog is already re-wetting in places due to drain-blocking. Review and discussion of NPWS degraded raised bog model outputs for Ballysorrell. Model predicted that 9 ha would have potential for development into active raised bog in the future. General view was that this was probably an under-estimate and that the model likely to be affected by the intensive BnM drainage network. Discussion of potential measures to further increase re-wetting of the bog including berms across high bog at southern section. Bruckana All visited the Bruckana Windfarm. Viewed a cutaway bog area within the windfarm complex where there has been significant natural colonisation for at least 20 years and some targeted hydrological management. Discussion of the former history of Templetuohy Bog as a sod turf production bog. Sod turf cutaway tends to have deeper remnant peat, which in turn can develop Sphagnum-rich vegetation, where conditions suit. Attendees viewed some wet cutaway where there has been some Sphagnum colonisation. Discussion of environmental conditions that led to the development of this specific vegetation type. Discussion of potential to re-wet similar cutaway, with similar environmental conditions and deeper peat, to encourage development of Sphagnum-rich peat-forming vegetation. Discussion of different constraints and opportunities for this type of re-wetting. This Sphagnum-rich peat-forming vegetation only has potential to develop in certain environmental conditions in association with deeper peat. NPWS staff suggested that intensive bunding would have potential to increase the overall re-wetted area. There was general discussion of potential larger project opportunities, in association with planned BnM rehabilitation or future BnM afteruse development. These larger projects could potentially focus on GHG emission reduction, creation of peat-forming habitats, biodiversity enhancement, other ecosystem services enhancement/restoration. Baunmore All visited Baunmore cutaway. Baunmore is a typical milled peat cutaway with pumped drainage and with shallower remnant peat more typical of milled cutaway in the Littleton Bog Group, in contrast to Bruckana. All walked part of the bog where some recent rehabilitation trials have been carried out. MMC pointed out the recent field drain blocking using a bull-dozer that has been carried out so far. The target here was to block drains, re-establish surface drainage and re-wet peat. This work has already successfully held back surface water in places. The cambered fields and variable topography mean that a proportion of the peat fields remain dry. The expected habitat development is a mosaic of poor fen wetland communities, Reed swamp and scrub/wet woodland. MMC explained how blocking the field drains is Phase 1 of the planned rehab trial and that Phase 2 will involve blocking outfalls and cutting new overflow drains to further manipulate overall water levels. The overall strategy is to maximise the area of re-wetted peat with water levels close to the peat surface and emergent wetland communities. NPWS staff also suggested that more intensive bunding would have potential to increase the overall re-wetted area and help manage water levels. All then examined some cutaway that is colonising naturally with pioneer vegetation. This cutaway is much more alkaline compared to Bruckana with indicators such as the presence of Black Bog-rush.	

Organisation	Summary of Response by Stakeholder	BnM Response
Tipperary Cunty Council	The draft plan is an overview of the rehabilitation within the Littleton bog group this comprises of 12 bog areas. The plan is developed under Condition 10 of IPC Licence Ref. P0499-01. (An incorrect licence ref. is given in the plan.) Any consideration for future after uses for the bog areas will be subject to the planning regulatory framework and the Environment section will be obliged to comment at this time on a more detailed proposal. The rehabilitation plan should include best practice measures for the restoration of an optimal range of biodiversity and ecosystems. The aftercare management activities on the level, quantity and quality of water both on site and in the surrounding landscape should avoid any unnecessary deterioration in the quality and quantity of ground and surface waters. After use, peatland water levels and flow regimes should be restored to as close to the natural reference conditions as possible. Any works carried out must be detailed and all stakeholders consulted.	
Irish Peatland Conservation Council	The IPCC welcome the zonation of Ballysorrell Bog for biodiversity and the decision not to develop it for peat resources (Page 3). Ballysorrell Bog is quite southerly in its location and its rehabilitation and zonation for biodiversity will help to extend the range of raised bog habitat in Ireland, which according to "The Status of EU Protected Habitats and Species in Ireland | 2013" (NPWS, 2013) is "BAD". We have a few questions and points to make on the draft rehabilitation plan with the aim to improving its content. It is good to see that BnM will be restoring the hydrology of the high bog through drain blocking as mentioned on Page 4 and that you also intend to carry out a trial rehab programme of a selected area for training purposes. Could you please elaborate on this? What training/trials do you intend to conduct and is it only inhouse training for BnM staff? The rehabilitation process may be a good time to test the Canadian method of Sphagnum transfer as there would be time to prepare the site prior to drain blocking. Please give this suggestion consideration as you indicated the peat present as light red brown Sphagnum peat (Page 9). There is Sphagnum on site that could be harvested and used as a donor inoculum for a Sphagnum trial. Page 5 gives information on the short and long-term time-frames of the plan. Could you give more details on the methods that will be utilised to monitor the hydrology i.e. will piezometers be used to measure water levels and will they be measured before drain blocking? This could ensure that any hydrological successes will be shown. In addition, how frequently will the ecotope mapping be conducted? Page 3 details the time-line for the development of Ballysorrell ("Ballysorrell was originally developed....."). Could this historical timeline be re-written as it is difficult to follow. For instance, when did the private sodpeat cutting around the bog cease? When did the milled peat production cease? Could you please specify how Ballysorrell Bog will help to achieve the national conservation target for active raised bog and supporting habitat in Ireland? Are there plans to formally designate this site in the future? Thank you for giving us this opportunity to make some comments on this welcome initiative by Bord na Mona.	
NPWS 9/10/2018	The Department, particularly, welcomes the restoration measures proposed for Ballysorrell Bog and Knockahaw Bog which will result in the development of active raised bog habitat and acknowledge that this will significantly aid Ireland in meeting its commitments under the EU Habitats Directive. Whilst it is appreciated that "the rehabilitation measures will be adapted to the various baseline conditions" (Part 1, pg.20) the Department recommends that BnM consider more fully the potential for forward-planning during production phases of its operation so that the topography of the commercial fields could be engineered so as to best facilitate rewetting of the sites. Such an approach would better conform to Principle 17 (afteruse of cutaway peatlands) of the National Peatlands Strategy (2015). The Department recommends that the ongoing research into the interaction between rehabilitation measures and carbon emissions is prioritized so as to better inform future rehabilitation plans. In the absence of the assimilation of such research outputs into rehabilitation planning it is nonetheless recommended that serious consideration is giving to reprofiling works within the Littleton Bog Group. In relevant sites this could greatly improve the baseline conditions for rewetting and would be justified on the basis that rewetted cutaway has lower carbon emissions that dry, bare cutaway. The foregoing is in line with Principle 19 (contribution of peatland rehabilitation and restoration to climate change mitigation and adaption) of the National Peatlands Strategy. There is some difficulty interpreting the maps due to their complexity and the size of the legend. Maps showing specific restoration actions would be useful, possibly in the form of an	

Organisation	Summary of Response by Stakeholder	BnM Response
	overview grid at a scale 1:35,000 with more detailed mapping as per grid squares. Eco-hydrological modelling based on LiDAR/DTM would be essential to ascertain the potential to achieve wet habitats with the potential to turn into carbon sinks. ….. 2 The Department is keen to continue engagement with BnM as regards investigating more engineered restoration techniques likely to provide results in line with the principles of the National Peatlands Strategy. The NPWS of the Department would welcome an opportunity to meet with you to allow for the Plan to be presented by your Ecology Team and to further explore the options of external funding such as EU LIFE funding, as discussed in previous meetings.	
IPCC 15/08/2018	Could you please clarify the correct area for the group of 12 sites included: is it 5050ha (Page 11, Section 4.2) or is it 4824ha (Page 11, Table 1). If it is the latter could you clarify what the other 226ha constitutes please. IPCC's principal interest in this plan lies in the future of existing acid peat bog remnants, the potential of the cutaway areas to provide biodiversity value and priority habitats for nature conservation, climate change mitigation and the extent to which the plan meets requirements of the National Peatlands Strategy 2015. The area of peatland included in the Littleton Bog Group is significant in the county of Tipperary as it represents one third of the original area of raised bog that occurred in the whole County particularly concentrated in South Tipperary (Hammond 1979 Peatland Map of Ireland) the southern distribution range for raised bogs described in the Status of EU Protected Habitats and Species. In your plan on Table 5 only two bog restoration sites (Ballysorrell and Knockahaw) are proposed covering an area of 567ha. Can you explain the method used in choosing these areas for bog restoration and were any other sites considered within the group? IPCC maintain that two sites is far too little considering the area of the land in the Littleton Group and the lack of any sites of conservation value in this area of former raised bog distribution. We note that Killeens Bog contains acidic peat and that it appears to be earmarked for horticultural peat (sod moss judging from the satellite photograph) should this be required. On Page 16 in conclusion 5 the plan states that this bog could be restored if horticultural peat extraction is stopped. IPCC strongly recommend the immediate cessation of this activity on this site and its inclusion in the restoration sites plan. We have reasoned with BnM on numerous occasions about the continued national production of horticultural peat as we do not agree that this use represents responsible management as defined in principle P24 in the National Peatlands Strategy. We understand that Sod Moss is regarded in economic terms as a "lost leader" product which negates any economic argument for keeping this site in production. Here in Littleton where BnM have exploited over 5000ha of Tipperary's natural peatland resources, all peat production should cease and every effort should be made to restore suitable acid peat resources to living bog where they exist. In this regard on Page 15 (Section 4.3.1.1 [ii]) two further sites with acid peat are mentioned - Carrickhill (substantial raised bog cutover east and west of the cutaway) & Inch (raised bog cutover to the south west of the cutaway) - why are these sites not being included in the bog restoration sites line-up? In the IPCC Sites Database we have a site named Longford Pass - Littleton Bog which is a remnant raised bog that we surveyed with a former BnM employee Sean Canney and which we subsequently used for educational purposes with local schools with the agreement of BnM. We would like to see this site included in the bog sites restoration list. (Grid ref. = S 23023 59319). IPCC are very unclear about your aims for the non-designated sites with considerable wildlife interest described on Page 21 of the plan. We estimate that there are 10 sites mentioned that are noteworthy for birds, crustaceans and invertebrates. In addition a further 3 rehabilitation sites are included in the BnM Biodiversity Plan. On the one hand BnM makes use of the fact that cutaway bogs are rich in biodiversity as part of the "Naturally Driven" image you like to portray but we can see no substantial commitment to undertake targeted management actions in relation to enhancing and maintaining these species on the sites. For example on Page 19 you state that without additional funding targeted conservation works for breeding birds will not be a feature of this plan. This is wrong and is at odds with Principle 15 in the National Peatlands Strategy 2015. In relation to climate	

Organisation	Summary of Response by Stakeholder	BnM Response
	change this rehabilitation plan needs to ensure that all of the cutaway bogs within the Littleton Group are rewetted to prevent carbon leakage. In our experience through visits to Mount Lucas, Ballycon and Lullymore cutaway bogs there are substantial areas within these rehabilitated sites that are dry and emitting carbon. Why does BnM not recontour sites with un-even topography to ensure that the majority of the bare peat is rewetted? Surely at the peat production stage more effort could be made to extract the peat so that flat substrate remains. Can you indicate within the plan the percentage of peat that will be rewetted and be carbon neutral? This is an important consideration in line with national climate change policy. IPCC find that the plan is overstating the company's intention to cease peat production for electricity by 2030 as their contribution to climate change policy	
Private Individual C	Phone call to discuss potential to develop greenway amenity across the Littleton Bog Group.	
Private Individual D	Meeting to discuss boundary issues and potential impact of rehabilitation on adjoining land	
Private Individual F	Meeting to discuss rare orchids at Longford Pass railway cutting	
Littleton Bog Group PCAS Consultation undertaken in 2025		
Uisce Éireann (formerly Irish Water)	In their response, Uisce Éireann stated that they are 'supportive of the key objective of achieving environmental stabilisation of the bogs and stabilising/improving key emissions to water. Uisce Éireann understand that restored peatlands are generally beneficial for drinking water sources downstream by improving water quality and by creating water retention and slowing the flow from the site. We are therefore in support of the Cutaway Bog Decommissioning and Rehabilitation Plan and believe that it could help to achieve to improvements the quality of drinking water sources downstream in terms of suspended sediment, colour, ammonia and dissolved organic carbon. Uisce Éireann provided suggestions and recommendations around water quality monitoring and the management of silt ponds during and post rehabilitation.	BnM acknowledged the response and responded to the queries raised. Consultation is ongoing.
Iarnród Éireann/Irish Rail	The location is approximately 10km from the nearest Iarnród Éireann railway line in Thurles, so Iarnród Éireann have no comments to make about the proposed work.	BnM acknowledges the response.
Minister of State with responsibility for Nature, Heritage and Biodiversity - Christopher O'Sullivan TD.	Acknowledge receipt of consultation.	BnM acknowledges the response.
Tipperary County Council	In their submission, Tipperary County Council highlighted that the rehabilitation plan should 'ensure that future options for amenity or tourism uses of the lands are not discounted, having regard to the Council's aspirations to develop eco-tourism projects throughout the county'. Further, it was	BnM acknowledged the response. Consultation is ongoing.

Organisation	Summary of Response by Stakeholder	BnM Response
	highlighted that archaeological impacts associated with rehabilitation of Killeen bog, given the rich archaeological heritage of the lands, should be assessed. Recognition of the Littleton Labyrinth projects is welcomed by Tipperary County Council. The rehabilitation of the bog should have regard to future access and way-leaves for access and services of the adjacent Lisheen Mines National Bioeconomy Campus. Tipperary County Council provided information on the relevant policies and objectives within the Tipperary County Council's Climate Action Plan 2024-2029 that aligned with peatland restoration. Other information focused on the Tipperary Decarbonising Zone, and how peatland restoration would benefit such decarbonisation. Other information was provided on the council's policies on Land-use, Land-use Change and Forestry (LULUCF). It notes that the 'management of agricultural ecosystems, such as grasslands and peatlands' are emitters of CO2 and 'the management of agricultural ecosystems, such as grasslands and peatlands 'an important area for climate mitigation measures'. 'For example, alternative land management measures such as raising the water table in existing pastures and peatlands, new crop types, forestry etc could make this sector a net remover of GHGs'. The submission notes that 'BnM is to be commended for its decarbonisation programme aimed at reducing the carbon emissions from its activities. This programme supports the National policy position and objective of achieving a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050'. The submission requests: • 'stakeholder collaboration to deliver concerted efforts towards carbon and GHG emissions reductions within the DZ, which can lead the way for wider application across Tipperary'. • 'BnaM are requested to considered if there are opportunities for collaboration with stakeholders, including Tipperary County Council, as part of the delivery of their PCAS programme'. • 'The Mid-Tipperary Decarbonising Zone is within the JTF area and thus there are opportunities to engage local communities, including those previously employed in the peat harvesting industry, in areas related to training and upskilling and sustainable local job creation'. • 'BnaM are requested to consider the referring of the Mid-Tipperary DZ in their relevant publications and projects. In particular to include details on the Mid-Tipperary Decarbonising Zone in the relevant Rehabilitation Plans and associated Map Books'. • 'The strategic location of the national Bioeconomy Campus (Irish Bioeconomy Foundation) at Lisheen should be noted and it is requested that BnaM consider the vision for the National Bioeconomy campus as part of their overall plans in the Mid-Tipperary DZ areas'. 'BnaM are requested to consider, given the particular role of the national DZ programme in emissions reduction, if there is an opportunity to monitor the changes in carbon emissions from a current baseline within the Killeen bog and report on reduced the carbon emissions in support of the national objective of achieving a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050. Thus, the rehabilitation plans can explicitly state how emissions will be monitored and reported. Such reporting will also support Tipperary County Council objectives for supporting moves towards low-carbon communities within the Decarbonising Zone'.	
An Taisce	In their submission, An Taisce welcomed 'any efforts made to rehabilitate and eventually restore Ireland's network of heavily degraded bog lands. This is crucial in the context of the intertwined biodiversity and climate emergencies, and the crucial carbon sequestration function of healthy bogland alongside other ecosystem services'. Expressed that peatlands should not be subject to future development 'which could have negative ecological impacts in terms of hydrological regime, critical wildlife habitat, carbon sequestration function and other ecosystem services'	BnM acknowledged the response. Consultation is ongoing.

Organisation	Summary of Response by Stakeholder	BnM Response
	An Taisce 'highlight an example of a rare species returning to a naturally regenerating bog on BnM lands, namely the Crane, which was absent as a successfully breeding species in Ireland for hundreds of years.2 This demonstrates the positive and regenerative cascading effects across an ecosystem when it is devoid of intensive industrial activity and allowed to regenerate and eventually flourish. We submit that the subject rehabilitation should be considered with these benefits in mind, and that resumption of any type of industrial activity should be excluded within boglands with the highest restoration potential or in those which have already been rehabilitated/restored'. Queries if Coillte conifer plantation forestry could be included in the rehabilitation plan. For Bord na Mona to prevent small-scale illegal turf cutting within the subject site. A request for continuous ecological monitoring to be carried out at the site to ascertain its full ecological value and potential. An Taisce 'welcome the commitment to bunding as a measure throughout the peatland restoration proposal, which is recognised by stakeholders such as the NPWS and IPCC as effective for rewetting purposes'. Concerns were raised 'about the effects of drought and wildfire risk, as well as excess rainfall events and subsequent flooding effects'.	

APPENDIX X: ARCHAEOLOGY

Role of the Archaeological Liaison Officer

1. To communicate this Code of Practice and the *Archaeological Protection Procedures* (Appendix IV) to all personnel operating on the bog.
2. To ensure that all notices relating to the *Archaeological Protection Procedures* are posted and maintained at appropriate locations on the bog.
3. To report any stray finds, presented to the Liaison Officer from his/her group of bogs, to the Duty Officer of the National Museum of Ireland.
4. To provide for the appropriate protection of the stray find, whether in-situ or removed from the bog, as directed by the Duty Officer of the National Museum of Ireland.



Code of Practice

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Code of Practice

5. To arrange for the delivery or collection of the stray find, as directed by the Duty Officer of the National Museum of Ireland.

6. To complete the Report of Discovery of Archaeological Object(s) in Bogs (Appendix V), as directed by the Duty Officer of the National Museum of Ireland.

7. To maintain a file of all stray finds and associated documentation and provide copies to the Project Archaeologist.

8. To provide assistance, where required, to the Department during archaeological surveys.

9. To provide assistance, where required, to Bord na Móna's Consultant Archaeologists, during investigation and mitigation of monuments.

10. To report to the Bord na Móna members on the Archaeology Management Liaison Committee any planned developments or new activities on cutaway peatland areas within his/her group of bogs.



1. Purpose

The purpose of this procedure is to describe the arrangements within Bord na Móna (BnM) for the identification, protection and reporting of archaeological material, including stray finds and known archaeological features.

All objects, sites or monuments, no matter how fragmentary, are important elements of our national heritage. The protection of archaeological resources is a legal requirement and forms part of Bord na Móna's environmental and cultural heritage responsibilities.

This procedure also sets out operational controls to ensure that archaeological features and their associated buffer zones are protected during rehabilitation activities.

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2. Procedure

2.1 Archaeological Awareness

1. Verify whether any known archaeological monuments or constraints exist within the proposed work area prior to commencing works. These can be identified using the BnM GIS system, including the relevant PCAS layers and associated field maps.
2. All archaeological locations and their associated buffer zones shall be clearly marked on the bog in advance of any rehabilitation activities, irrespective of whether works are planned within those areas. The Survey Team will endeavour to mark all zones prior to commencement of rehabilitation works on a given bog; however, this is subject to the availability of survey resources. Where features are located in areas that are unsafe to access (e.g. water-covered areas), physical marking is not required.
3. These markings must be installed prior to machinery entering the field where all rehabilitation measures are taking place.
4. Archaeological features located within fields will be marked by the Survey Team using a visible red "X" to clearly alert operators to the presence of an archaeological constraint. These features are typically accompanied by a 20 m buffer zone, which may restrict access to up to three adjacent fields.
5. Operators must not drive over or across these markers, including when moving between work areas. Operators must navigate around the marked locations and their associated buffer zones.
6. If operators are observed driving over archaeological markers in order to move to the next work area, this must be reported to the Site Supervisor or **Archaeological Liaison Officer** immediately so corrective action can be taken.
7. Archaeological areas and their associated buffer zones must not be used for machine travel, idle travel, turning, or equipment positioning.

2.2 Stray Finds Procedure

1 Be vigilant at all times. Objects or traces of structures may be found:

- on field surfaces
- in drain faces
- on bog margins
- caught within the mechanics of machinery.

2 If a n object is discovered:

- Leave it in place if it is safe to do so.
- Note its position.
- Immediately contact the **Archaeological Liaison Officer**, who will assess the situation and contact the Duty Officer of the National Museum of Ireland where required.

3 Resist the temptation to investigate the find spot further, as this may disturb fragile archaeological deposits.

4 If the object has already been dislodged or is in imminent danger:

- Remove it carefully.
- Mark the find location.
- Report it immediately to the **Archaeological Liaison Officer**.

5 Objects made of **wood, leather or textile**, particularly those removed from peat, must be kept in conditions similar to those in which they were found. This may include:

- packing the object in peat, or
- placing waterlogged items in a clean basin of water and sealing the container.

6 Do not attempt to clean or remove peat from the object.

7 If **timbers, gravel, stones or other materials that may form part of a man-made structure** are discovered:

- mark the location
- report immediately to the **Archaeological Liaison Officer**
- do not expose the structure further.

8 Report anything that appears **unnatural or unusual in the bog**. The **Archaeological Liaison Officer** will determine whether the find requires referral to the relevant authorities.

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3. Important Note

Our archaeological heritage is a finite and non-renewable resource. Once a site is destroyed, its information is lost forever. Protecting archaeological remains allows us to better understand our past, our landscape and the people who lived here before us.

All Bord na Móna staff and contractors must therefore ensure that archaeological features, buffer zones and potential stray finds are treated with care and protected at all times during operations.

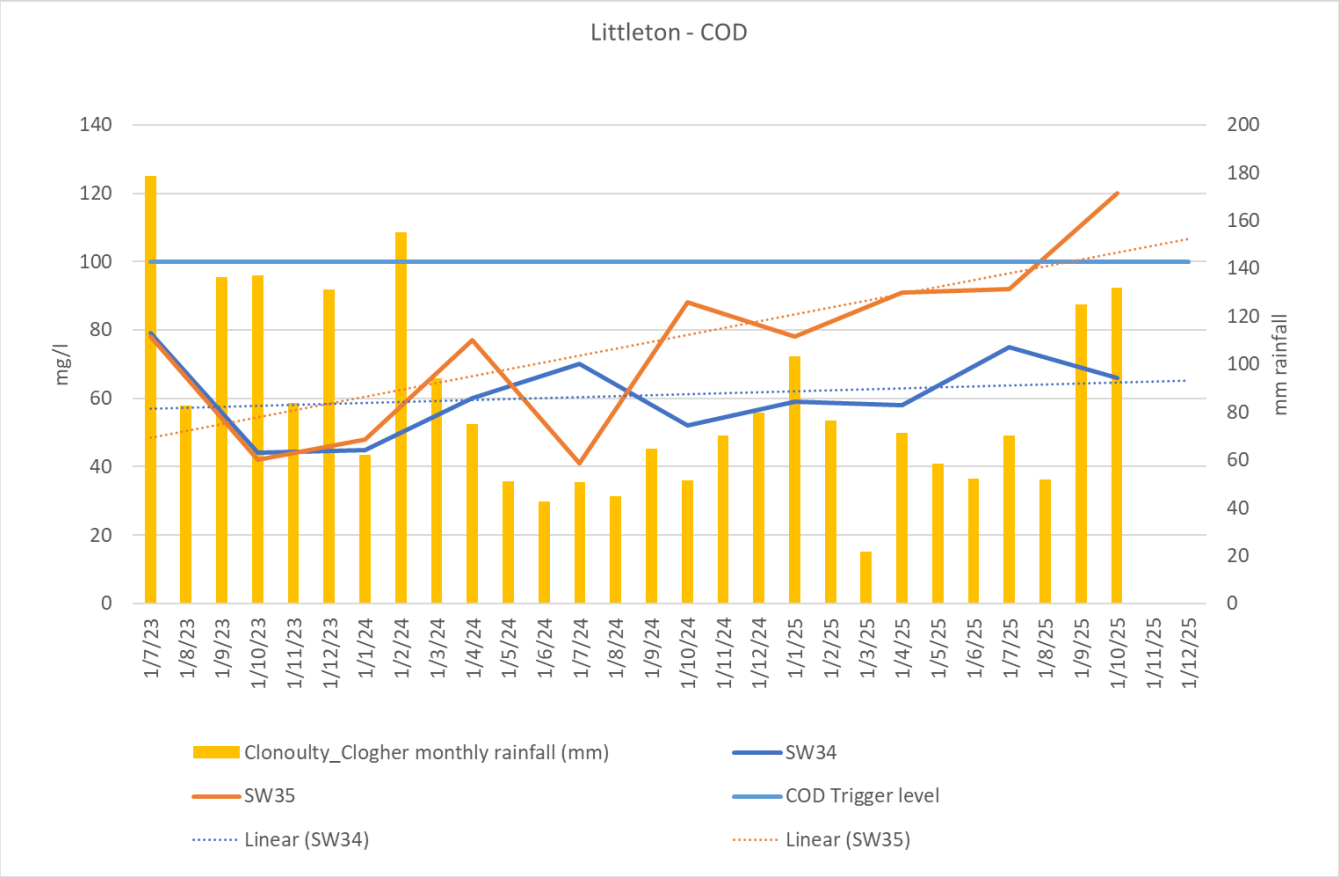
Your Archaeological Liaison Officer is Enda McDonagh

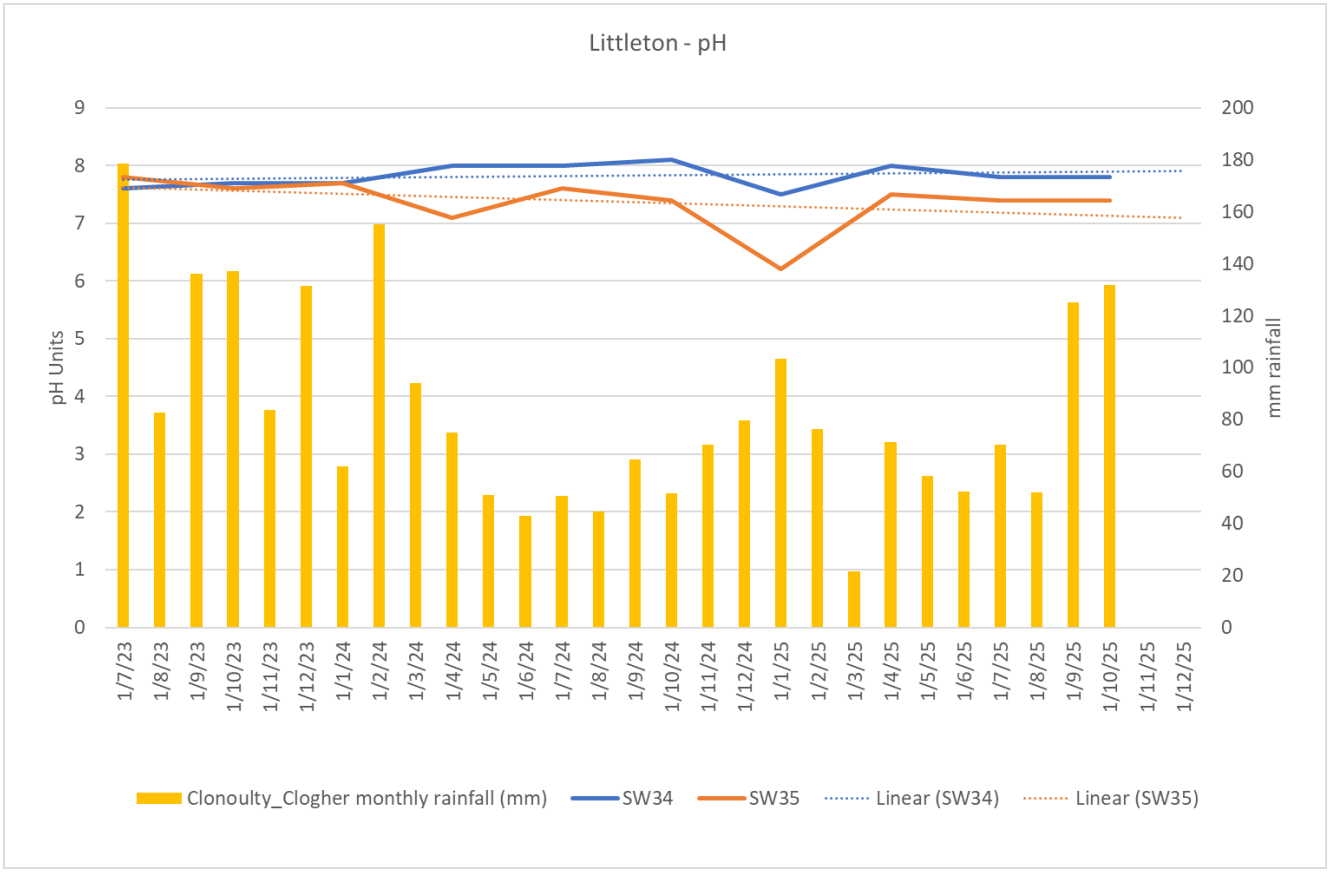
Revision Index			
Revision	**Date**	**Description of change**	**Approved**
1	13/19/2020	First release	EMcD
1	24/11/2025	Change to logo and header	SG

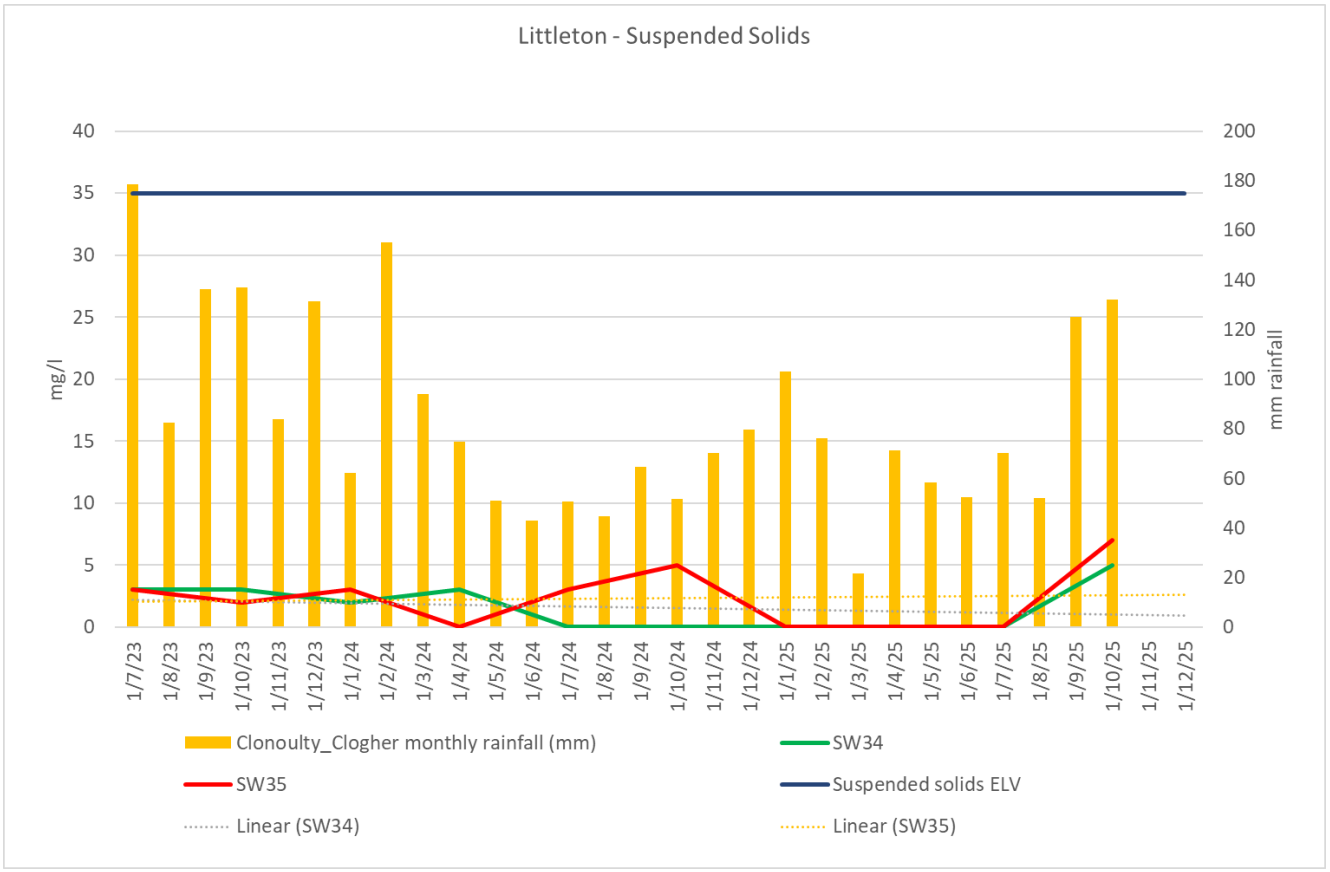
2	10/03/2026	Addition of Archaeological Awareness and change of SOP Title	EMcD

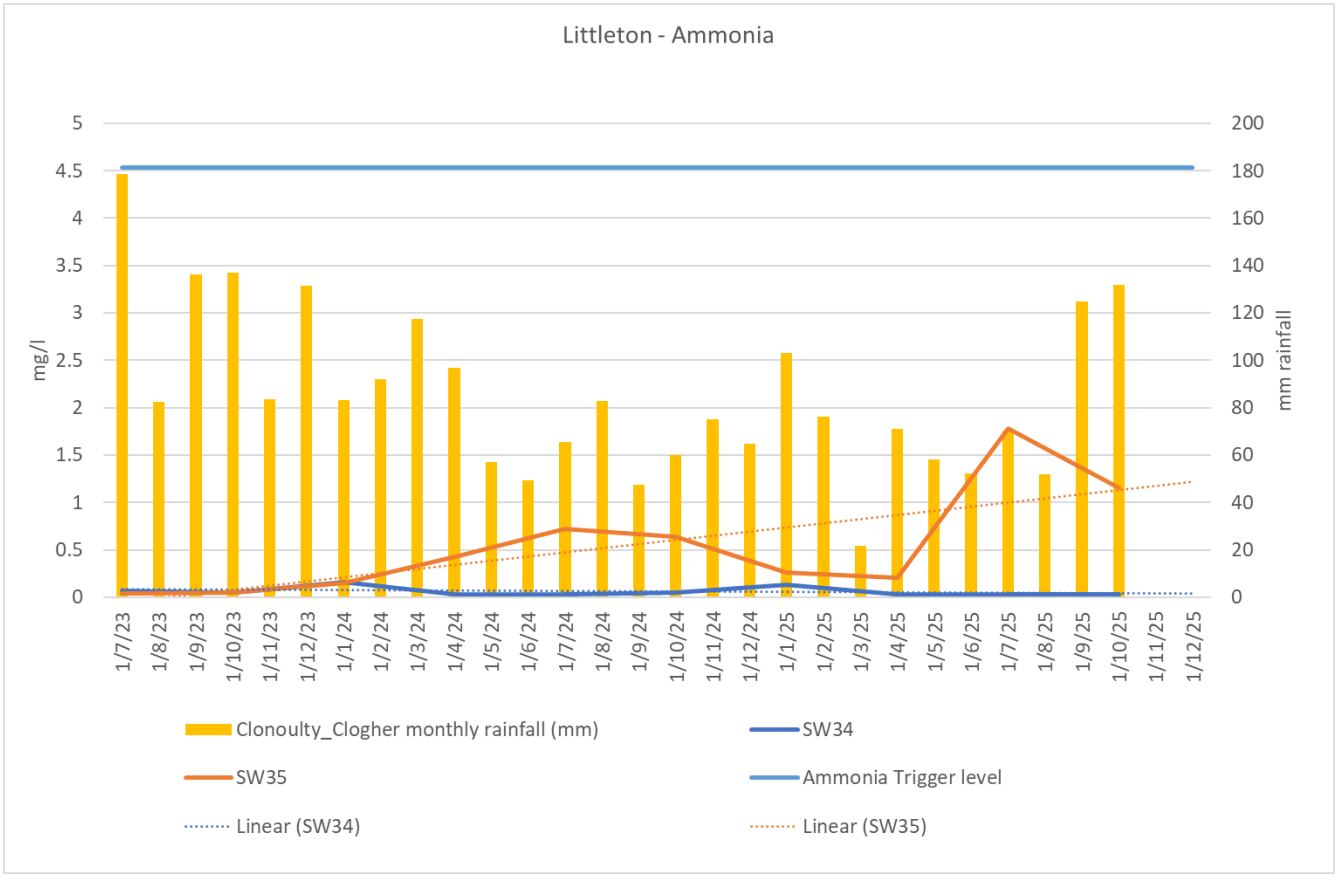
APPENDIX XI: WATER QUALITY MONITORING RESULTS FOR LITTLETON BOG

Water quality monitoring (2023-2025) indicates that suspended solids are well below the emission limit value and continuing to trend downwards, with ammonia trending upwards in one of the sites, as is COD, which would be indicative of naturally occurring nutrient, associated chemical oxygen demand and higher water retention periods. They remain below the associated trigger levels with one exceedance at SW 35 in October 2025. Ammonia levels would be indicative of background levels and would be expected to stabilise as the bogs rehabilitates further and bare peat gets revegetated. The following graphs provide the water quality monitoring results for 2 of the surface water emission locations at Littleton from July 2023 onwards.




Littleton - pH
pH Units
mm rainfall
0
1
2
3
4
5
6
7
8
9
0
20
40
60
80
100
120
140
160
180
200
1/7/23
1/8/23
1/9/23
1/10/23
1/11/23
1/12/23
1/1/24
1/2/24
1/3/24
1/4/24
1/5/24
1/6/24
1/7/24
1/8/24
1/9/24
1/10/24
1/11/24
1/12/24
1/1/25
1/2/25
1/3/25
1/4/25
1/5/25
1/6/25
1/7/25
1/8/25
1/9/25
1/10/25
1/11/25
1/12/25
Clonoulty_Clogher monthly rainfall (mm)
SW34
SW35
Linear (SW34)
Linear (SW35)


Littleton - Suspended Solids
mg/l
mm rainfall
0
5
10
15
20
25
30
35
40
0
20
40
60
80
100
120
140
160
180
200
1/7/23
1/8/23
1/9/23
1/10/23
1/11/23
1/12/23
1/1/24
1/2/24
1/3/24
1/4/24
1/5/24
1/6/24
1/7/24
1/8/24
1/9/24
1/10/24
1/11/24
1/12/24
1/1/25
1/2/25
1/3/25
1/4/25
1/5/25
1/6/25
1/7/25
1/8/25
1/9/25
1/10/25
1/11/25
1/12/25
Clonoulty_Clogher monthly rainfall (mm)
SW34
SW35
Suspended solids ELV
Linear (SW34)
Linear (SW35)


Littleton - Ammonia
mg/l
mm rainfall
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
200
180
160
140
120
100
80
60
40
20
0
1/7/23
1/8/23
1/9/23
1/10/23
1/11/23
1/12/23
1/1/24
1/2/24
1/3/24
1/4/24
1/5/24
1/6/24
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SW34
SW35
Ammonia Trigger level
Linear (SW34)
Linear (SW35)

Littleton Bog
Rehab Plan
GIS Map Book
2026

Document Control Sheet

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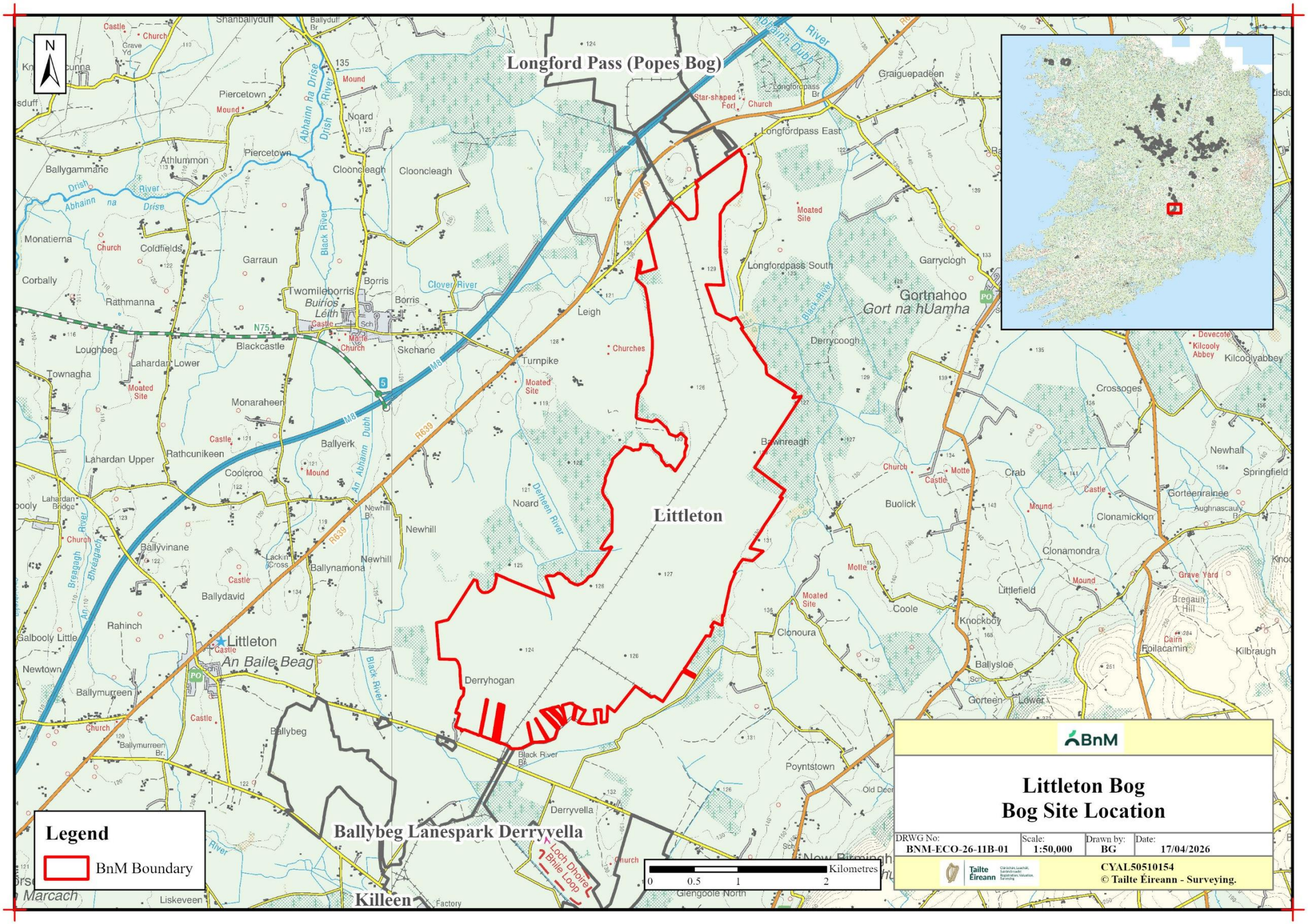
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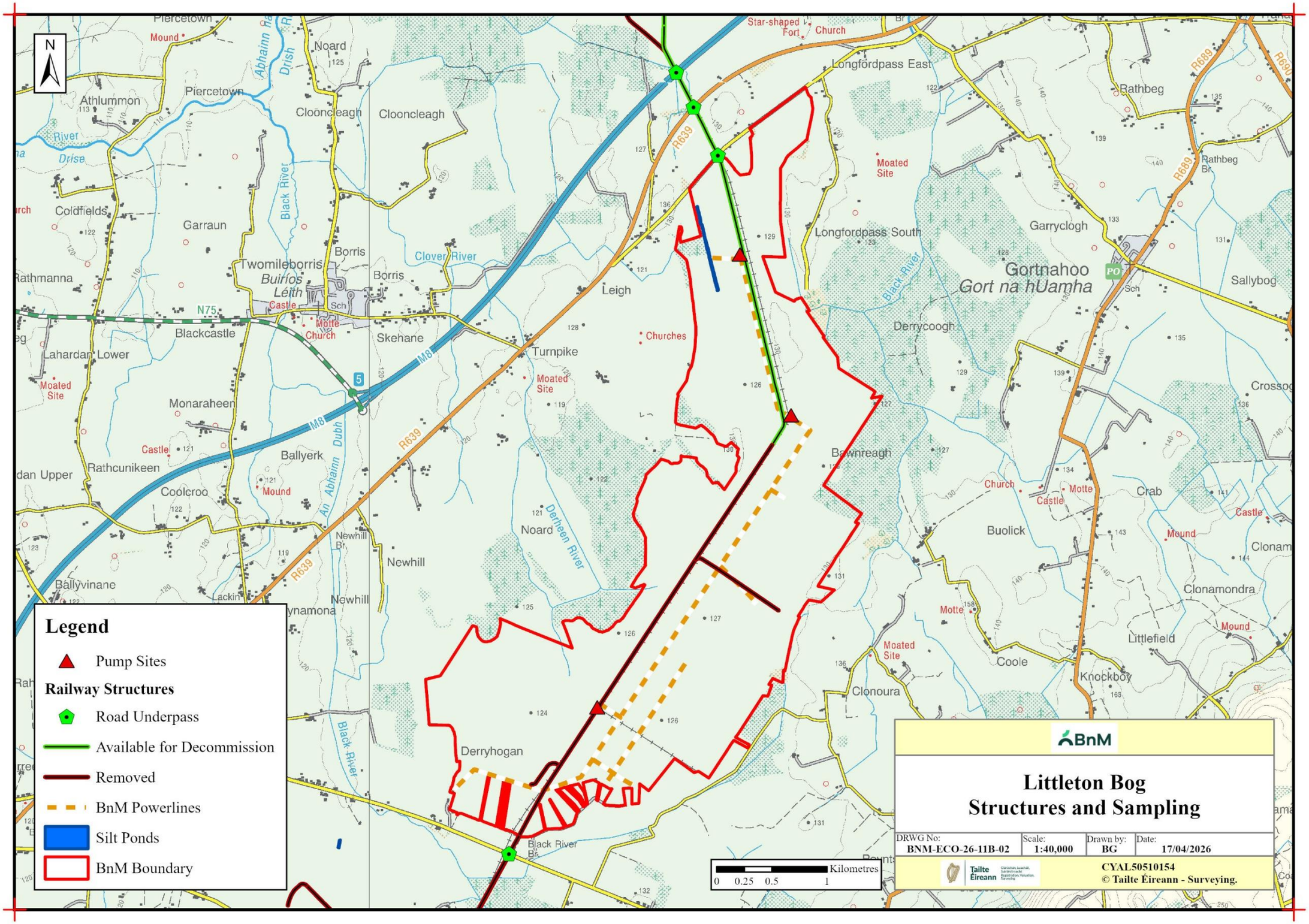
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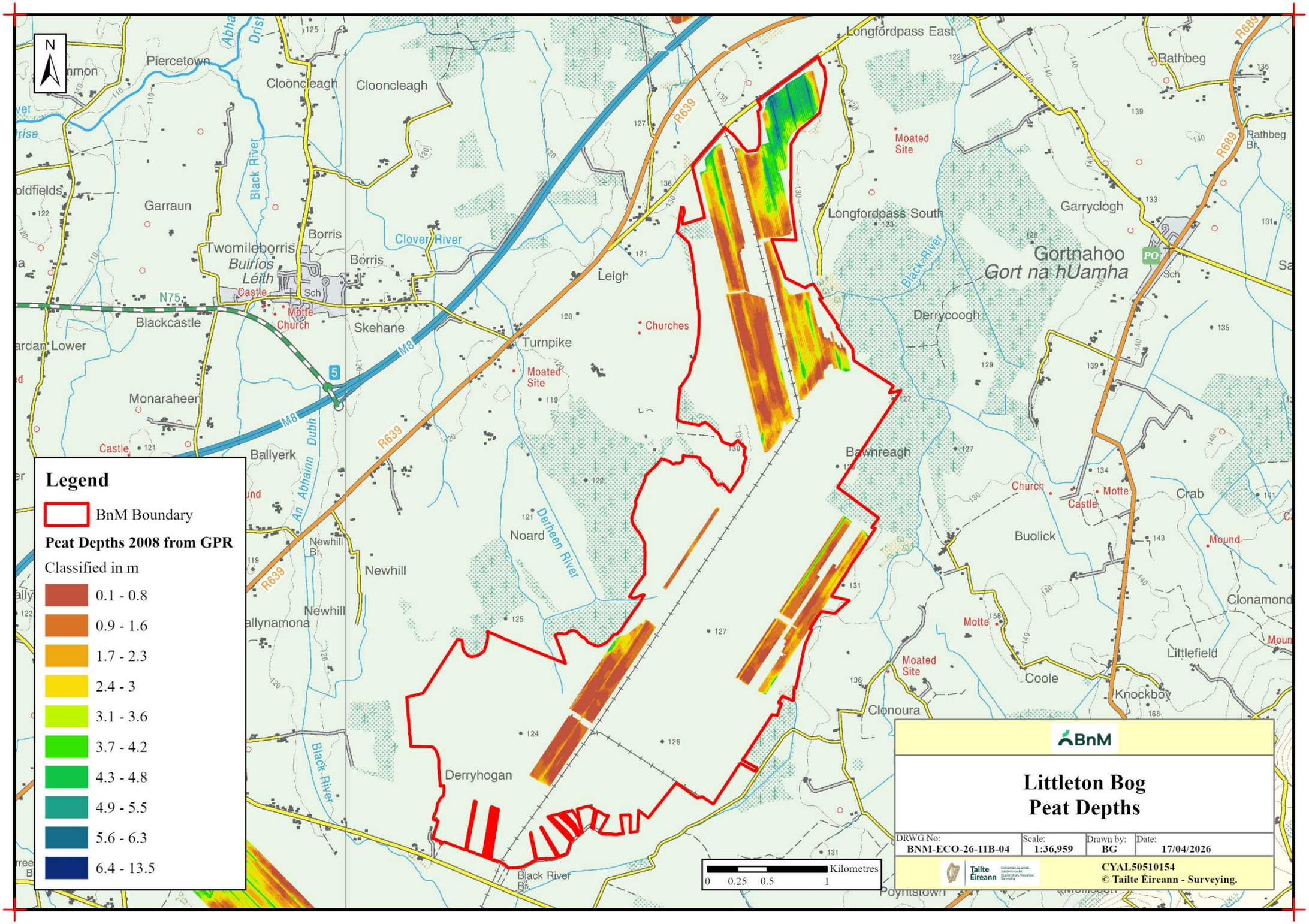
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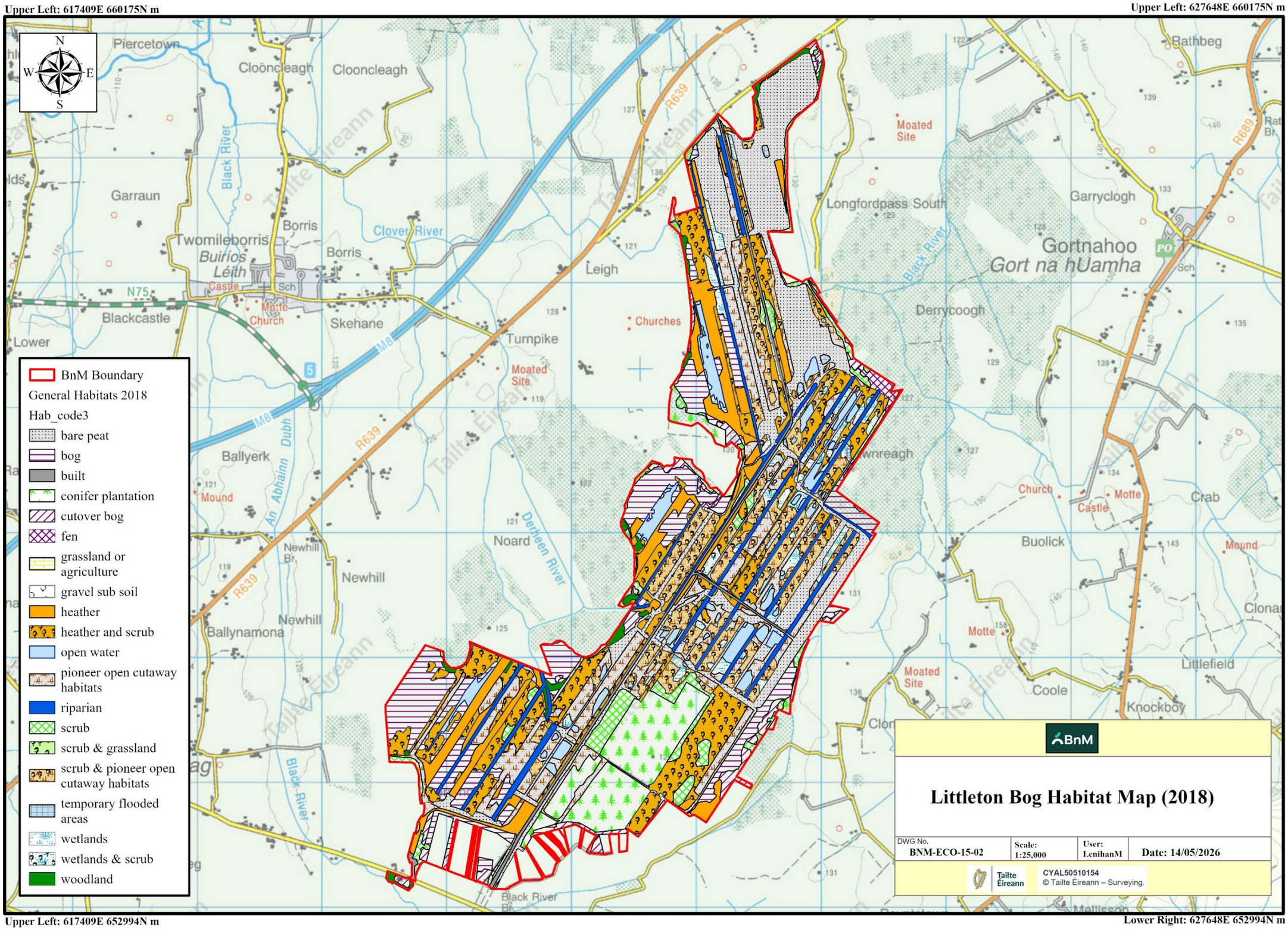


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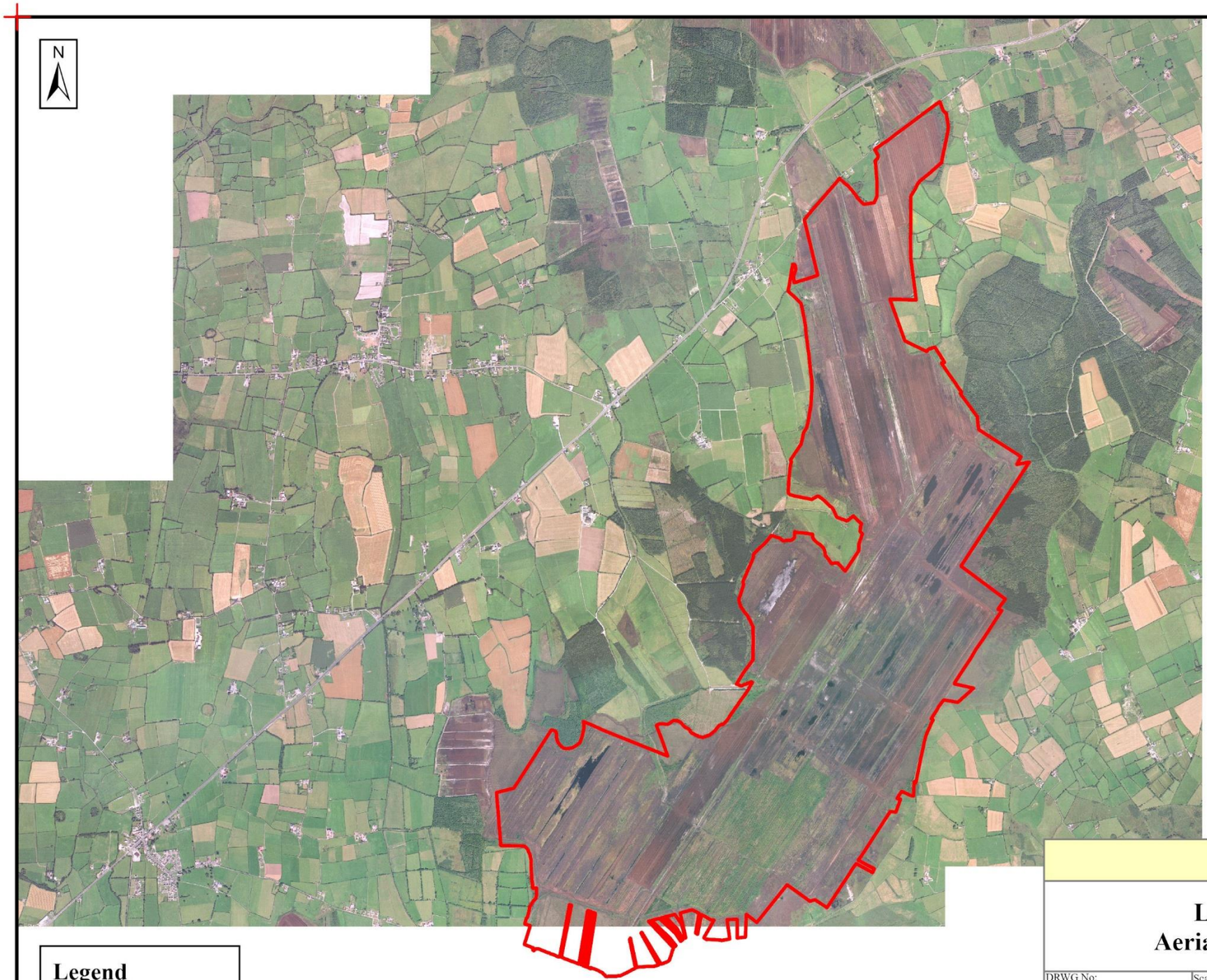


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Littleton Bog
Aerial Imagery 2000

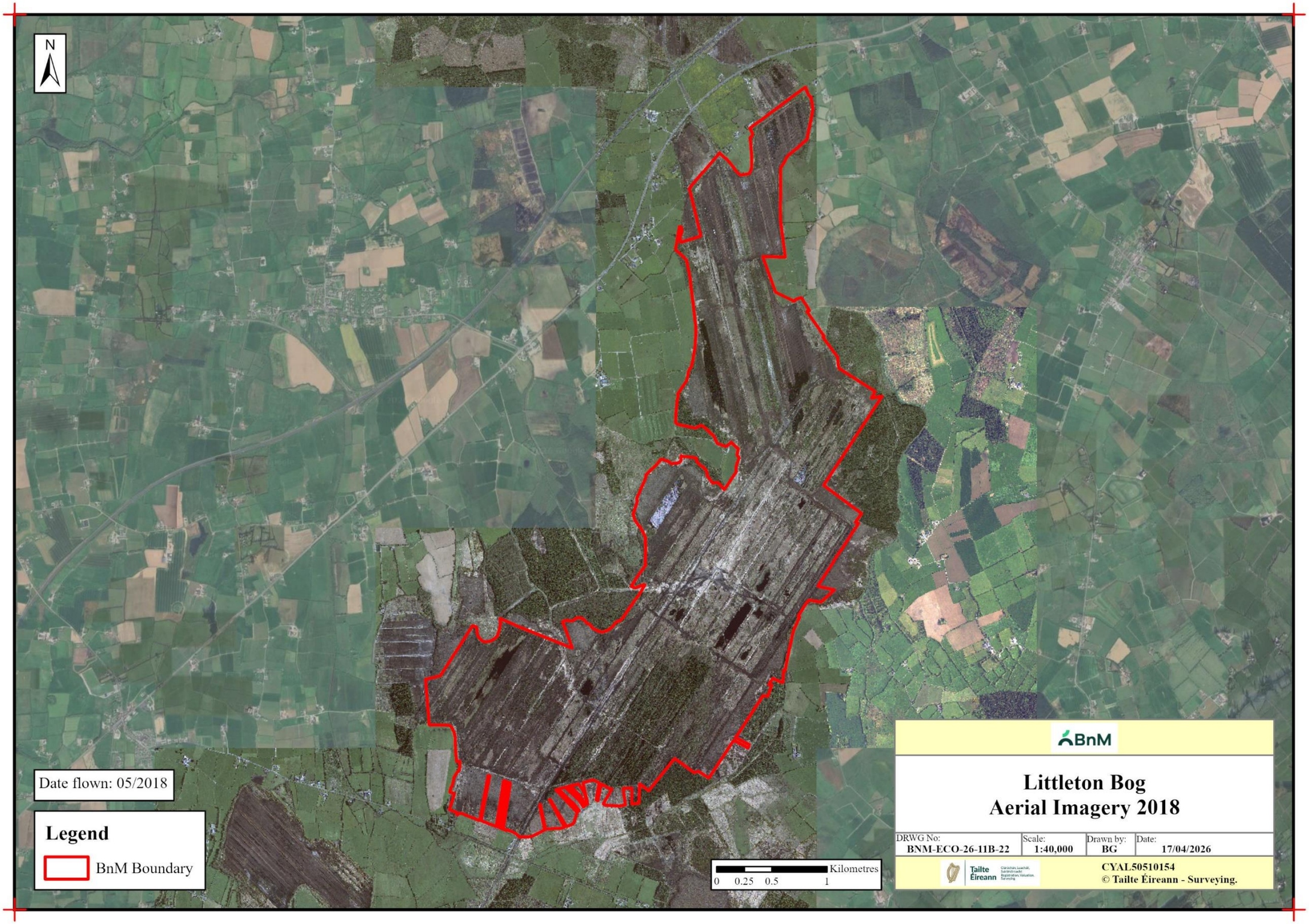
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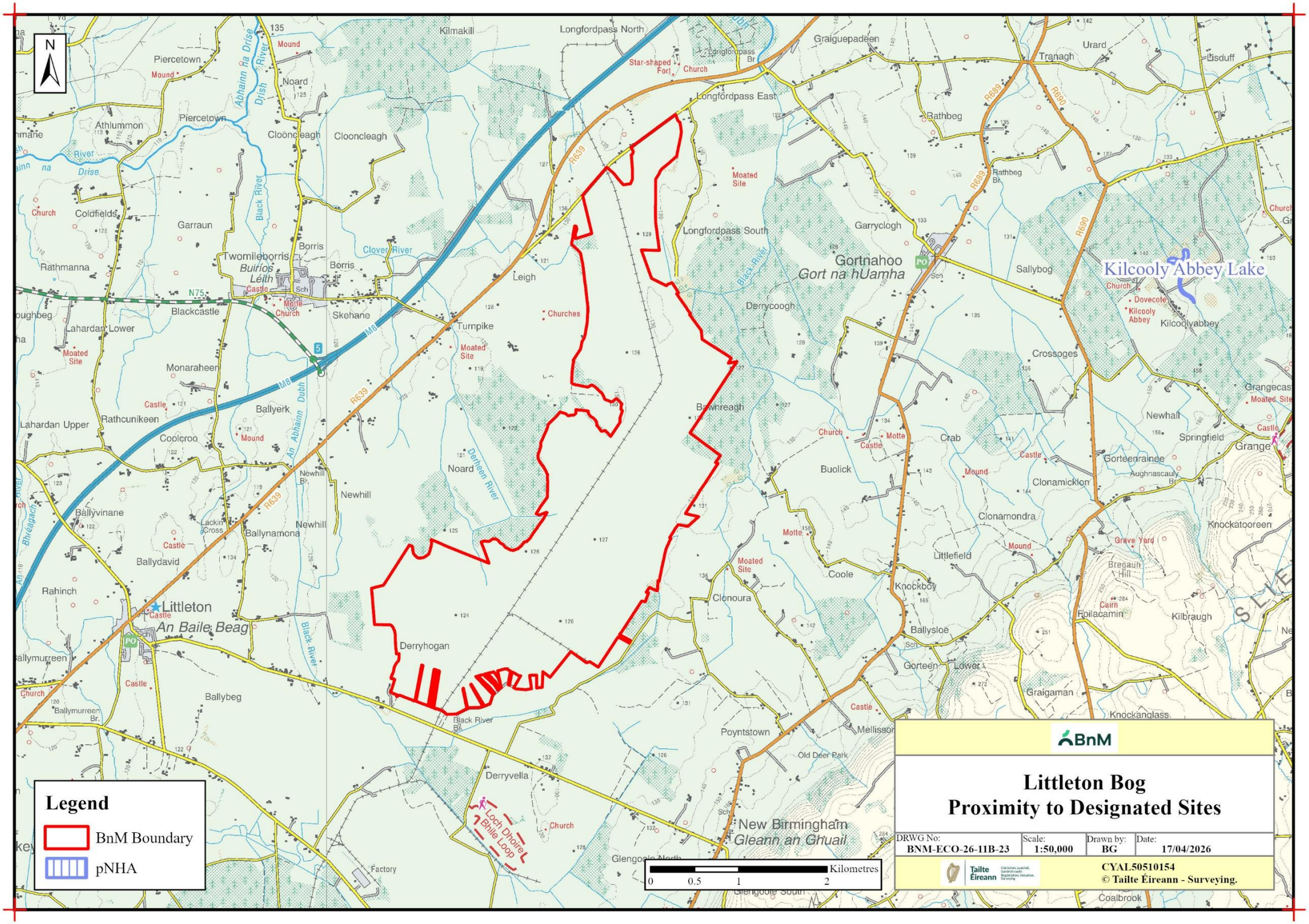
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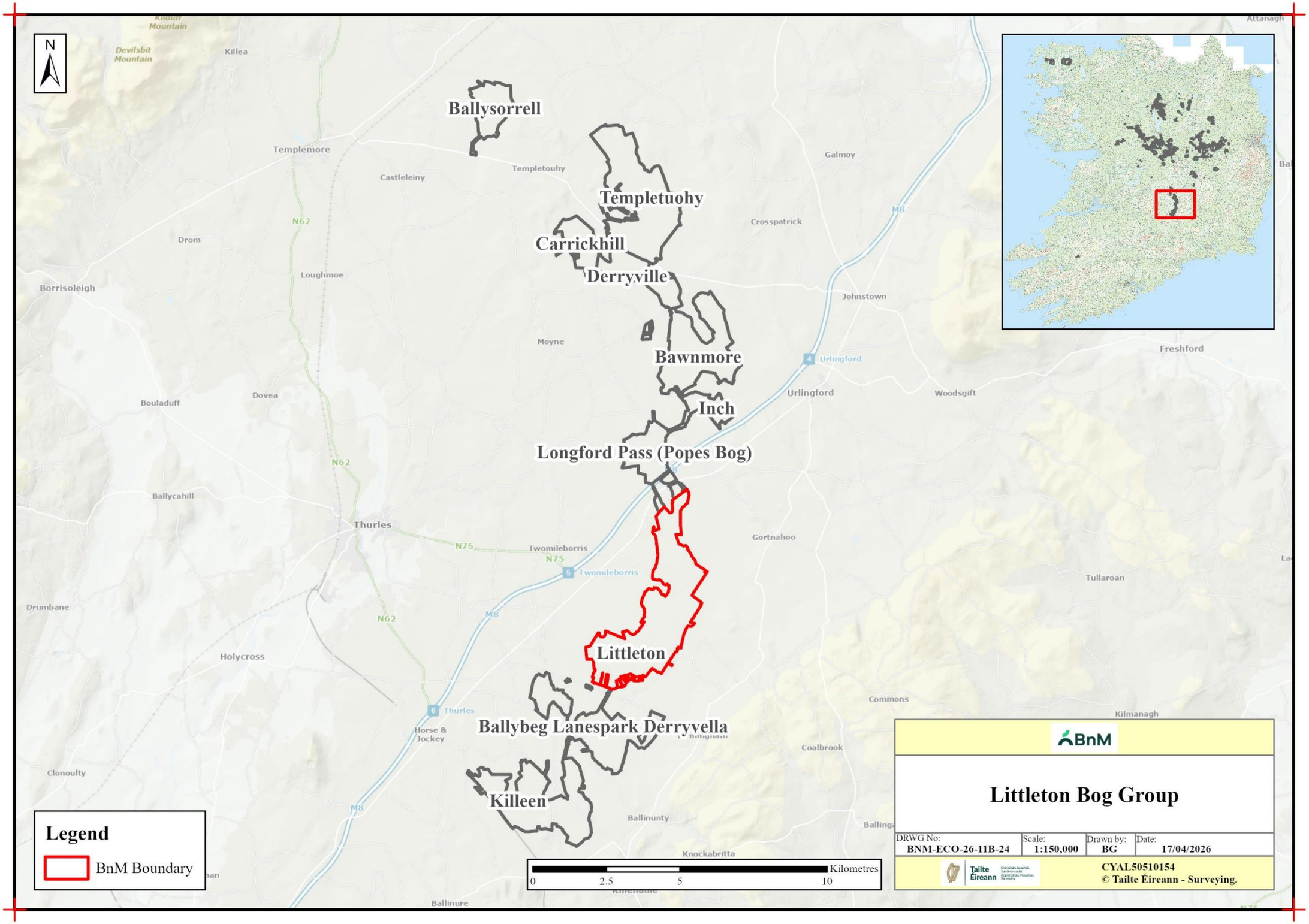
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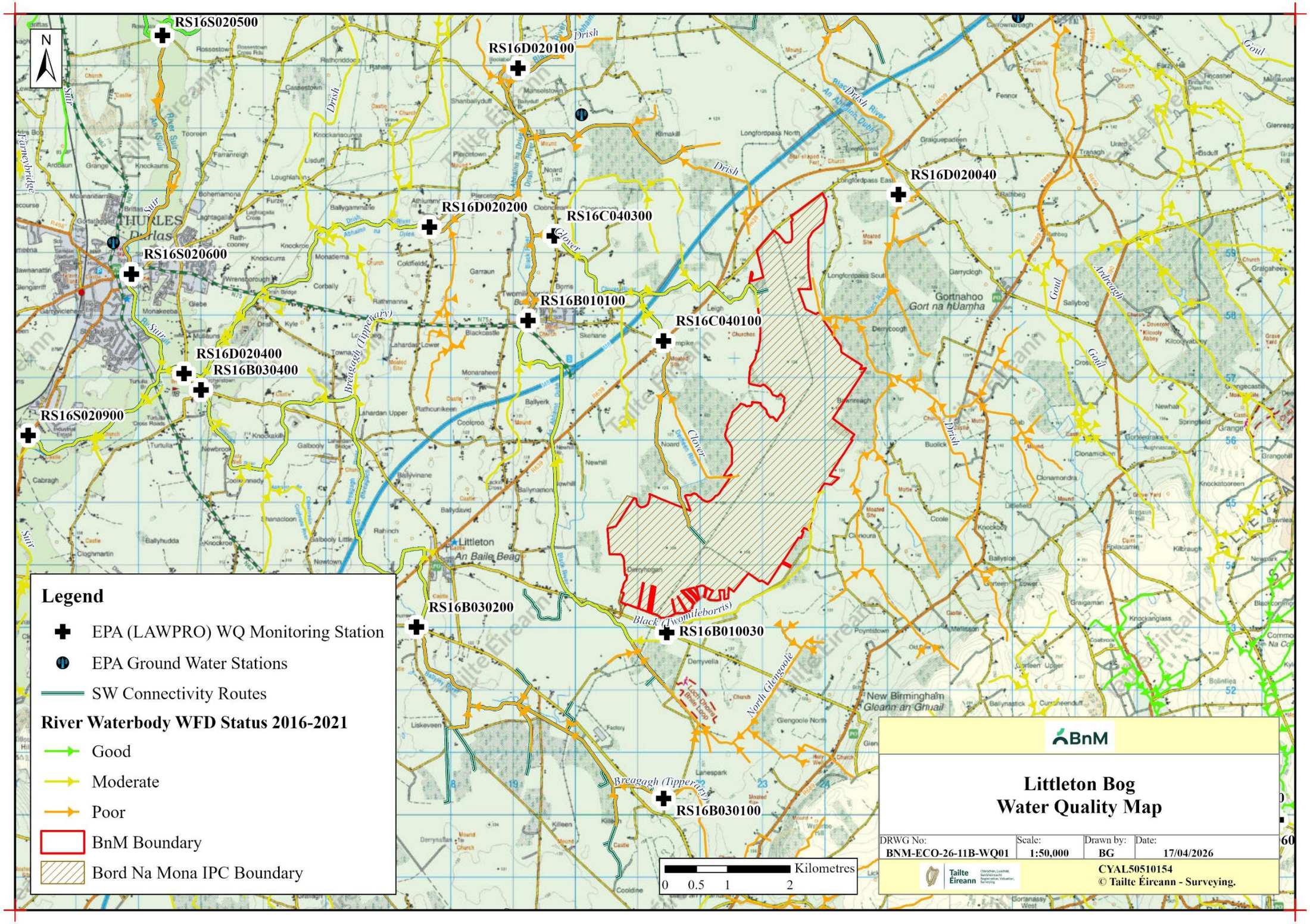
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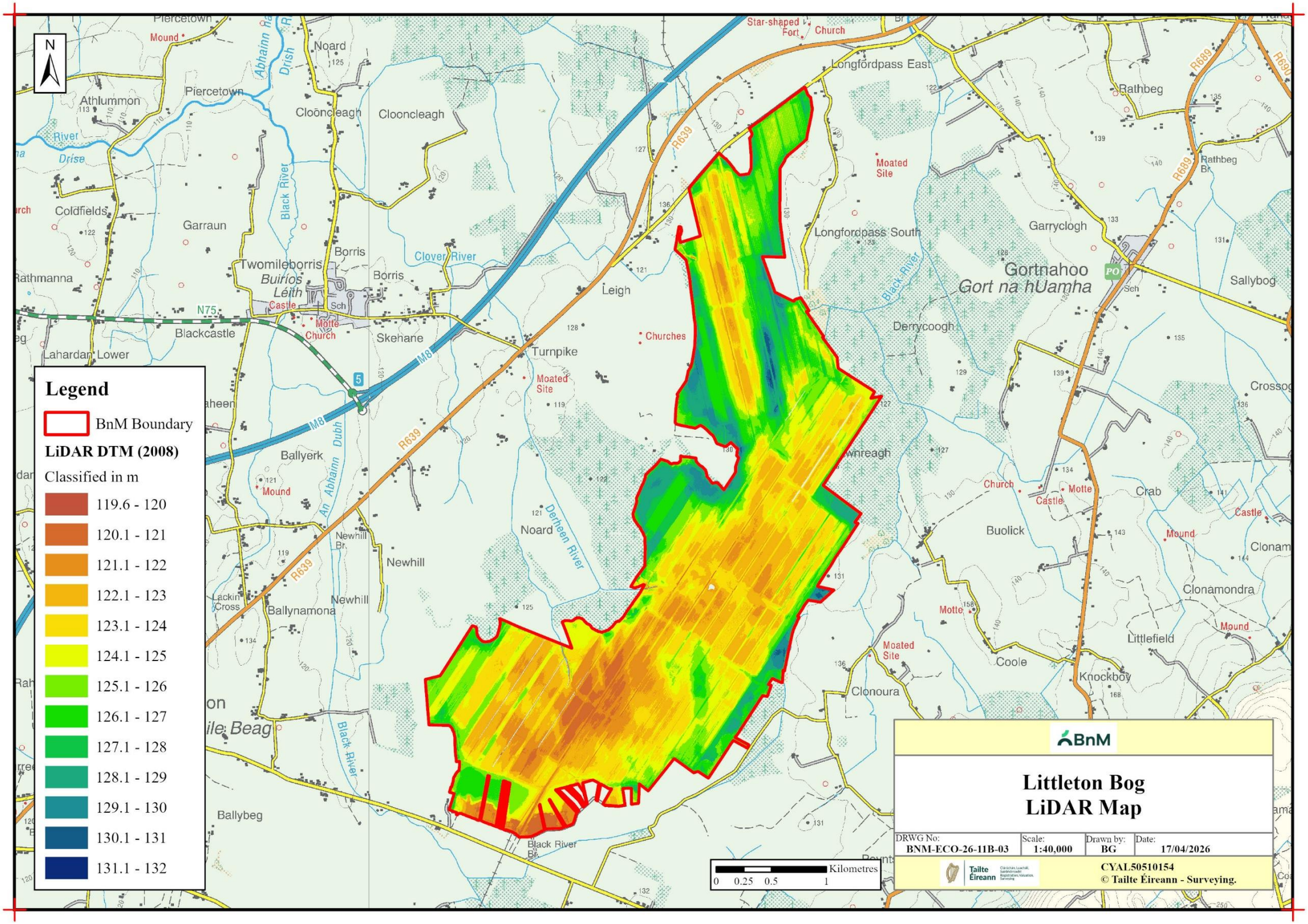
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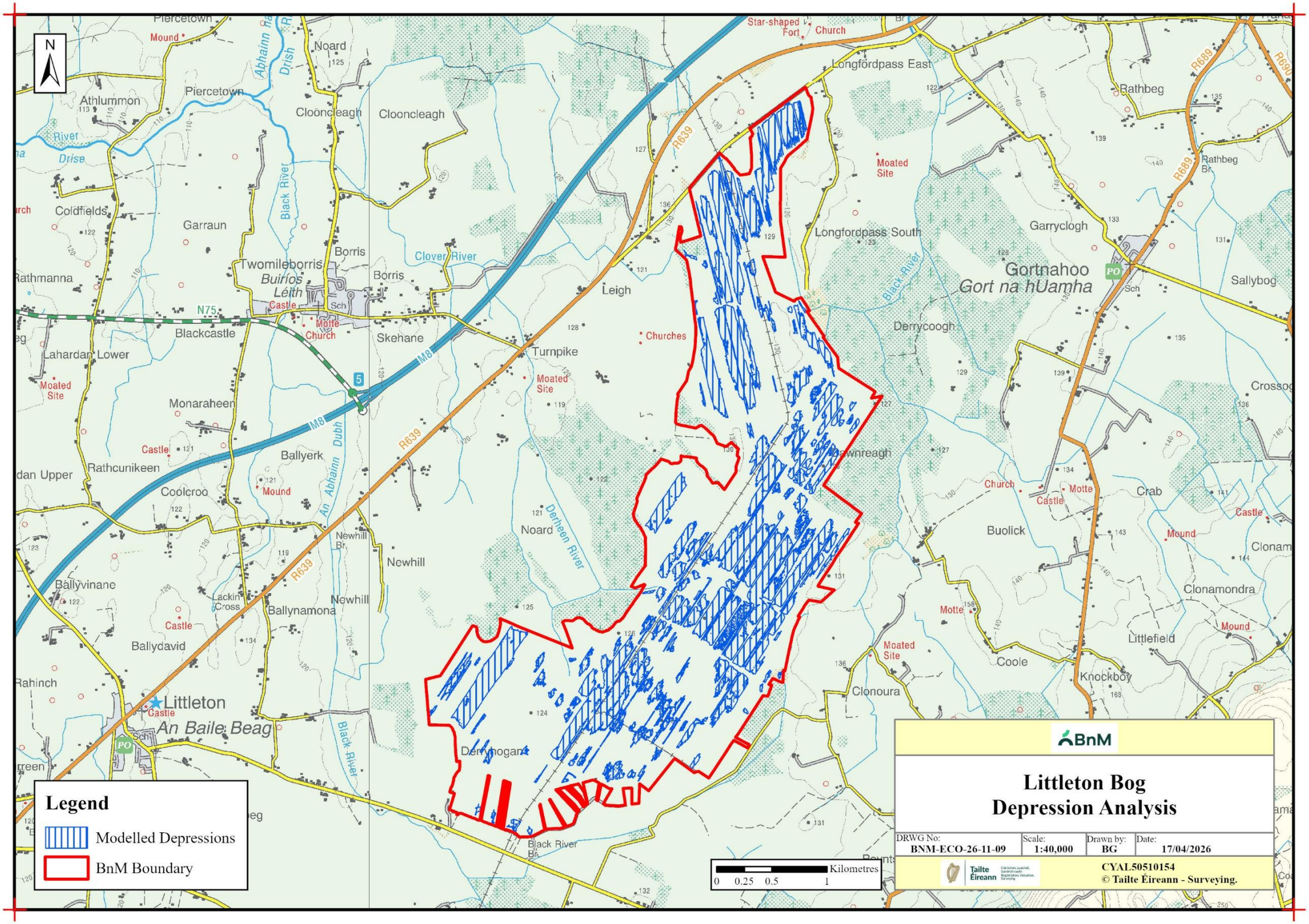
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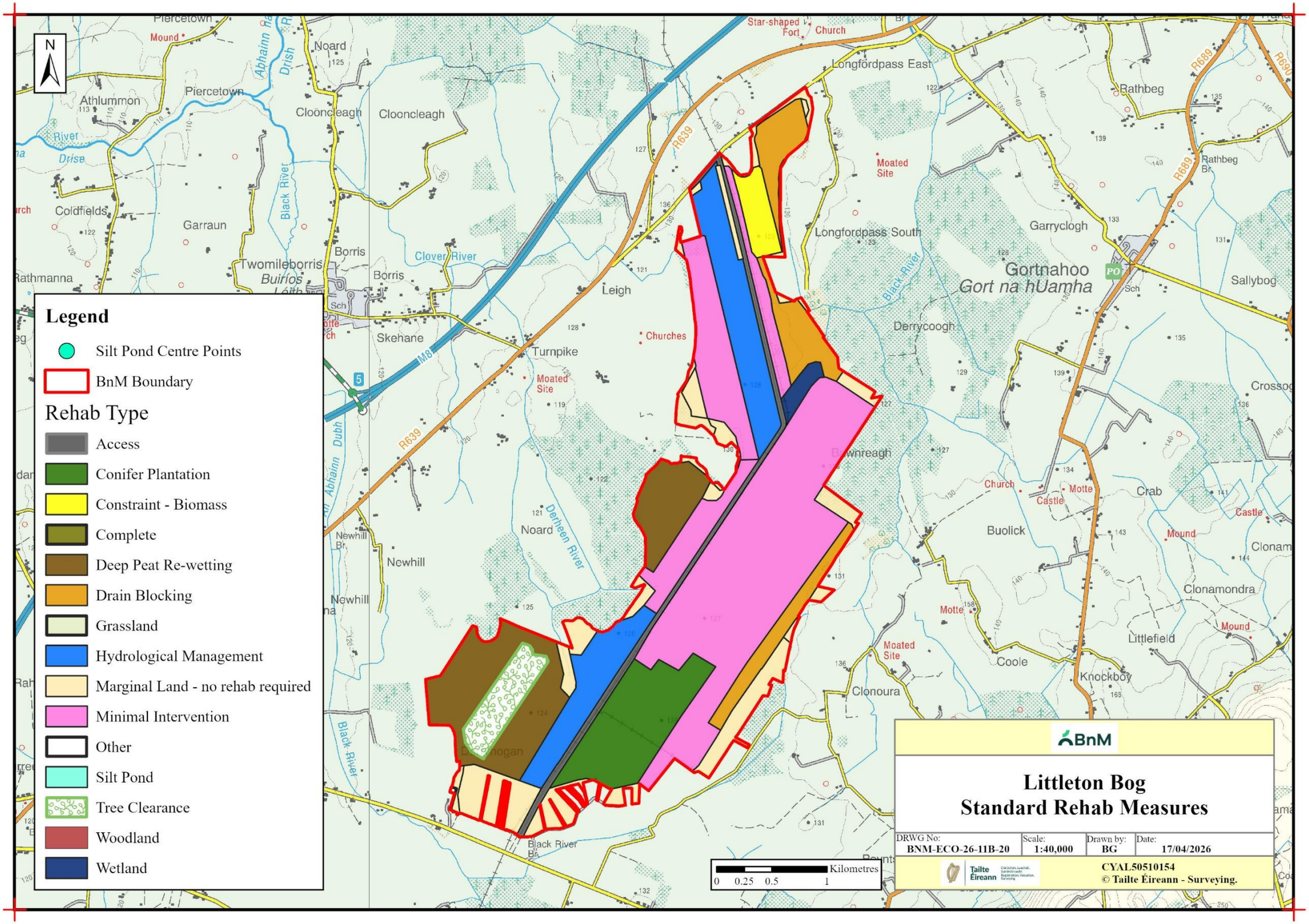
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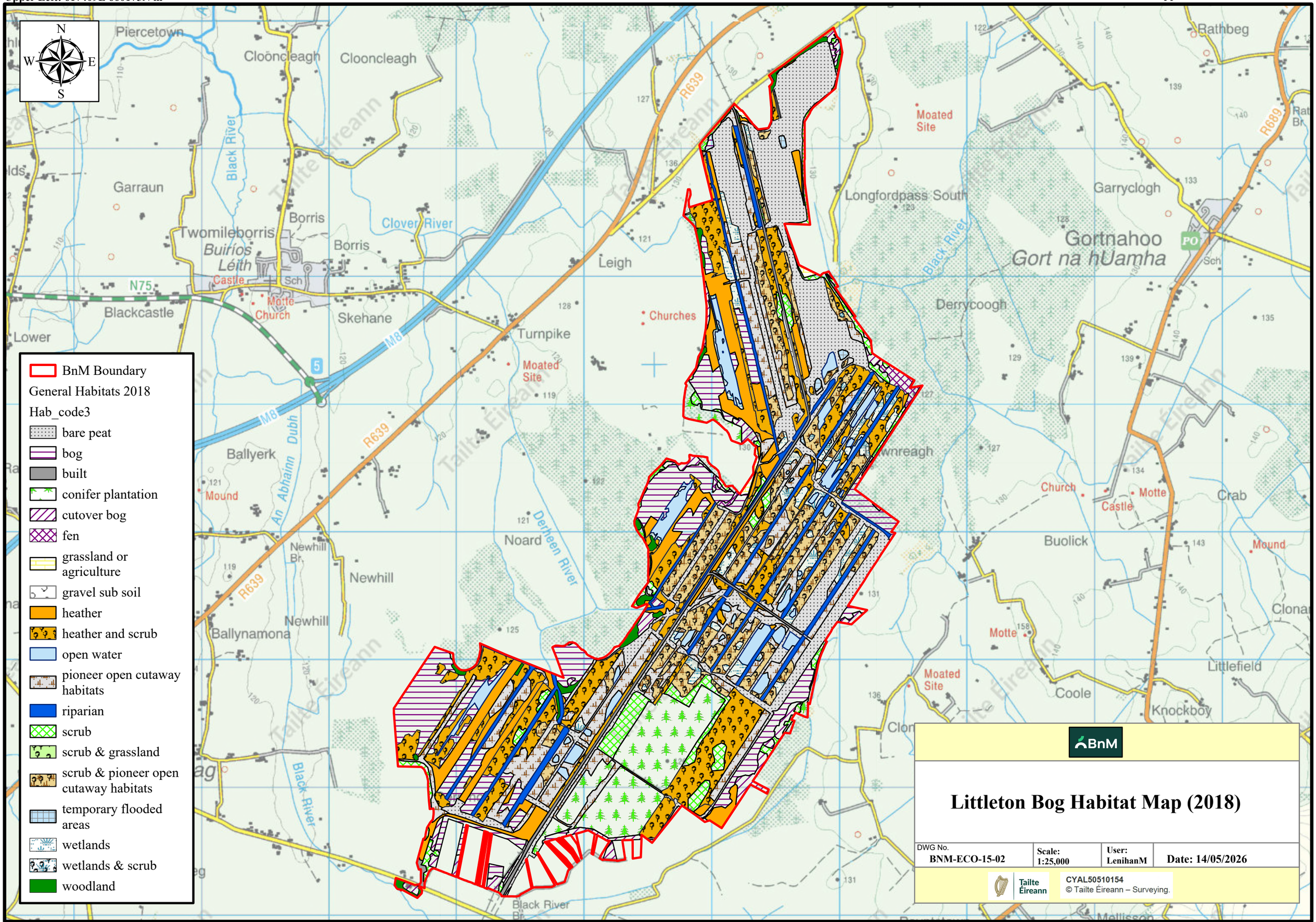
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Littleton Bog Habitat Map (2018)

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Longford Pass Bog

Longford Pass Bog

Cutaway Bog Decommissioning and Rehabilitation Plan

2026

This document seeks to address the requirements of Condition 10.2 of IPC Licence Ref. P0499-01:

> "*The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area.*"

This licence condition requires BnM agree with the EPA the measures that will provide for rehabilitation, i.e., stabilisation of Longford Pass Bog upon cessation of peat production and compliments the licence requirement to decommission the site.

***Rehabilitation** generally comprises site stabilisation with natural colonisation with or without targeted management.*

Industrial peat production has now fully ceased at Longford Pass Bog. A rehabilitation programme was carried out at Longford Pass Bog in 2018-2021.

BnM have defined the key rehabilitation outcome at Longford Pass Bog as environmental stabilisation, re-wetting and setting the bog on a trajectory towards development of naturally functioning peatland and wetland habitats.

Any consideration of any other future after-uses for Longford Pass Bog will be conducted in adherence to the relevant planning guidelines and consultation with relevant authorities and will be considered within the framework of this rehabilitation plan.

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NON-TECHNICAL SUMMARY

- BnM (formerly known as Bord na Móna) is updating the rehabilitation plan prepared in 2018 for Longford Pass Bog, located in Co. Tipperary.
- BnM Industrial peat harvesting ceased at Longford Pass Bog in 2017.
- Longford Pass Bog was in industrial peat production since 1940 and had a pump-based drainage regime. Longford Pass Bog initially was developed as a sod turf production site. It then supplied peat to the Littleton Briquette Factory.
- In 2017, BnM announced the closure of the Littleton Briquette factory and the cessation of industrial peat production in a number of cutaway bogs within the Littleton Bog Group.
- A rehabilitation programme was carried out by BnM between 2018-2021 (Phase 1) with targeted drain-blocking through the site.
- Large bare peat areas were re-wetted with intensive drain-blocking.
- Longford Pass Bog had a partially pumped drainage regime until the pump was permanently depowered in 2022 so pumping across the site has now ceased. This has contributed to the development of large wetlands.
- Some areas were constrained from rehabilitation and re-wetting including boundary drains and some areas adjacent to the new motorway.
- The site is now developing a mosaic of pioneer cutaway habitats and there are large areas of open shallow water. Bare peat cover is shrinking as pioneer vegetation cover establishes. Other sections that ceased peat extraction at an earlier stage have more developed vegetation and pioneer habitats.
- This rehabilitation plan has been prepared by BnM as part of obligations to carry out peatland rehabilitation via an IPC licence issued by the Environmental Protection Agency.
- The key objective of peatland rehabilitation is environmental stabilisation. This means developing habitats and vegetation back onto the bare peat (putting a “skin” back onto the peat), and minimising effects to downstream waterbodies.
- In general, soggy ground conditions are preferred. This means the remaining peat is wet and that plants that prefer wetter conditions, like Bog Cotton will thrive.
- Some sections with deeper residual peat have the capacity to regrow *Sphagnum* moss again, where there are suitable hydrological conditions. *Sphagnum* is a key species for restoring naturally functioning raised bog conditions.
- A project called the BnM/Coillte Midlands Native Woodland Project has been proposed for Longford Pass Bog. The main objective of this proposed project is to develop and enhance native woodland in areas of cutaway that would remain naturally dry, developing woodland habitat that would naturally complement wetland and peatland habitats already developing across the bog. This proposed project has not been approved by the Forest Service yet. The area proposed as part of the native woodland project will be constrained from additional rehabilitation.
- Rehab measures included drain-blocking and other measures to raise water levels to the surface of the bog, thus encouraging the development of naturally functioning cutaway peatland habitats.
- These rehabilitation measures were planned by a team consisting of expert ecologists and engineers. It is a guiding principle of BnM rehabilitation planning that no actions or activities will be undertaken that would negatively impact on adjacent land. No boundary drains will be blocked. Water will still leave the bog via the existing outlets.

- Peatland rehabilitation of this bog will bring a range of benefits to the local community via improvements to the local landscape and is also important for supporting national policies and strategies in relation to reduction of carbon emissions from these peatlands, supporting biodiversity and improvements to water quality.
- Rehabilitation at Littleton Bog will result in improved water quality, climate benefits with the reduction of carbon emissions and enhanced biodiversity when the residual peat is re-wetted.
- Many BnM bogs cannot be restored back to raised bog, as the majority of peat has been removed and the environmental conditions have been modified. However other natural habitats will develop, like poor fen and regenerating wet deep peat vegetation communities (on deeper peat); and wetlands with Reedbeds and Birch woodland on shallower peat. In time a naturalised peatland can be developed.
- It will take some time for vegetation and habitats to fully develop at Longford Pass Bog, and a peatland ecosystem to be restored. However, it is expected that any bare peat will be developing pioneer habitats after 5-10 years.
- The development of a range of habitats at Longford Pass Bog will support biodiversity including plants, insects, birds and mammals. This includes some species that are rare and protected in the wider landscape.
- This peatland rehabilitation plan does not consider future after-use or development. BnM continually reviews its land-bank to consider future commercial or industrial developments. Any other proposed development will be planned in adherence to relevant planning guidelines and will consider the rehabilitation and the condition of the bog.

1. INTRODUCTION

BnM (formerly known as Bord na Móna) operates under IPC Licence issued and administered by the EPA to extract peat within the Littleton Bog Group (Ref. P0499-01) (see Appendix I for details of the bog areas within this Group). As part of Condition 10.2 of this licence, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area. Longford Pass Bog is located in Co. Tipperary.

This document seeks to address the requirements of Condition 10.2 of IPC Licence Ref. P0499-01:

> "*The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area.*"

It also seeks to outline measures to optimise climate action and other ecosystem services benefits, mainly through hydrological management.

This plan is a specific rehabilitation plan for the bog and outlines:

- Description of site management and status.
- Main issues and approaches to rehabilitation.
- Consultation to date with interested parties.
- Interaction with other policy and legislative frameworks (Appendix V).
- The planned rehabilitation goals and outcomes.
- The scope of the rehabilitation plan.
- Criteria which define the successful rehabilitation and key targets to validate rehabilitation.
- Proposed rehabilitation actions.
- Proposed timeframe to implement these measures.
- Budget and Costings.
- Associated aftercare, maintenance, and monitoring.

Note: This plan should be read in conjunction with the accompanying Map book.

Longford Pass Bog is part of the Littleton Bog Group. BnM made the decision to close this brickette factory in 2017 and to rehabilitate the Littleton Bog group. Longford Pass Bog was rehabilitated by BnM during 2018-2021.

This updated rehabilitation plan supersedes the previous rehabilitation plan prepared and submitted to the EPA in 2018.

1.1 Constraints and Limitations

This document covers the area of **Longford Pass Bog** shown in drawing number *BNM- ECO-26-11-01: Site Location Map*.

Some margins of Longford Pass Bog were developed as private mature conifer forestry. This is mapped as a constraint.

There are no known rights of way around the margins of Longford Pass Bog. None of the rehabilitation proposed as part of this plan will affect these rights of way. Part of the site has been leased to Thurles Gun Club and this area has been mapped as a constraint on the rehabilitation plan.

Rehabilitation in other areas of the bog may also be constrained due to other property issues or archaeological features. There is known archaeology at Longford Pass Bog.

2. METHODOLOGY

This rehabilitation plan was developed with a combination of desktop and field surveys, consultations with internal and external stakeholders. The development of this rehabilitation plan considered recently published guidance issued by the EPA, '*Guidance on the Process of Preparing and Implementing a Bog Rehabilitation Plan' (EPA, 2020)*.

The ecological information and site information collected during the BnM ecological baseline survey, additional confirmatory site visits (covering the period 2010 to 2025 inclusive) and monitoring and desktop analysis forms the basis for the development of the rehabilitation plan for the bog, along with:

- Experience of 40 years of research on the after-use development and rehabilitation of the Bord na Móna cutaway bogs (Clarke, 2010; Bord na Móna, 2016)
- Significant international engagement during this period with other counties in relation to best practice regarding peatland rehabilitation and after-use through the International Peat Society and the Society for Ecological Restoration (Joosten & Clarke, 2002; Clarke & Rieley, 2010; Gann *et al*., 2019)
- Consultation and engagement with internal and external stakeholders
- GIS Mapping
- BnM drainage surveys
- Bog topography and LIDAR data
- Previous research studies on site
- Hydrological modelling

2.1 Desk Study

The desk study involved collecting all relevant environmental and ecological data for the study area. The development of the rehabilitation plan also takes account of research, experience and engagement with other peatland restoration and rehabilitation projects and peatland research including Irish, UK, European and International best practice guidance (full citations are in the References Section):

- Anderson *et al*. (2017). An overview of the progress and challenges of peatland restoration in Western Europe.
- Barry, T.A. *et al*. (1973). A survey of cutover peats and underlying mineral soils. Soil Survey Bulletin No. 30. Dublin, Bord na Móna and An Foras Taluntais.
- Bonn *et al*. (2017). Peatland restoration and ecosystem services- science, policy and practice.
- Carroll *et al*. (2009). *Sphagnum* in the Peak District. Current Status and Potential for Restoration. Moors for the Future Report No 16.
- Clark & Rieley (2010). Strategy for responsible peatland management.
- Eades *et al*. (2003). The Wetland Restoration Manual.
- Farrell & Doyle (2003). Rehabilitation of Industrial Cutaway Atlantic Blanket Bog, NW Mayo, Ireland.
- Gann *et al*. (2019). International Principles and Standards for the practice of Ecological Restoration.
- Hinde *et al*. (2010). *Sphagnum* re-introduction project: A report on research into the re-introduction of *Sphagnum* mosses to degraded moorland. Moors for the Future Research Report 18.
- Joosten & Clarke (2002). Wise Use of mires and peatlands – Background and Principles including a framework for Decision-making.

- Lindsay (2010). Peatbogs and Carbon: a Critical Synthesis to Inform Policy Development in Oceanic Peat Bog Conservation and Restoration in the Context of Climate Change.
- Mackin *et al*. (2017). Best practice in raised bog restoration in Ireland. Irish Wildlife Manuals, No. 99. National Parks and Wildlife Service,
- McBride *et al*. (2011). The Fen Management Handbook (2011), Scottish Natural Heritage.
- McDonagh (1996). Drain blocking by machines on Raised Bogs. Unpublished report for National Parks and Wildlife Service.
- NPWS (2017a). National Raised Bog Special Areas of Conservation management plan. Department of Arts, Heritage and the Gaeltacht.
- Pschenyckyj et al., (2021). Optimising Water Quality Returns from Peatland Management while Delivering Co-Benefits for Climate and Biodiversity. An Fóram Uisce.
- Quinty & Rochefort (2003). Peatland Restoration Guide, second edition. Canadian *Sphagnum* Peat Moss Association and New Brunswick Department of Natural Resources and Energy.
- Regan*, et. al.* (2020). Ecohydrology, Greenhouse Gas Dynamics and Restoration Guidelines for Degraded Raised Bogs. EPA Research Report. Prepared for the Environmental Protection Agency by Trinity College Dublin.
- Renou-Wilson *et al*. (2011). BOGLAND - Sustainable Management of Peatlands in Ireland. STRIVE Report No 75 prepared for the Environmental Protection Agency.
- Schouten (2002). Conservation and Restoration of Raised Bogs: Geological, Hydrological and Ecological Studies. Dúchas - The Heritage Service of the Department of the Environment and Local Government, Ireland.
- Thom, *et al*. (2019). Conserving Bogs – The Management Handbook, second edition.
- Wheeler & Shaw (1995). Restoration of Damaged Peatlands – with Particular Reference to Lowland Raised Bogs Affected by Peat Extraction.
- Wittram *et al*. (2015). A Practitioners Guide to Sphagnum Reintroduction. Moors for the Future Partnership.

Additional on-line resources were also incorporated into the desk study, including:

- Littleton Integrated Pollution Control Licence
- Littleton Annual Environmental Reports
- Review of the National Biodiversity Data Centre (NBDC) webmapper
- Inland Fisheries Ireland (IFI) Reports
- Environmental Protection Agency database (www.epa.ie)
- EPA Guidance on Requests for Alterations to a Licensed Industrial or Waste Activity
- Birdwatch Ireland online data (including I-WeBS and CBS datasets; www.birdwatchireland.ie)
- Geological Survey of Ireland - National Draft Bedrock Aquifer map
- Geological Survey of Ireland - Groundwater Database (www.gsi.ie)
- Historic Environment Viewer at https://webgis.archaeology.ie/historicenvironment/
- National Parks & Wildlife Services Public Map Viewer (www.npws.ie)
- Water Framework Directive catchments.ie/maps/ Map Viewer (www.catchments.ie)
- OPW Indicative Flood Maps (www.floodmaps.ie)
- CFRAM Preliminary Flood Risk Assessment (PFRA) maps (www.cfram.ie)
- River Basin Management Plan for Ireland 2022-2027

- BnM Annual Report 2025
- Spatial data in respect of Article 17 reporting, available online at https://www.npws.ie/maps-and-data/habitat-and-species-data/article-17

2.2 Consultation

A number of stakeholders have been identified during the course of BnM's rehabilitation and Biodiversity Action Plan activities and are contacted during the rehabilitation planning process for their views. See Section 4.

2.3 Field Surveys

BnM carried out a baseline ecological survey of all of its properties in 2009-2012 and developed habitat maps. As part of this exercise, Longford Pass Bog was surveyed in 2010, with additional surveys in 2012 and 2017. Habitat maps were updated in 2018. Habitat maps have been updated, where required. This rehabilitation plan is informed by the original baseline survey as well as subsequent confirmatory site walk-over surveys and visits, and updates to baseline data.

Habitat mapping followed best practice guidance from Smith *et al.* (2011). Map outputs including all habitat maps and target notes were produced using GIS software application packages (ArcGIS). General marginal habitats and other habitats that had not been modified significantly by industrial peat extraction were classified using Fossitt *et al*. (2000). Plant nomenclature for vascular plants follows Stace (2019), while moss and liverwort nomenclature follow identification keys published by the British Bryological Society (2010).

A detailed ecological survey report for Longford Pass Bog is contained in Appendix II.

3. SITE DESCRIPTION

Longford Pass (Pope's Bog) is located in Co. Tipperary, 5km south-west of Urlingford. The overall area of the bog is 278 hectares.

The bog is situated adjacent to the old N8 Cork-Dublin road and the newer M8 motorway bisects the southern part of the site. It is bordered to the south by a minor road (that separates Longford Pass from the adjacent Littleton BnM property).

Industrial peat extraction ceased at Longford Pass Bog in 2017. Rehabilitation took place at Longford Pass Bog between 2018-2021. Bare peat areas were targeted with intensive drain-blocking. Some outfalls were adjusted with hydrological management to raise water-levels across the site.

More intensive rehabilitation was carried out across the bare peat areas. Field drains were regularly blocked. Pumping ceased in the northern section of the site after 2022. This has contributed the development of large wetlands to the east of the site. The pump at Longford Pass Bog is now permanently depowered and scheduled for removal.

There has been a relatively long period of industrial peat extraction at Longford Pass Bog. Up until 2017, the majority of the site was managed for industrial milled peat production. This bog had a partially pumped drainage regime. The bog became cutaway on a phased basis and there were older cutaway sections that were already vegetating and developing cutaway habitats. A BnM industrial railway passes through Longford Pass Bog along the eastern margin and connected this former industrial peat production bog and bogs to the north to the wider Littleton network, where milled peat was formerly transferred to Lanespark Briquette factory.

Several small areas have underlying glacial sub-soil where the bog was completely cutaway. Large wetlands were developing across some of the older cutaway where drainage was breaking down naturally.

An area of cutaway bog to the south of the railway has been developing prior to 1995 and split into two sections by the construction of the new M8 motorway between 2006-2010. The northern side of the motorway is re-colonising naturally with a mosaic of habitats including Birch scrub, Heather and poor fen. Part of the site south of the motorway was reclaimed as farmland by a local farmer under licence from BnM.

There are also two separate sections of bog at the southern end of the site that lie south of the old N8 Dublin-Cork road and adjacent to Littleton bog to the south. These sections were never developed for milled peat production. The former BnM industrial railway passes along the eastern side of the western section. These areas were used for private sod peat production in the past. The eastern section is also used by Littleton Shooting Club.

There are no EPA mapped watercourses flowing through the bog. The Drish_050 River (EPA Name: TEMP_16V04 EPA code: 16V04) is located along of the southern boundary of the western section of Longford Pass Bog.

See Drawing number *BNM-ECO-26-11-01: Site Location Map*, included in the accompanying Mapbook[1] , which illustrates the location of Longford Pass Bog in context to the surrounding area.

[1] Cutaway Bog Decommissioning and Rehabilitation Plan – Killeen Bog Map Book

3.1 Status and Situation

3.1.1 Site history

Industrial peat production commenced in Longford Pass Bog in the 1940's and continued until 2017. Longford Pass Bog initially was developed as a sod turf production site. Longford Pass Bog then formerly supplied peat to the Littleton Briquette Factory. In 2017, BnM announced the closure of the Littleton Briquette factory and the cessation of industrial peat production in the majority of cutaway bogs within the Littleton Bog Group.

The site was bisected by the construction of the N8 Motorway in 2000s. A small area between the new motorway and R639 (old main road) was leased and developed for farmland in 2018.

Part of the site north of the M8 re-vegetated, with pioneer vegetation maturing and developing a mosaic of typical cutaway habitats with Birch woodland predominating. Parts of the site (younger cutaway) naturally colonising for > 10 years and developed a mosaic of cutaway habitats. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities with deep peat areas slower to colonise. Natural re-colonisation of the cutaway was effective.

Rehabilitation commenced at Longford Pass Bog in 2018, with a program of drain blocking. A large part of the site has been re-wetted.

Pumping continued at the site until 2022, when the pumping ceased operation.

3.1.2 Current land-use

Industrial peat extraction has now completely ceased. Pumping at the bog continued until 2022. Pumps have been permanently depowered and are scheduled for removal. Some remedial drainage was carried out to manage water-levels via gravity flow.

The former BnM industrial railway is still present on site with the exception of the western portion of it. The remaining former railway is expected to be decommissioned shortly.

Part of the site north of the M8 is developing into a woodland. Older cutaway areas have continued to develop and mature, and are also responding to the re-wetting around the site. Areas that were bare peat in 2018 are colonising with pioneer vegetation however some areas of bare peat still remain.

Longford Pass is proposed to be included in the Coillte/BnM Midlands Native Woodland Project (Midlands Native Woodland - Coillte). The main objective of this proposed project is to develop and enhance native woodland in areas of cutaway that would remain naturally dry, developing woodland habitat that would naturally complement wetland and peatland habitats already developing across these sites. This proposed project is currently being considered for consent by the Forest Service. Areas proposed to be included in Native Woodland Project have also been mapped as constrained land in the rehabilitation plan.

The Littleton Labyrinth is a proposed amenity project that was also developed during this period, in partnership with Tipperary County Council. Initially a feasibility study was carried out that looked at developing greenway amenity, and associated facilities across the Littleton Bogs, and potential links to existing infrastructure and local villages/towns. The first phase of this project was developed by Tipperary County Council in 2023/24, and a greenway was constructed on former BnM industrial railway though Killeen and Lanespark Bog to link with Loch Doire Bhile amenity, north of Lanespark. There potential to extend the greenway development through Longford Pass Bog.

A small section of broadleaf forestry borders the western section of bog. The eastern section of the southern parcel of the site has been leased to Thurles Gun Club.

Tipperary County Council has currently included the area of Longford Pass Bog within the Mid-Tipperary Decarbonising Zone in the Tipperary Climate Action Plan.

3.1.3. Socio-Economic conditions

BnM has historically been a vital employer for the rural communities in the Irish midlands. BnM compiled a report on the role of peat extraction in the midlands historically in which they report that in 1986, by the end of BnM's Third Development Programme, a total of twenty-three work locations had been established around the country. The company had an average employment of approximately 4,688 in the mid 1980's, with a peak employment of 6,100 during the production season, which placed it among the country's largest commercial employers. The importance of such levels of employment were largely due to its regional concentration in the Midlands and the lack of alternative employment opportunities in these areas at the time.

According to the Energy Crop Socio-Economic Study undertaken by Fitzpatrick Associates in 2011, there were an estimated 1,443 jobs supported by the peat-to-power industry in Ireland at the time, some 81% of which were located in the catchment areas of the three peat-fired generating stations (Lough Ree, West Offaly, and Edenderry Power Stations). These constituted jobs in the plants and in peat extraction, jobs indirectly supported in upstream supply industries and jobs induced through the trickle-down effects of the wages and salaries of those supported directly or indirectly. These job numbers have now declined with the cessation of peat extraction.

In respect of Longford Pass Bog, jobs included in the above study would have included those to facilitate extraction of peat at this bog and associated processing and transfer to Littleton Briquette Factory.

As the primary employer in many Midland counties, BnM played a central role in building communities through several initiatives, including development and construction of local housing complexes, education bursaries, support of local sporting clubs, the provision of community gain funds, charity programmes and the provision and building of amenity areas.

Employment numbers have now significantly declined following the cessation of industrial peat extraction at this bog.

3.2 Geology and Peat Depths

3.2.1 Sub-soil geology

The underlying geology[2] at Longford Pass Bog comprises four different bedrock units; Waulsortian Limestones (Dolomitised massive fine-grained limestone), Crosspatrick Formation (Pale-grey cherty crinoidal limestone), Waulsortian Limestones (Massive unbedded lime-mudstone) and Ballysteen Formation (Dark muddy limestone, shale).

The underlying geology of Longford Pass is predominantly Dolomitised massive fine-grained limestone (Waulsortian Limestones). The northwestern section is made up of Pale-grey cherty crinoidal limestone (Crosspatrick Formation (CDCROS)). The southern section is made up of a small section of Massive unbedded

[2] https://www.gsi.ie/en-ie/data-and-maps/Pages/Bedrock.aspx

lime-mudstone (Waulsortian Limestones (Code: CDWAUL)) and the furthest south section of the site which borders Littleton bog is made up of Dark muddy limestone, shale (Ballysteen Formation (Code: CDBALL)).

The Dolomitised Waulsortian formation is classified as a regionally important aquifer (Rkd) because of its diffuse karstification, while the unbedded lime-mudstone Waulsortian formation is classified as a regionally important (Rk) as it is subject to karstification.

The Crosspatrick Formation is considered a Locally Important Aquifer - Bedrock which is Generally Moderately Productive (Lm). The Ballysteen Formation is also considered a Locally Important Aquifer Bedrock but is Moderately Productive only in Local Zones (LI).

Quaternary subsoil mapping maps most of the Longford Pass area as cut peat, surrounded by a mix of Deep poorly drained mineral - Derived from mainly calcareous parent materials as well as Deep well drained mineral - Deep well drained mineral.

3.2.2 *Peat type and depths*

The majority of Longford Pass Bog has very shallow peat remaining (0-1m) particularly within the western and southern section of the former production area. A significant portion of Longford Pass is considered to have relatively deep residual peat, and the eastern section of the bog is estimated to have between 2m - 5m of peat remaining.

3.3 Key Biodiversity Features of Interest

3.3.1 Current habitats

The most common vegetation communities/habitats[3] present at Longford Pass Bog include:

- Poor fen vegetation (pJeff/pEang) (in mosaic) (Codes refer BnM classification of pioneer habitats of production bog. See Appendix II).
- Dry heath (dHeath) (in mosaic)
- Open Birch scrub (oBir) (in mosaic)
- Dry/wet grassland (gMol)
- Temporary open water (TOW) (wet sections)
- Bare peat
- Riparian zones (old silt ponds and culverted streams/drains along motorway embankment)
- Small wetland pools with open water and poor fen vegetation (pRos)
- Access routes (Acc) (railways, travel paths and gravel paths with associated scrub/dry heath verges)

Cutaway habitats are continuing to develop across Longford Pass Bog. Birch scrub and woodland has significantly expanded across the site on some of the drier, more elevated ground on the western side. The eastern and northern sections all have natural basins that are developing as wetlands. Pumping at this site ceased in 2022 and this has supported the expansion of wetlands. Pioneer vegetation is continuing to develop across the site and the bare peat cover is rapidly shrinking.

[3] Codes refer BnM classification of pioneer habitats of production bog

In general, cutaway habitats are developing according to the underlying environmental conditions and reflect the varying topography, hydrology and peat depths. Drain-blocking and other rehabilitation measures have had a significant positive impact across the site in re-wetting residual peat and enhancing the development of wetland habitats. Ceasing pumping has also had a significant impact and has supported extensive wetland development across the site.

	More established vegetation in older cutaway to the west of the site. Typical Bog Cotton-dominated poor fen reflecting shallow cutaway peat
	Pioneer vegetation developing on bare peat in 2018. Pioneer vegetation quickly establishing across bare peat areas after the peat extraction activity ceasing. Re-wetting not implemented in this area at the time.
	Typical Birch scrub and Rush-dominated pioneer vegetation developing in the central part of the site.

	2019. Northern part of the site. Site now re-wetted. Pumping reduced.

See Drawing number *BNM-ECO-26-11-17: Habitat Map (2018)*, included in the accompanying Mapbook, which illustrates the habitats at Longford Pass Bog. See also Table 3.1 for photographic plates of habitats (taken in 2018 and 2019).

3.3.2 Species of conservation interest

Biodiversity is continually adapted to the changing conditions across the site. A number of species of conservation interest utilize the habitats available at Longford Pass Bog. The following is a summary of the records of these species available within both BnM and NBDC records.

- Multiple mammal species have been recorded as part of BnM surveys on or in close proximity to the bog including Mountain hare (*Lepus timidus*) (AR1719 code: 1334), Badger (*Meles meles*), Rabbit (*Oryctolagus cuniculus*) and Red Fox (*Vulpes vulpes*).
- Bird species of conservation interest recorded from the bog include the BOCCI[4] red listed species Snipe (*Gallinago gallinago*) and Meadow Pipit (*Anthus pratensis*). The BOCCI amber listed species Willow Warbler (*Phylloscopus trochilus*), Mallard (*Anas platyrhynchos*) and Swallow (*Hirundo rustica*) have also been recorded at Longford Pass Bog.

Peatland rehabilitation can result in increases on the relative abundance or proportion of species of conservation interest utilising bogs post rehabilitation. This can include red or amber listed species of breeding waders along with wintering species including Swans and other wildfowl. Re-wetting has created new habitat for species such as Black-Headed Gull. Wetland birds (Mallard, Teal and small flocks of Whooper Swan) continue to use the more established wetlands on the western side of the site.

3.3.3 Invasive species

The NBDC holds records for the high impact invasive species Japanese Knotweed (*Fallopia japonica*), which has been recorded between the southern boundary of Longford Pass and the northern boundary of Littleton bog. NBDC also holds records for the invasive mammal species Fallow deer (*Dama dama*) within Longford Pass bog.

A broad range of common garden escapes are occasionally present around the margins of BnM bogs, and although spatial overlap with the rehabilitation areas is expected to be limited, these will be treated in line with best practice during all activities.

3.4 Statutory Nature Conservation Designations

There are no European Designated Sites i.e. Special Areas of Conservation (SAC) or Special Protection Areas (SPA) in close proximity (i.e. within a 5km radius at minimum) to Longford Pass Bog.

The nearest European Designate Sites to Longford Pass bog are as follows:

- The Loughans SAC (000407)- 7.4km east
- Spahill and Clomantagh Hill SAC (000849)- 9.4km northeast
- River Barrow and River Nore SAC (002162) (002162)-11.4km southeast
- Galmoy Fen SAC (001858)- 11.8km northeast
- Lower River Suir SAC (002137) - 12.1km southwest
- Cullahill Mountain SAC (000831)- 13.8km northeast

There are also no NHA's (Natural Heritage Areas) or pNHA's (proposed Natural Heritage Areas) within a 5km radius of Longford Pass Bog. A number of non-statutory designated sites which overlap with European designated

[4] https://birdwatchireland.ie/app/uploads/2021/04/BOCCI4-leaflet-2-1.pdf

sites occur in the wider area. There are also a number of pNHA's that occur within 10km of Longford Pass bog including:

- Kilcooly Abbey Lake (000958) – 5.9km southeast,
- The Loughans pNHA (000407) - 7.4km east,
- Spahill and Clomantagh Hill pNHA (000849) - 9.4km northeast and
- Cabragh Wetlands pNHA (001934) – 9.6km west.

See drawing *BNM-ECO-26-11-23: Proximity to Designated Sites* in the accompanying map book.

3.4.1 Other Nature Conservation Designations

The Ramsar Convention entered into force in Ireland on 15th March 1985. Ireland currently has 45 sites/wetlands designated as Wetlands of International Importance (Ramsar Sites). These cover a surface area of 66,994ha.

There are no Ramsar sites in close proximity to Longford Pass Bog with the closest located in excess of 35km.

3.5 Hydrology and Hydrogeology

Longford Pass Bog forms part of the Suir Catchment (Catchment ID: 16) as defined by the EPA under the Water Framework Directive (WFD). The bog lies within the Suir_SC_040 sub catchment. Longford Pass had a partially pumped system, but the pump has been permanently depowered since 2022 and is scheduled for removal. Longford Pass now has a gravity-based drainage system. Some remedial drainage was carried out to manage water-levels via gravity flow to the north under the road.

The bog contains two drainage pathways and discharge locations, discharging to streams (via silt ponds), which eventually flow into the River Suir.

The Dolomitised Waulsortian formation is classified as a regionally important aquifer (Rkd) because of its diffuse karstification, while the unbedded lime-mudstone Waulsortian formation is classified as a regionally important (Rk) as it is subject to karstification.

The Crosspatrick Formation is considered a Locally Important Aquifer - Bedrock which is Generally Moderately Productive (Lm). The Ballysteen Formation is also considered a Locally Important Aquifer Bedrock but is Moderately Productive only in Local Zones (Ll).

An aquifer is an underground body of water-bearing rock or unconsolidated materials (gravel or sand) from which groundwater can be extracted in useful amounts. GSIs Aquifer classes are divided into three main groups based on their resource potential, and further subdivided based on the type of openings through which groundwater flows. There are nine aquifer categories in total. Locally important aquifers are capable of supplying locally important abstractions (e.g. smaller public water supplies, group schemes), or good yields (100-400 m^3/d). This data gives an indication of sub-surface deposits (bedrock and unconsolidated materials) in terms of their groundwater resource potential and dominant groundwater flow type.

Regionally important aquifers are those in which the network of fractures, fissures and joints, through which groundwater flows, is well connected and widely dispersed, resulting in a relatively even distribution of highly permeable zones. There is good aquifer storage and groundwater flow paths can be up to several kilometres in

length. There is likely to be substantial groundwater discharge to surface waters ('baseflow') and large (>2,000 m^3/d), dependable springs may be associated with these aquifers.

The majority of the cutover bog is located in an area mapped by GSI as of low groundwater vulnerability with some peripheral sections having moderate groundwater vulnerability (GSI Mapviewer). Groundwater vulnerability for the area surrounding Longford Pass Bog ranges from predominantly high to extreme vulnerability. Groundwater Vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities. Groundwater vulnerability maps are based on the type and thicknesses of subsoils (sands, gravels, glacial tills (or boulder clays), peat, lake and alluvial silts and clays), and the presence of karst features. Groundwater is most at risk where the subsoils are absent or thin and, in areas of karstic limestone, where surface streams sink underground at swallow holes. These data indicate there is generally low risk of any groundwater contamination occurring at this site. Groundwater Vulnerability is typically used to indicate the susceptibility to groundwater pollution.

3.6 Emissions to surface-water and watercourses

Longford Pass Bog has 2 treated surface water outlets (SW17 and SW18) from previously active peat extraction catchment, which discharge to the Drish 20 river (EPA Code: IE_SE_16D020068) to the north east of the site and to the TEMP_16V04 stream, a tributary of the Drish 16 river (IE_SE_16D020200) from the west of the site. The Drish 16 river is classed as Poor water quality status and the TEMP_16V04 stream is classed as Good water quality status (River Waterbody WFD Status 2019-2024).

The locations of silt ponds, associated surface water emission points and those being monitored and sampled as part of the IPC licence are detailed on the *BNM-ECO-26-11-02 Longford pass: Structures and Sampling*, along with the water quality map (*BNM-ECO-26-11-WQ01: Water Quality Map*) in the associated map book.

Peat extraction is identified as a pressure in the third cycle of the River Basin Management Plan (Water Action Plan for Ireland) all be it not a significant pressure. The main emission limit value (ELV) associated with these bogs is 35mg/l suspended solids, with trigger levels for ammonia of 3.6 mg/l and COD 100mg/l.

An analysis of the results over a number of years of the IPC licence environmental monitoring of some of the discharges from these bogs (appendix XII), indicates that results were under the Emission Limit Value for Suspended Solids 100% of this period, with a similar level of compliance for COD and under the trigger level for Ammonia, all trending in the right direction.

Ammonia averaged 0.5mg/l and ranged from 0.015 to 2.9 mg/l with Suspended Solids ranging from 2 to 39 mg/l and averaging 7.52mg/l.

Rehabilitation of cutaway peatland is closely linked with control of emissions. One of the criteria for successful rehabilitation is stabilisation through re-vegetation, which will stabilise all substrates and in turn remove the need for further silt control measures. This site is already vegetated in some areas. Re-wetted peat also aids the primary objective of stabilizing peat, as when peat is re-wetted it is not vulnerable to wind erosion. Re-wetted peat and the development of wet peatland habitats can also act as sinks for silt and mobile peat, and increases additional retention time for solids, and the peatland vegetation can quickly stabilise this material within blocked drains on site (by acting like constructed wetlands).

Water quality of water discharges from restored peatlands normally improves as a result of bog restoration measures and the restoration of natural peatland processes (Bonn *et al*., 2017). Bog restoration is also expected to improve water attenuation of the site as the drains are blocked, slowing water movement and water release from the site. Restored peatlands help slow the release of water and aid the natural regulation of floods downstream (Minayeva *et al*., 2017). The draft National River Basin Management Plan (NRBMP) 2022-2027 (DHPCLG, 2022) is the key national plan for Ireland to achieve the objectives of the Water Framework Directive (WFD). The NRBMP outlines how key actions such as the BnM peatland rehabilitation is expected to have a positive impact on water quality and help the NRBMP deliver its objectives in relation to the WFD.

Water will still discharge from designated emission points when rehabilitation at Longford Pass has been completed. This discharge will have improving water quality and there will be increased wetland attenuation, meaning slower release of water. This is expected to have a positive impact on status of downstream water bodies. While water quality improvements assist in meeting water frameworks directive ambitions and targets, they can also improve drinking water sources in applicable catchments with drained peatlands and the potential for associated reduction in treatment requirements at drinking water treatment facilities.

Decommissioning and Rehabilitation Programme Water Quality Monitoring.

Initial quarterly results are included in Appendix XII, for Longford Pass.

BnM have been providing the Local Authority Water Programme (LAWPRO) with details of the surface water emissions points associated with this bog.

This is necessary to ensure that there is alignment with the WFD monitoring programme and that where possible, the monitoring programme will enable any improvements in water quality or establishing trends to be quantified against any available WFD monitoring data. It will also enable the periodic sharing of data which will inform the monitoring reports, success criteria and enable LAWPRO under the Water Framework Directive to track any changes in pressures and be aware of changes in water chemistry.

Monitoring results will be maintained, trended every six months and reported on each year and as required, as part of the requirement to report on Condition 10.1 of the IPC Licence on Bog Rehabilitation in the Annual Environmental Report, and will be provided to LAWPRO and the EPA as required to inform progress and national monitoring requirements under the WFD.

These results will also be available in May each year as a requirement of the Annual Environmental Report at www.epa.ie.

The parameters to include as per condition 6.2 of the IPC Licence include monthly monitoring for pH, Flow, Suspended Solids, Total Solids, Total Phosphorus, Total Ammonia, Colour & COD.

3.7 Fugitive Emissions to air

None.

The bog is no longer in industrial peat production. Rehabilitation of the cutaway peatland will seek to re-wet the dry peat where possible and re-vegetate all areas (whether wet or dry). Collectively, ceasing industrial peat production, re-wetting and re-vegetating will minimise any risk of emission to air from dust.

3.8 Carbon emissions

Irish peatlands are a huge carbon store, containing more than 75% of the national soil organic carbon (Renou-Wilson *et al.* 2012). Peatland drainage and extraction transforms a natural peatland which acts as a modest carbon sink (taking in 0.1 to 1.1 t of carbon as CO_2-C /ha/yr) into a cutaway ecosystem which is a large source of carbon dioxide (releasing 1.3 to 2.2 t of carbon as CO_2-C /ha/yr) based on Tier 1 Emission factors (Evans *et al*. 2017). Renou-Wilson *et al.* (2018) reported losses of between 0.81 – 1.51 CO_2-C /ha/yr from drained peatlands located in Ireland.

Re-wetting of dry peatlands will increase methane emissions (Gunther *et al*. 2020) as a consequence of the anoxic conditions within the peat body that provide a suitable environment for the microbial breakdown of plant litter and root exudates. Tanneberger *et al.* (2021) describes how peatland management has to choose between CO_2 emissions from drained peatlands or increased methane (CH_4) emissions from rewetted industrial peatlands. However, when radiative effects and atmospheric lifetimes of both GHG gases are considered and modelled, postponing rewetting increases the long-term warming effect of continued CO_2 emissions (Gunther *et al*. 2020). This means the increase in methane due to rewetting of dry peatlands is still negated by the CO_2 emissions reductions. Further, Wilson *et al.* (2022) confirmed the benefit of rapid rewetting to achieve strong carbon reductions and potentially altering the warming dynamics from warming to cooling depending upon the climate scenario.

It is expected that Longford Pass Bog will become a reduced carbon source following rehabilitation. The potential of any cutaway site to develop as a carbon sink in the longer-term depends on the success of the rehabilitation measures, the extent of development of *Sphagnum*-rich or other peat-forming habitats, the balance of carbon fluxes from different cutaway habitats and future climatic conditions. Much of this bog is expected to develop wetland habitats on shallow peat with open water, reed swamp and fen habitats with alkaline emission factors and a smaller proportion will develop as regenerating wet deep peat vegetation on deep peat areas. Birch woodland is expected to develop on the drier mounds and along peripheral headlands.

3.9 Current ecological rating

(Following NRA (2009) Evaluation Criteria)

The majority of this site is deemed to be of low ecological value due to the dominance of bare peat or open water on bare peat as a result of industrial peat production. Areas still dominated by bare peat are rated as having a low-moderate local ecological value in general. These bare peat and associated pioneer habitats are currently deemed to be of **local importance, lower value.**

A proportion of the site has higher biodiversity value in a local context and is rated as **Local Importance (higher value)** as the site supports developing semi-natural habitats and pioneer cutaway habitats such as the wetland area, Birch woodland and some of the marginal remnant habitats are also included in this higher ecological rating.

4. CONSULTATION

4.1 Consultation with interested parties

There has been ongoing consultation about rehabilitation, biodiversity and other general issues over the years about Littleton bog group, including Longford Pass Bog, with various stakeholders in relation to:

- General consultation with range of stakeholders at annual Bord na Móna Biodiversity Action Plan review days 2010-2018.
- Open consultation with range of stakeholders at annual BAP review days 2010-2018.
- Consultation with the North Tipperary Heritage Forum during the period 2010-2015.
- General consultation at a local community event in Littleton in Dec 2016.
- General consultation with Tipperary County Council and other stakeholders in relation to the Littleton Labyrinth Project Feasibility Study.
- Ongoing engagement with Lisheen Mine.
- Archaeological Liaison Committee (National Museum of Ireland & Dept of Culture Heritage and the Gaeltacht).
- Midlands & East Regional WFD Operational Committee (River Basin Management Plans).
- Ongoing consultation with Coillte – proposed Coillte/BnM Midlands Native Woodland Project.
- Ongoing consultation with Slieve Ardagh Rural Development Group.
- General consultation with Tipperary County Council and other stakeholders in relation to the Midlands Network Trail.
- Specific Consultation with Tipperary Climate Action Officer and Biodiversity Officer relating to the Tipperary Climate Action Plan and the Mid-Tipperary Decarbonising Zone.

There was specific consultation and engagement about rehabilitation of the Littleton Bog group, including Longford Pass, with various stakeholders during the period 2018-2021:

- Lisheen Mine.
- Irish Peatland Conservation Council.
- NPWS (site visits).
- Tipperary County Council (2018).
- Tipperary Heritage Forum.
- Kilkenny County Council.
- Consultation with members of the local community.
- Consultation with local community groups.
- Slieve Ardagh Rural Development.
- National University of Galway.
- Limerick Institute of Technology.
- Irish Wildlife Trust.
- Environmental Protection Agency.
- Birdwatch Ireland.
- Birdwatch Ireland Tipperary Branch.
- Forest Service.
- Coillte.

To inform the original Plan (Phase 1 Rehabilitation), both national and local stakeholders, and local representatives of national bodies (such as Regional National Parks and Wildlife Service staff) and relevant offices in County Councils (such as the Heritage or Environmental Offices) were contacted. Any identified local interest groups were informed of the opportunity to engage with this rehabilitation plan and were invited to submit their comments or observations in relation to the proposed rehabilitation (Phase 1) at Longford Pass Bog or the programme in general

4.2 Issues raised by Consultees

Some issues were raised by consultees during the consultation process for the rehabilitation plan for Longford Pass Bog and for response to consultation for rehabilitation across the Littleton Bog Group between 2018-2025, and these are summarised below.

NPWS welcomed the restoration and rehabilitation measures proposed for the Littleton Bog Group in 2018, particularly where it could result in the development of Annex I active raised bog or would significantly aid Ireland in meeting its commitments under the EU Habitats Directive.

NPWS (2018) suggested that BnM consider more fully the potential for forward-planning during production phases of its operation so that the topography of the commercial fields could be engineered so as to best facilitate rewetting of the sites. Consideration should be given to reprofiling works within the Littleton Bog Group.

NPWS (2018) highlighted the potential for more intensive rehabilitation during initial consultation and the potential for larger project opportunities focusing on GHG emission reduction creation of peat-forming habitats, biodiversity enhancement, other ecosystem services enhancement/restoration. The use of bunding at several sites was discussed.

Birdwatch Ireland (2018) welcomed the proposed restoration/rehabilitation of the Littleton Bog Group and highlighted need to take consideration of bird nesting season when carrying out works, particularly for Lapwing and Curlew.

IPCC (2018) requested clarity around the scope of sites included in the Littleton Rehabilitation Programme and recommended that priority be given to raised bog restoration, where possible. IPCC were concerned about the fact that milled peat extraction was projected to continue at Killeen Bog (in 2018, subsequently ceased in 2021). The IPCC were also unclear about the aims and objectives for sites with biodiversity interest. The IPCC recommended the use of contouring as a methodology to improve re-wetting outcomes.

The IPCC (2018) highlighted that monitoring of changes to water-levels as a result of rehabilitation could be improved using piezometers and queried the frequency of ecotope mapping. NPWS (2018) recommended that ongoing research into the interaction between rehabilitation measures and carbon emissions is prioritized so as to better inform future rehabilitation plans.

The Irish Farmers Association (IFA), The Department of Agriculture Food and the Marine, individual local residents and ICMSA queried likely impacts relating to the finalisation of several bog rehabilitation plans in 2021 and 2022. They raised concerns based on the proposed re-wetting in relation to flooding on adjoining lands and, specifically, with regards to the maintenance of drains. In previous submissions, the IFA also raised the issue of Health and Safety in relation to raising water levels as well as possible impacts on land and property prices.

Several individuals who owed adjacent land to bogs within the Littleton Bog Group expressed concerns about the potential impacts of re-wetting to their land (2018).

Several individuals and organisations expressed interest in the development of amenity and greenways through the Littleton Bog Group (2018). IPCC highlighted a bog area at the north of Littleton Bog that had been used for educational purposes in the past.

Tipperary County Council (2018) highlighted the need to avoid any unnecessary deterioration in the quality and quantity of ground and surface waters. Tipperary County Council (2018) also suggested that peatland water levels and flow regimes should be restored to as close to the natural reference conditions as possible.

Queries about future nature conservation designations were also submitted by IPCC, discussed with IWT and with Birdwatch Ireland Tipperary Branch. Birdwatch Ireland, Tipperary Branch (2018) suggested further management of sites for to improve habitat for breeding wetland birds.

The Irish Farmers Association (IFA) (2021-2022) expressed concerns regarding the future ownership of the BnM bogs subject to rehabilitation, in submissions made on earlier rehabilitation plans. They expressed a desire for contingency planning for potential future ownership of designated bogs so as to ensure no negative impacts arise on adjacent properties from any new ownership.

University of Galway (2017) were interested in developing an INTEREG Project on peatland sites and were discussing the inclusion of several BnM sites in this proposed project. (This subsequently became the CarePeat INTEREG Project and Cavemount Bog Co. Offaly was included in the project, which is now completed).

Limerick Institute of Technology (LIT) were interested in developing a project on peatlands and paludiculture and were discussing the potential availability of land within the Littleton Bog Group. This proposal ultimately did not develop into a project on BnM lands.

An individual highlighted the presence of several rare Bee Orchid varieties along the BnM railway at Longford Pass.

Tipperary County Council developed a Climate Action Plan in 2024 and have developed an area called the Mid Tipperary Decarbonizing Zone. This Decarbonising Zone within the local authority area is to act as a test bed for a range of climate mitigation, adaptation and biodiversity measures in a specifically defined area through the identification of projects and outcomes that will assist in the delivery of the National Climate Objective (Tipperary County Council 2024).

4.3 BnM response to issues raised during consultation and rehabilitation 2018-2021

BnM carried out extensive consultation and engagement with all interested parties during 2018-2021.

Consultees during the Phase 1 rehabilitation (2018-2021), including NPWS and the IPCC, suggested the use of more intensive rehabilitation measures such as contouring and bunding. These ultimately were beyond the scope of the rehabilitation budget allocated to these sites by BnM at the time (2018-2021). PCAS is now an opportunity to carry out some of these suggested measures (e.g. bunding, recontouring) through the Littleton Bog Group as part of Phase 2 rehabilitation and various additional phase 2 rehab has been proposed for Templetouhy, Carrickhill, Derryville, Baunmore, Inch, Ballybeg, Derryvilla and Killeens. This additional Phase 2 rehab is dealt with by the 2025 update to the Ballybeg-Lanespark-Derryvilla Rehabilitation Plan 2025.

Sphagnum inoculation is one measure that was initially suggested by IPCC (in 2018) for use at Ballysorrell to support raised bog restoration. This measure was ruled out initially by BnM in 2018 due to its relatively high cost, lack of resources and other logistical issues such as lack of suitable local *Sphagnum* donor sites. Since then, BnM has developed the Peatlands and People LIFE Project (Home | Ireland's Climate Action Catalyst | Peatlands &

People) and one of the main objectives of this project on BnM land is to inoculate approx. 800 ha of suitable residual deep peat with *Sphagnum* plugs to speed up the trajectory of development of *Sphagnum*-rich embryonic bog vegetation. So far, 350 ha has been inoculated across midlands bogs. The future selection of sites within the Littleton Bog Group for *Sphagnum* inoculation will be dependent on availability of resources for planting. Site visits to Lanespark and Littleton (2025) has also shown that *Sphagnum* is present on site and is recolonising and spreading in certain areas quickly in response to the re-wetting in 2018-2021.

Rehabilitation measures should positively impact the water quality in receiving water bodies through enhancing the water attenuation across rehabilitated sites. The robust water monitoring programme implemented will be used to assess water quality leaving rehabilitated sites at designated points. BnM also advised that decommissioning of silt ponds will only be carried out when the EPA are satisfied that adequate stabilisation of the bog has been achieved and silt ponds are no longer required. This decommissioning will be determined by water quality results and EPA approval.

During Phase 1 of the rehabilitation across Littleton Bogs, individual landowners who expressed concerns were met on site. No boundary drains were blocked and, in several instances, (Ballybeg) some internal drainage was modified to allow water draining from external lands to flow through these sites unhindered. It is the intention of BnM that the re-wetting of the bogs will be carried out in such a manner that does not impact on third party lands. Where it is deemed that blocking of a shared drain would cause any adjoining lands to be adversely affected, this will be avoided, and alterations made to the rehabilitation plan. In general, drains around the margins of the bog will not be blocked. It is intended that rehabilitation measures will not significantly alter the existing topographical catchments and that the spine of the drainage networks, those which the upstream catchments drain through, will be retained by BnM. If issues arise with boundary drainage in the future, then these will be dealt with by BnM.

BnM and Tipperary County Council carried out a feasibility study of the potential for amenity development across the Littleton Bog Group called Littleton Labyrinth in 2018-2020. The first phase of this amenity has been completed, and a greenway has been constructed at Killeen Bog to Loch Doire Bhile. A further extension (Phase 2) is proposed at Ballybeg and Derryvella Bog. There is potential for future extensions to this greenway network in the future. These greenways can be integrated into the rehabilitated landscape with no significant impact to the previous re-wetting.

Rehabilitation plans are not intended to plan out future management of these sites. Known or planned after-use (way-leave, Littleton Labyrinth greenway feasibility) has been incorporated, where possible, in the rehabilitation plan. Peatland rehabilitation is not intended to constrain future land-uses, where they are compatible with this environment.

BnM will continue to manage their land bank into the future. As industrial peat production has now ceased on BnM lands and rehabilitation measures carried out, a regular drainage maintenance programme will not be required or carried out as would have been the case in the past. However, if issues arise with the BnM internal drainage system that affects upstream or downstream landowners, then these issues will be addressed by BnM.

BnM considers issues regarding estate security, fire risk, invasive species and water pollution of utmost importance. BnM intends to maintain security and manage fire risk over the entirety of the estate. In this regard, rehabilitation should have no detrimental impact on these issues. Regarding water pollution, BnM is regulated by the EPA and as such adheres to the strict water pollution measures laid out by the same. BnM will consider future opportunities for biodiversity enhancement, subject to availability of resources and funding, where possible. BnM intends to maintain a “No Shooting” policy on Longford Pass Bog.

It is the intention of BnM to keep secure the estate and ensure that any anti-social behaviour that occurs within the estate is reported and dealt with by the appropriate authorities.

5. REHABILITATION GOALS AND OUTCOMES

The rehabilitation goals and outcomes outline what BnM want to achieve by implementing the rehabilitation. These include:

- Meeting conditions of IPC Licence.
- Stabilisation or reduction in water quality parameters of water discharging from the site (e.g. suspended solids).
- Reducing pressure on receiving waterbodies that have been classified as *At Risk* from peatlands and from peat extraction, via stabilization or improving water-quality from this bog, and therefore, reducing pressures.
- Optimising hydrological conditions for **climate action benefits.**
- Optimising hydrological conditions for the development of reed swamp and fen on shallow more alkaline peat and other subsoils, or *Sphagnum*-rich regenerating wet deep peat vegetation communities on deep residual peat, where present.
- Optimising hydrological conditions for the protection of exposed archaeological structures, their retention in situ and preservation into the future.
- Integrating rehabilitation measures with existing land-use (e.g. conifer forestry). Supporting other potential future land-uses. Integrating rehabilitation measures with future potential land-uses on site. It is not proposed to carry out any rehabilitation actions to change or negatively affect any infrastructure.
- The main goal and outcome of this plan is the successful rehabilitation (environmental stabilisation) of peatlands used for industrial peat production at the bog in a manner that is acceptable to both external stakeholders and to BnM and which optimise climate action and other ecosystem service benefits.

The rehabilitation goals and outcomes take account of the following issues.

- BnM have carried out rehabilitation at Longford Pass Bog in 2018-2021 (Phase 1 rehabilitation). Significant drain-blocking and re-wetting was carried out during this phase.
- It will take some time for stable naturally functioning habitats to fully develop at Longford Pass Bog. This will happen over a longer timeframe than the implementation of this rehabilitation plan.
- Re-wetting residual peat will initially maintain and enhance the carbon storage capacity of the bog. There is scientific consensus that restoration of hydrology in damaged bog can improve carbon storage, water storage and attenuation and help support biodiversity both on the site and in the catchment (See Section 3.8). This will reduce carbon emissions from the site from a larger carbon source to a smaller carbon source. In time, the site has the capacity to develop in part as a carbon sink.
- It is not expected that the cutover bog in the former production area has the potential to develop active raised bog (ARB) analogous to the priority EU Habitats Directive Annex I habitat within the foreseeable future (c.50 years). Longford Pass Bog has some sections with relatively deep residual peat across the site, with sections of the bog containing shallow residual peat and proportions of the bog cutaway with exposed gravel ridges. Therefore, there are areas that have potential to develop *Sphagnum*-rich habitats in this timeframe. Nevertheless, re-wetting across the entire bog, will improve habitat conditions of the whole bog. Other peatland habitats such as wetland or scrub/woodland will develop in a wider mosaic that reflects underlying conditions.

- Rehabilitating former industrial peat production bog will also in the longer-term support other ecosystem services such as such the development of new habitat to support biodiversity and local attenuation of water flows from the bog.
- WFD status in receiving water bodies can be affected by peatlands and peat extraction but is also affected by other sources such as agriculture. In addition, receiving water bodies that are assessed as At Risk from peatlands and from peat extraction are likely to have several contributary sources of impacts (private peat extraction and BnM). Reducing pressures due to former peat extraction activities at Longford Pass Bog will contribute to stabilising or improving water quality status of receiving water bodies in general. Ultimately, improving the WFD status of the receiving water body will depend on reducing pressure from a range of different sources, including peatlands in general (private and BnM).
- Re-wetting in general will benefit the future preservation of most known and unknown archaeological features.

6. SCOPE OF REHABILITATION

The principal scope of this enhanced rehabilitation plan is to rehabilitate the bog. This is defined by:

- The area of Longford Pass Bog within the rehabilitation footprint.
- EPA IPC Licence - Ref. P0499-01. As part of Condition 10.2 of this licence, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area.
- The eastern portion of the site has rewetted bare deep residual peat. Much of the remainder of the site already has establishing pioneer cutaway habitats with some areas having well-developed habitats. Targeted drain-blocking, wetland outfall management and deep peat measures are the most suitable rehabilitation approach for the site.
- BnM have defined the key goal and outcome of rehabilitation at Longford Pass Bog as **environmental stabilisation** and **optimising residual peat re-wetting,** to enhance the development of compatible habitats.
- Rehabilitation of Longford Pass Bog will support multiple national strategies of climate action, biodiversity action and other key environmental strategies such was the Water Framework Directive.
- Rehabilitation of Longford Passs Bog also supports and aligns with the goals and objectives of the Tipperary Decarbonizing Zone.

6.1 Key constraints

- **Bog conditions.** Rehabilitation outcomes are constrained by the environmental characteristics of the particular bog. For example, there is potential for raised bog restoration at some sites where there has not been significant industrial peat extraction, and the peat body is largely intact (deep peat sites that are drained). At other sites, most of the peat mass has been removed, the environmental characteristics of these areas have therefore changed radically (peat depths, hydrology, water chemistry, substrate type, nutrient status, etc.) and there will therefore be different habitat outcomes (wetlands, fen, heathland, grassland and Birch woodland).
- The majority of Longford Pass has shallow residual peat with a significant areas of deep residual peat. One pump is still present on site but remains non-functional. The bog now has a gravity-based drainage regime. Areas of residual deeper peat are likely to develop *Sphagnum* rich deep peat vegetation in time. Wetland habitats (fen, wetland, reedswamp) and dry cutaway habitats (birch woodland, scrub and heath) are the most likely habitats to develop in areas with shallower peat. These habitats are already developing in places.
- **Surrounding landscape and neighbours.** Another key constraint is the interaction between the BnM bogs and the surrounding landscape. Care has to be taken that no active rehabilitation management is carried out that could negatively and knowingly impact on surrounding land. This includes any hydrological management on neighbouring farmland. It is anticipated that the work proposed here (blocking drains and re-wetting cutaway peatlands) will not have any flooding impacts on adjacent land.
- **Archaeology**. The discovery of monuments or archaeological objects during peatland rehabilitation may potentially constrain the rehabilitation measures proposed for a particular area. The rehabilitation will optimise hydrological conditions for the protection of exposed archaeological structures, their retention in situ and preservation into the future. Any newly discovered archaeology may require rehabilitation measures to be reviewed and adapted. An Archaeological Impact Assessment (Appendix XII) will be carried out to mitigate against any impact on archaeology that may be found at the bog. Should any

previously unknown archaeological material be uncovered during the rehabilitation works, it will be avoided and reported to the BnM Archaeological Liaison Officer and the National Museum of Ireland.

- **Conifer plantation Forestry and agricultural grassland**. Conifer plantation forestry and parcels of agricultural grassland border the bog. These areas have been identified as constrained land where they overlap the rehabilitation footprint.
- **Leases**: Part of the site has been leased to Thurles Gun Club and this area has been mapped as a constraint on the rehabilitation plan.
- **Coillte/BnM Midlands Native Woodland Project.** Longford Pass is proposed to be included in the Coillte/BnM Midlands Native Woodland Project (Midlands Native Woodland - Coillte). The main objective of this proposed project is to develop and enhance native woodland in areas of cutaway that would remain naturally dry, developing woodland habitat that would naturally complement wetland and peatland habitats already developing across these sites. This proposed project is currently being considered for consent by the Forest Service. Areas proposed to be included in Native Woodland Project have also been mapped as constrained land in the rehabilitation plan.
- **Amenity development**. Tipperary County Council and BnM carried out a feasibility study of the potential for amenity development across the Littleton Bog Group called Littleton Labyrinth. There is potential for future extensions to this greenway network through Longford Pass Bog. The proposed rehabilitation measures will not impact on the delivery of any future amenity as a route is still available across the bog, and there is no constraint to rehabilitation.

6.2 Key Assumptions

- It is assumed that BnM will have all resources required to deliver this project.
- It is expected that weather conditions will be within normal limits over the rehabilitation plan timeframe. Long periods of wet weather have the capacity to significantly affect ground conditions and constrain drain blocking and other ground activities.

6.3 Key Exclusions

The scope of this rehabilitation plan does not cover:

- Areas subject to turf cutting are excluded should any still exist.
- The longer-term development of stable naturally functioning habitats at Longford Pass Bog. The plan covers the short-term rehabilitation **actions** and **an additional monitoring and after-care programme** to monitor the rehabilitation and to respond to any needs.
- This plan is not intended to be an after-use or future land-use plan for Longford Pass Bog.
- The longer-term management of this site, potentially as a nature conservation site, or for amenity, or for other uses in the future.

7. CRITERIA FOR SUCCESSFUL REHABILITATION

This section outlines what criteria will be used to indicate successful rehabilitation and what critical success factors are needed to achieve successful rehabilitation. All criteria used will be measured to validate the achievement of the rehabilitation goals and outcomes and validate the completion of the rehabilitation.

The key objective of this enhanced rehabilitation plan is **environmental stabilisation** and the stabilisation of any emissions from the site that related to the former industrial peat extraction activities.

Rehabilitation is generally defined by BnM as:

- stabilisation of bare peat areas via targeted active management (e.g. drain-blocking/re-wetting) slowing movement of water across the site and encouraging natural colonisation; and
- mitigation of key emissions (e.g. potential run-off of suspended solids).

In addition, BnM wish to optimise climate action and other ecosystem service benefits via enhanced rehabilitation measures.

7.1 Criteria for successful rehabilitation to meet EPA IPC licence conditions:

- Rewetting of residual peat in the former area of industrial peat production to offset potential silt run off and to encourage and accelerate development of vegetation cover via natural colonisation and reducing the area of bare exposed peat. See Table 7.1 for a summary of the criteria for successful rehabilitation and associated monitoring. The target will be the delivery of measures and this will be measured by an aerial survey after rehabilitation is completed.
- That there is a stabilizing/improving concentration of suspended solids and ammonia in discharges from BnM sites, associated with the measures undertaken to stabilize the peat surface by the blocking of the internal drainage system and the maximized rewetting of the peat surface. This will be demonstrated by developing a stable or downward trajectory of water quality indicators (suspended solids and ammonia) towards what would be typical of a re-wetted cutaway bog. This will be measured via water quality monitoring (suspended solids and ammonia) for at least 2 years after the rehabilitation has been completed.
- Receiving water bodies have been classified under the River Basin Management Plan and this classification includes waters that are *At Risk* from peatlands and peat extraction. The success criteria will be that the *At Risk* classification will see improvements in the associated pressures from this peatland or if remaining *At Risk*, that there is an improving trajectory in the pressure from this peatland.

Table 7-1 Summary of Success criteria, targets, how various success criteria will be measured and expected timeframes.

Criteria type	Criteria	Target	Measured by	Expected Timeframe
IPC validation	Rewetting in the former area of industrial peat production	Delivery of rehabilitation measures Reduction in bare peat.	Aerial photography after rehabilitation has been completed – to demonstrate measures (drain-blocking) Establishment of a baseline for future monitoring of bare peat, vegetation establishment and habitat condition.	2025-2027
IPC validation	Key water quality parameters Ammonia, Phosphorous, Suspended solids, pH and conductivity	Reduction or stabilisation of key water quality parameters associated with this bog	Water quality monitoring for a period after rehabilitation has been completed	2025-2027
IPC validation	Reducing pressure from peat production on the local water body catchment (WFD)	Where this section of the water body, that this bog drains to, has not been identified as under pressure from peat extraction, that the intervening EPA monitoring programme associated with its Programme of Measures for this water body, confirms that its classification remains at not being at risk from peat extraction associated with activities at this bog.	EPA WFD monitoring programme	WFD schedule

Meeting climate action verification criteria and monitoring of these criteria after the scheme has been completed is dependent on support from the Climate Action Fund or other sources of funding. Note that monitoring and verification of the overall scheme will be stratified – not all these criteria will be measured at each individual site. Baseline monitoring to be carried out during the scheme when rehabilitation is complete. Sites can be re-monitored in the future and compared against this baseline.

7.2. Critical success factors needed to achieve successful rehabilitation as outlined in the plan

The achievement of successful rehabilitation as outlined in the plan requires:

- **Funding to pay for resources required to deliver the planned rehabilitation (BnM and external).** BnM maintains a provision on its balance sheet to pay for these future costs. BnM is fully committed to meeting its obligations relating to rehabilitation and decommissioning under the Integrated Pollution Control Licence. It is expected that additional costs of enhanced rehabilitation will be supported by Government through the Climate Action Fund and Ireland's National Recovery and Resilience Plan.
- **BnM to have sufficient resources (staff and training) to deliver the planned rehabilitation with required associated skills and competencies.**
- **BnM to have sufficient resources (suitable machinery) and staff to maintain this machinery.**
- **Weather conditions to be within normal limits over the rehabilitation plan timeframe.** Long periods of wet weather have the capacity to significantly affect ground conditions and constrain the delivery of rehabilitation. The potential impact of wet weather on ground conditions can be reduced by appropriate planning and management. BnM have significant experience of managing these issues through 70 years of working in these peatland environments.
- **Rehabilitation measures to be effective.** The rehabilitation measures proposed in this plan are based on 40 years of BnM experience of peatland management and best practice applied internationally in peatland management. Measures proposed in this plan have already been shown to be affective at other sites. BnM will apply a flexible and adaptable approach to the more innovative rehabilitation measures proposed in this plan**.** If measures are not initially effective, BnM will review any requirement for additional practical rehabilitation.
- **Natural colonisation of vegetation to develop semi-natural habitats at a rate within the normal limits.** The development of naturally functioning semi-natural habitats on degraded bog takes time. It may take 30-50 years for active raised bog vegetation to re-develop on suitable cutaway that was previously bare peat. However, BnM experience has demonstrated the effectiveness of these type of measures for re-wetting bog and creating carbon sinks (Renou-Wilson *et al*. 2018).
- Rehabilitation measures have been designed to accelerate and work with natural colonisation and other natural processes. BnM experience of rehabilitation has shown that re-wetting improves conditions for natural colonisation and that natural colonisation is accelerated where the environmental conditions are most suitable. Rehabilitation measures have been designed to modify the conditions of areas within sites where conditions are less suitable for natural colonisation (modifying hydrology, topography, nutrient status or availability of potential seed sources).
- **Monitoring to be robust and effective.** Rehabilitation Monitoring will be established to validate the success of rehabilitation as required by Condition 10 of the IPC Licence and to verify the benefits of the proposed enhanced measures to optimise climate action. This will focus on a collecting a range of scientific data that can then quickly be adapted and into metrics that can be used to measure changes in various ecosystem services.

8. Rehabilitation Actions and Time Frame

Peatland rehabilitation requires detailed planning and the use of data from desktop surveys and field surveys. This data in association with topographical and hydrological modelling will be important in planning the future peatland landscapes and planning the use of the most appropriate rehabilitation methodologies to maximise climate action benefits. Hydrological modelling indicates those areas that are likely to re-wet when drains are blocked, based on the current topography, and areas where water levels may have to be modified, where needed. Enhanced rehabilitation measures will look to optimise hydrological conditions for re-wetting peat in other areas. This planning is also essential for matching the most sustainable rehabilitation methodology to the most suitable cutaway environment to maximise the benefits of the resource outlay (maximising cost/benefit).

A number of illustrative figures have been produced to inform Rehab Planning and Design, including Aerial Photography, Peat Depths, LiDAR Surface Maps, and Depression Analysis modelling; these are included in the accompanying Mapbook as the drawings referenced below:

BNM-ECO-26-11-21 Longford Pass Bog: Aerial Imagery 2000

BNM-ECO-26-11-22 Longford Pass Bog: Aerial Imagery 2020

BNM-ECO-26-11-04 Longford Pass Bog: Peat Depths

BNM-ECO-26-11-03 Longford Pass Bog: LiDAR Map

BNM-ECO-26-11-09 Longford Pass Bog: Depression Analysis

The rehabilitation actions themselves will be a combination of measures to re-wet peat. The distribution of these measures is provisionally outlined in drawing titled *BNM-ECO-26-11-20 Longford Pass Bog: Standard Rehab Measures* in the accompanying Mapbook (note that the actual distribution of these measures may be subject to change in response to stakeholder consultation and refinement of the enhanced rehabilitation measures.)

Extensive drain-blocking was already carried out as part of the rehabilitation programme between 2018-2021.

Rehabilitation measures for Longford Pass included below.

Re-assessment of the pumping regime

- Initial hydrological modelling indicated that a part of the site would develop a mosaic of wetland habitats with some permanent deeper water if the pump was decommissioned. Hydrological management looked to optimise summer water levels to maximise the development of wetland vegetation (by looking to set water depths at < 0.5 m, where possible. It is inevitable that some sections will naturally have deeper water due to the topography at this site and restrictions on lowering the level by gravity due the level of the outfall pipe under the road. Water-levels were adjusted at outfalls and by adjusting piped drainage, where possible. More sustainable permanent gravity drainage solutions were examined. It is expected that a natural seasonal regime of water fluctuation will develop, with water-levels fluctuating in association with levels of surrounding rivers.
- A targeted drain-blocking programme was implemented across the cutaway, where possible. In general, field drains were blocked where possible to re-wet cutaway and re-wet to the optimum water-level. More intensive measures were targeted towards the bare peat.
- Less intensive measures (targeted drain-blocking) were used in areas where habitats have already established.
- Hydrological measures included modifying outfalls and managing water levels with overflow pipes.

The existing silt ponds were retained and maintained during the rehabilitation phase. During the monitoring and verification phase the silt pond wase continually inspected and maintained, where appropriate. When it is deemed that the silt pond is not required, as the bog has been successfully stabilised and there is no silt run-off, the condition of the silt pond will be reviewed. The silt pond will either be de-watered (water levels lowered to a level where the silt pond will naturally develop as a small wetland feature), left in situ, or infilled (where discharges do not require silt control).

8.1 Completed

- A rehabilitation programme was carried out in Longford Pass between 2018-2021. This comprised of a range of measures outlined in *BNM-ECO-26-11-20 Longford Pass Bog: Standard Rehab Measures*. These measures varied in intensity, were targeted in places and reflected the existing environmental conditions.
- Some areas of bare peat had regular drain-blocking (Drain-blocking).
- Some areas were subject to reducing or ceasing pumping (Hydrological management).
- Some areas had minimal intervention as there were already re-vegetated and developing a mosaic of wetland, woodland and peatland habitats (Minimal intervention).
- Some areas were allowed to continue to develop as wetland due to the natural breakdown of drainage and ceasing drain maintenance (Wetland).
- Cutaway habitats are continuing to develop across Longford Pass Bog. Birch scrub and woodland has significantly expanded across the site on some of the drier, more elevated ground on the western side. The eastern and northern sections all have natural basins that are developing as wetlands. Pumping at this site ceased in 2022 and this has supported the expansion of wetlands. Pioneer vegetation is continuing to develop across the site and the bare peat cover is rapidly shrinking.
- In general, cutaway habitats are developing according to the underlying environmental conditions and reflect the varying topography, hydrology and peat depths. Drain-blocking and other rehabilitation measures have had a significant positive impact across the site in re-wetting residual peat and enhancing the development of wetland habitats. Ceasing pumping has also had a significant impact and has supported extensive wetland development across the site.

8.2 Short-term planning actions (0-1 years)

- Seek formal approval of this plan.
- Ensure all activities comply with the environmental protection requirements of the IPC Licence.

8.3 Short-term practical actions (0-2 years)

- Silt ponds will be monitored during this period and there will be continued maintenance and cleaning to prevent potential run-off of suspended solids from the site during the rehabilitation phase.

8.4 Long-term (>5 years)

- Evaluate success of short-term rehabilitation measures outlined above and remediate where necessary.
- Delivery of a monitoring, aftercare and maintenance programme (See section 9 below).

- Decommissioning of silt-ponds will be assessed and carried out, where required.
- Reporting to the EPA will continue until the IPC Licence is surrendered.

8.5 Timeframe

- **2026**: Short-term planning actions.
- **2025-2026**: Short-term delivery actions.
- **2026**: Long term delivery actions. Evaluate success of short-term rehabilitation measures outlined above and remediate where necessary.
- **2028**: Decommission silt-ponds, if necessary.

8.6 Budget and costing

BnM maintains a provision on its balance sheet to pay for the future costs of standard rehabilitation and decommissioning. This is updated every year - for more information see the BnM Annual Report (BnM, 2025). BnM is fully committed to meeting its obligations relating to rehabilitation and decommissioning under the Integrated Pollution Control Licence.

At this time, a 'standard' rehabilitation provision (sufficient to discharge the requirement of Condition 10 in the licence) has been allocated to the site based on the area of different cutaway types across the site

9. AFTERCARE AND MAINTENANCE

9.1 Programme for monitoring, aftercare and maintenance

This programme for monitoring, aftercare and maintenance has been designed to meet the Conditions of the IPC Licence. This is defined as:

- There will be **initial quarterly monitoring assessments** of the site to determine the general status of the site, the condition of the silt ponds, assess the condition of the rehabilitation work, monitoring of any potential impacts on neighbouring land, general land security, boundary management, dumping and littering.
- **Water quality monitoring** at the bog will be maintained. The main objective of this water quality monitoring will be to establish a baseline and then monitor the impact of peatland rehabilitation on water quality from the bog.
- Monitoring results will be maintained, trended and reported on each year as part of the requirement to report on Condition 10.1 of the IPC Licence on Bog Rehabilitation in the Annual Environmental Report, which will be available in April each year at www.epa.ie.
- The parameters to be included (as per condition 6.2 of the IPC Licence) include monthly monitoring for pH, Suspended Solids, Total Solids, Total Phosphorus, Total Ammonia, Colour, and COD and DOC.
- If, after two years, key criteria for successful rehabilitation are being achieved and key targets are being met, then the water quality monitoring will be reviewed, with consideration of potential ongoing research on site. The water quality data, the aerial surveys and the habitat mapping will be collated and will be submitted to the EPA as part of the final validation report.
- If, after two years, key criteria for successful rehabilitation have **not** been achieved and key targets have **not** been met, then the rehabilitation measures and status of the site will be evaluated and enhanced, where required. This evaluation may indicate no requirement for additional enhancement of rehabilitation measures but may demonstrate that more time is required before key criteria for rehabilitation has been achieved. Monitoring of water quality will then also continue for another period to be defined.
- Where other uses are proposed for the site that are compatible the provision of biodiversity and ecosystem services, these will be assessed by BnM in consultation with interested parties. Other after-uses can be proposed for licensed areas and must go through the required assessment process and planning procedures.

9.2 Rehabilitation plan validation and licence surrender – report as required under condition 10.4

IPC Licence Condition 10.4. *A final validation report to include a certificate of completion for the Rehabilitation Plan, for all or part of the site as necessary, shall be submitted to the Agency within six months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.*

Reporting to the EPA will continue until the IPC Licence is surrendered. The bog will be included in the full licence surrender process as per the Guidance to Licensees on Surrender, Cessation and Closure of Licensed Sites EPA, 2012, when:

- The planned rehabilitation has been completed.

- The key criteria for successful rehabilitation have been achieved and key targets have been met;
- Water quality monitoring demonstrates that water quality of discharge is stabilising or improving; and
- The site has been environmentally stabilised.

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APPENDIX I: BOG GROUP CONTEXT

The Littleton Bog Group IPC Licenced area was in industrial peat production for several decades until 2017. There are 11 defined bog units covering a total area of 4,421 ha. Each bog area further comprises a range of habitats from bare milled peat former production areas to re-colonising cutaway to workshops areas and transport infrastructure. Industrial peat extraction from these sites mainly supplied briquettes (Littleton Brickette Factory), horticulture and commercial turf for domestic use.

Industrial peat extraction across the majority of the Littleton Bog Group ceased in 2017. (Killeen extended to 2021). Littleton Brickette Factory finally ceased production in 2021. All licences for sod turf production also ceased during this period.

The Littleton Rehabilitation Programme started in 2018. Rehabilitation was planned and implemented across all of the Littleton Bogs. A range of different strategies was implemented across different sites, which reflect variable underlying environmental conditions and land-uses and potential future land-uses at the time.

Drain-blocking was carried out at Ballysorrell Bog and Knockahaw Bogs with the objective of raised bog restoration. These bogs had not had significant peat extraction and retained raised bog restoration potential. Rehabilitation measures at Templetouhy took account of the Bruckana Windfarm, which was is operational since 2015. Bawnmore, Littleton, and Derryville were developing cutaway habitats already as scrub and wetland, and targeted measures were carried out through these sites to enhance these developing habitats. More intensive drain-blocking was carried out across Carrickhill, Inch, Ballybeg, Derryvilla, Longford Pass and Killeen Bogs, particularly where there was recent industrial peat extraction and there were functional drains and bare peat dominated. Pumping ceased at Carrickhill, Inch and Baunmore. Some pumping continued for various periods at Derryville, Longford Pass and Littleton, due to operational issues. Some fertiliser treatments were carried out at Carrickhill and Derryvilla in 2020 as a pilot rehabilitation project.

Rehabilitation measures so far has been very effective. The majority of the targeted areas have been re-wetted. Ballysorrell and Knockahaw Bogs are responding quite quickly to the new conditions with the development of Sphagnum and improvement in bog conditions. Areas at Templetuohy, Bawnmore, Littleton and Derryvilla are changing quickly with the development of existing habitats and new pioneer vegetation where there was bare peat. Habitats at Killeen and Lanespark are developing and integrating with the new greenway amenity. Areas in Carrickhill, Inch and Killens that where large areas of bare peat in 2018 have been slower to recolonise due to underlying environmental factors (deeper residual peat).

A project called the BnM/Coillte Midlands Native Woodland Project was developed over the same period (Midlands Native Woodland - Coillte). It was proposed to be funded and administered by the Forest Service. The main objective of this proposed project is to develop and enhance native woodland in areas of cutaway that would remain naturally dry, developing woodland habitat that would naturally complement wetland and peatland habitats already developing across these sites. An initial feasibility study was carried out in 2018 and a project was developed across the Littleton bogs, which finally identified 120 ha of cutaway to be developed as woodland. This project has piloted alternative methods to establish native woodland, including seeding, and these trials were carried out at Bawnmore. This proposed project has not been approved by the Forest Service yet. Areas of cutaway at Carrickhill, Bawnmore, Inch, Ballybeg and Killeen have been proposed as part of this project.

The Littleton Labyrinth is a proposed amenity project that was also developed during this period, in partnership with Tipperary County Council. Initially a feasibility study was carried out that looked at developing greenway

amenity, and associated facilities across the Littleton Bogs, and potential links to existing infrastructure and local villages/towns. The first phase of this project was developed by Tipperary County Council in 2023/24, and a greenway was constructed on former BnM industrial railway though Killeen and Lanespark Bog to link with Loch Doire Bhile amenity, north of Lanespark. There are proposals to develop a Phase 2 shortly, with additional links being planned in Ballybeg and Derryvilla Bogs. This project is in pre-planning and is funded via Failte Ireland.

BnM rehabilitated several bogs in the Littleton Bog Group via Peatland Climate Action Scheme in 2025. The main objective of this proposed Phase 2 rehabilitation is to look at enhancing re-wetting and development of pioneer vegetation to support climate action, where possible. Measures are likely to include targeted drain-blocking, use of fertiliser to encourage pioneer vegetation growth, water-level management (adjustment of outfalls and use of over-flows). Bogs included Templetouhy, Derryville, Carrickhill, Baunmore, Inch, Ballybeg, Inch and Killeens.

A breakdown of the component bog areas for the Littleton Bog Group IPC Licence Ref. P0499-01 is outlined in Table Ap-1. Industrial peat production history varies across the Littleton bog group, so there is a wide range of peat depths at present.

Table Ap-1: Littleton Bog Group names, area and indicative status

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
Carrickhill	170 ha	Cutover Bog Industrial peat production started in the 1970's and ceased in 2017. There is residual deep peat across much of this site. Carrickhill had a partially pumped drainage system.	Carrickhill Bog formerly supplied peat to the Littleton briquette factory. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities. The pump was decommissioned in 2018. Drain blocking was carried out in 2018. A fertiliser treatment on part of the headland was carried out in 2021. The majority of the site is still mostly bare peat. Carrickhill is proposed for the Coillte/BnM Midlands Native Woodland Project. 28 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service.	2017	Draft 2018 Phase 1 Rehab measures implemented 2018-2021. Updated 2025. Phase 2 PCAS measures ongoing 2026
Templetuohy	737 ha	Cutover Bog Industrial peat production commenced at Templetuohy Bog in 1940's. Areas began to develop as cutaway during the 1980s as peat extraction ceased on a phased basis. Industrial peat extraction finally ceased in 2017. This bog has a partially pumped drainage system. Part of the site has developed pioneer cutaway habitats. Areas re-developed for peat extraction in 2015-17 are now revegetating quickly. Areas that were used for peat extraction upto 2017 are a	Templetuohy Bog formerly was developed to supply fuel sod peat and also supplied peat to the Littleton briquette factory. BnM have constructed a 40MW Wind Farm with 14 turbines and road network on cutaway at Templetuohy bog called Bruckana Wind Farm. This windfarm is operational. Pumping is still operational across this site to support the windfarm infrastructure.	2017	Draft 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025. Phase 2 PCAS measures ongoing 2026

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
		mosaic of re-wetted bare peat and pioneer communities.			
Derryville	250 ha	Cutover Bog Industrial peat production commenced at Derryville Bog in 1970's. Areas began to develop as cutaway during the 2000s as peat extraction ceased on a phased basis. Peat extraction finally ceased in 2017. This bog has a partially pumped drainage system.	Derryville Bog formerly supplied peat to the Littleton briquette factory. Part of the site has been developed for conifer forestry and is leased to Coillte. Part of the site was sold to Lisheen Mine and removed from the IPC Licence in the 2000s. Much of the former production area on site is developing pioneer cutaway vegetation communities, the remainder of the site is bare peat and developing wetland. Pumping continued at Derryville until 2022. Pumping has now ceased, and measures have been implemented in 2024 to manage water levels across the site and to decommission the pump.	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025 Phase 2 PCAS measures ongoing 2026
Bawnmore	531 ha	Revegetating cutover bog. Industrial peat production commenced at Baunmore Bog in 1970's. Areas began to develop as cutaway during the 2000s as peat extraction ceased on a phased basis. Peat extraction finally ceased in 2017. Much of the site is now developing a mosaic of woodland, peatland and wetland habitats. Baunmore had a partially pumped drainage regime.	Bawnmore Bog formerly supplied peat to the Littleton briquette factory. Much of the site is developing pioneer cutaway habitats and the site has significant biodiversity value. Pumping ceased in 2018. Part of the access is used for log biomass storage (for Edenderry Power). Bawnmore is proposed for the Coillte/BnM Midlands Native Woodland Project. 39 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service.	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025 Phase 2 PCAS measures ongoing 2026
Ballysorrel	196 ha	Drained raised bog – This site was initially drained for peat extraction. It was developed for peat production in the 1970s, but milled peat harvesting only occurred over a short 2 year timeframe. The site was then left as a peat reserve to be re-developed in the future. Restoration/drain blocking carried out in in 2018.	Much of the site was bare peat in the early 2000s. The site has since re-vegetated naturally (in a drier situation) since then and is now responding quickly to the recent re-wetting. Much of the high bog has re-colonised with Heather-dominated vegetation. Small hummocks of *Sphagnum* capillifolium and S. subnitens are present. *Sphagnum* spp. are also present in some low-lying areas that are permanently waterlogged and are spreading.	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025 Phase 2 PCAS measures ongoing 2026
Inch	120 ha	Cutover Bog Industrial peat production since 1970s. Finally ceased in 2017. Inch had a partially pumped drainage regime.	Inch Bog formerly supplied peat to the Littleton briquette factory. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities with deep peat areas slow to colonise and remaining mostly bare peat. Pumping ceased in 2018.	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
			Inch is proposed for the Coillte/BnM Midlands Native Woodland Project. 19 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service.		Updated 2025 Phase 2 PCAS measures ongoing 2026
Longford Pass (Popes Bog)	214 ha	Cutaway Bog Peat production at Longford Pass bog commenced in the 1940's and finally ceased in 2017. Peat extraction ceased and cutaway habitats began to develop on a phased basis. Longford Pass has a partially pumped drainage system.	Longford Pass Bog initially was developed as a sod turf production site. It then formerly supplied peat to the Littleton briquette factory. The site was bisected by the construction of the N8 Motorway in 2000s. A small area between the new motorway and R639 (old main road) was leased and developed for farmland in 2018. Longford Pass is part of the proposed Littleton Windfarm Project. This project is currently in pre-planning. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities with deep peat areas slower to colonise. Pumping continued at the site until 2022, when the pumping failed. Since then, measures have been carried out to manage water-levels.	2017	Finalised 2018 Rehab measures implemented 2018-2021 Updated 2026
Ballybeg, Lanespark and Derryvilla	474 ha	Cutaway Bog Industrial peat production since 1970s and finally ceased in 2017. Peat extraction ceased and cutaway habitats developed on a phased basis during this period. .	Ballybeg, Lanespark and Derryvilla initially were developed for sod turf production, and then formerly supplied peat to the Littleton briquette factory. Part of the site has been developed for conifer forestry and is leased to Coillte. Part of Lanespark/Derryvilla (Loch Doire Bhile) was developed as fishing lake and an amenity site in 1999-2002. This site is leased to Slieve Ardagh Rural Development. A greenway was constructed across the site as part of the Littleton Labyrinth Project in 2024, connecting the historical site of Derrynaflan to Loch Doire Bhile amenity, via Lanespark. Additional greenway is proposed to extend amenity through Derryvilla and Ballybeg as part of Failte Ireland. Midlands Trail project. This is currently in pre-planning. Ballybeg and Lanespark are proposed for the Coillte/BnM Midlands Native Woodland Project. 21 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service .	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025 Phase 2 PCAS measures ongoing 2026
Killeen	632 ha	Industrial peat production commenced at Killeen Bog in 1980s. Industrial peat extraction finally ceased in 2021.	Killeen bog formerly supplied peat to the Littleton briquette factory and the horticultural market. Re-wetting was carried out across the site in 2021. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation	2017	Finalised 2018 Phase 1 Rehab measures implemented 2018-2021

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
			communities with deep peat areas slower to colonise since the site was re-wetted. A greenway was constructed across the site as part of the Littleton Labyrinth Project in 2024, connecting the historical site of Derrynaflan to Loch Doire Bhile amenity, via Lanespark. Killeen is proposed for the Coillte/BnM Midlands Native Woodland Project. 31 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service .		Updated 2025 Phase 2 PCAS measures ongoing 2026
Littleton	1,020 ha	Cutaway Bog Littleton is a relatively old industrial peat production bog. Large-scale industrial peat production began in the 1940's where sod peat was produced for fuel. Sod peat production was mechanised during the 1950's. Milled peat production began in the 1970's and milled peat was supplied to the Briquette factory (constructed in 1981) at Lanespark. Peat extraction ceased and cutaway habitats developed on a phased basis since the 1890s and some well-established cutaway habitats have developed. Industrial peat extraction finally ceased in 2018. Littleton has a partially pumped drainage system.	Littleton Bog formerly supplied sod peat before supplying peat to the Littleton briquette factory. Older cutaway has already extensively colonised with pioneer cutaway, wetland and scrub habitats. Part of the site has been developed for conifer forestry and is leased to Coillte. A small area (10 ha) was used as a pilot biomass project and Eucalyptus was planted in 2018. Some pumps in Littleton Bog have been decommissioned and some have been retained but are non-functional.	2017	Finalised 2018 Rehab measures implemented 2018-2021 Updated 2026

See Drawing number *BNM-ECO-26-11-24 Littleton: Bog Group Map*, included in the accompanying Mapbook which illustrates the location of Longford Pass Bog and the Littleton Bog Group in context to the surrounding area.

APPENDIX II: ECOLOGICAL SURVEY REPORT

Ecological Survey Report

Note: This report outlines an ecological survey of the bog. This report should not be taken as a management plan for the site as other land-uses may still be considered. Information within this report may inform the development of other land-uses and identify areas with particular biodiversity value.

Sections of this report were written pre cessation of industrial peat production. Updated information post peat production is indicated as 2026 data.

Bog Name:	**Longford Pass (Pope's Bog**	**Area (ha):**	278ha
Works Name:	Littleton	**County:**	Tipperary
Recorder(s):	MMC & BO'L	**Survey Date(s):**	28/04/2010 (section adjacent to motorway) 10/09/2012 11/12/2017

Habitats present (in order of dominance)

The most common habitats present at this site include:

- Bare peat
- Poor fen vegetation (pJeff/pEang) (in mosaic) (Codes refer BnM classification of pioneer habitats of production bog)
- Dry heath (dHeath) (in mosaic)
- Open Birch scrub (oBir) (in mosaic)
- Dry/wet grassland (gMol)
- Temporary open water (TOW) (wet sections)
- Riparian zones (old silt ponds and culverted streams/drains along motorway embankment)
- Small wetland pools with open water and poor fen vegetation (pRos)
- Access routes (Acc) (railways, travel paths and gravel paths with associated scrub/dry heath verges)

Description of site

Longford Pass (Pope's Bog) is located in Co. Tipperary, 5 km south-west of Urlingford. It is part of the Littleton Bog Group. Littleton Bog is located to the south of Longford Pass and Bawnmore is located to the north. A BnM railway passes through Longford Pass Bog along the eastern margin and connects this bog and bogs to the north to the wider Littleton network, where milled peat is transferred to Lanespark Briquette factory. The bog is also situated adjacent to the old N8 Cork-Dublin road and the new M8 motorway bisects the southern part of the site. The bog is located in a lowland landscape and is surrounded on two sides by farmland. Peatland to the north and south of the main site has been developed for conifer forestry and is also used for private sod peat cutting. The main section can be accessed from the northern end with a travel path along the eastern margin leading south to a tea centre. A local road marks the northern boundary of the site.

Former production bog section

The majority of the main part of the bog was in active milled peat production until recently and is bare peat. The southern margin of this section is marked by the railway and this divides this section from the adjacent cutaway. The railway also branches at the southern end and there is a small side-branch that extens along the south-west and southern margins to the south-west corner of the site. There are several small areas where the underlying glacial sub-soil is being exposed and there is some colonisation at the drain margins. These areas are generally associated with low mounds and ridges underlying the bog that are now being exposed. This vegetation is generally dominated by Soft Rush (pJeff) but can also contain Purple Moorgrass (gMol) and other frequent grasses like Bog Cotton, Creeping Bent and Sweet Vernal-grass (gAn-Ho-Eq). Other typical species include Rosebay Willowherb and Colt's-foot. A small area at the south-west corner has come out of production recently and is being vegetated by pioneer poor fen (pJeff). There is also some open water and several small pools in this small section.

There are several small areas around the industrial peat production bog that contain open water. This is probably temporary as there is very little wetland development or any emergent vegetation associated with these pools. A deep outfall has been dug in the south-west section and left open. Both sides are now vegetated by Birch scrub that has colonised the spoil from the outfall, some of which is dense. The southern end has some exposed gravel (glacial

mixed till) and some more open grassland habitat (gCal, gMol, DisTuss). The most recent survey (December 2017) noted areas of open water present in parts of the northern, southern and eastern sections of the site. Surface water ponding in these areas is considered to be temporary in some areas with no wetland vegetation recorded within areas of open water.

The very southern part of this section has a small area of industrial peat production bog west of the railway. A small pool was located just north of the spilt in the railway. This was filled with water during the first survey (2010) but has subsequently been drained and is vegetated by pioneer Bulbous Rush-dominated poor fen. Further west there is a small depression where there is some Bog Cotton colonisation along the southern margin.

The majority of the northern part of the bog has been developed for industrial peat production and there is very little typical marginal peatland habitat along the eastern margin. A small section at the north-east corner has some remnant peat and is dominated by Gorse scrub and some dry heath and Purple Moorgrass-dominated vegetation, as it is so disturbed. Scrub extends along the eastern margin but only really forms a hedgerow. The western margin of the bog supports mature birch woodland in association with Holly (*Ilex aquifolium*). The ground flora constitutes Honeysuckle (*Lonicera periclymenum*), Ivy (*Hedera helix*), Bramble (*Rubus fruticosus* agg.), Fern sp. (*Dryopteris* sp.) and the mosses *Pseudoscleropodium purum* and *Thuidium tamariscinum*. There are also several open sections with degraded bog habitats (Heather-dominated vegetation). There are also several small sections along the south-west margin that have remnant high bog (one of which was developed for milled peat production in past) and now contain typical very degraded high bog or secondary cutover bog habitats with scrub, Heather-dominated dry heath and Purple Moor-grass (*Molinia caerulea*) dominated vegetation. Furthermore, there is an area of remnant raised bog located in the north-western section of the site which supports degraded raised bog communities (facebank and marginal ecotopes) and supports several relic high hummocks (>25cm) of *Sphagnum capillifolium* (subsp. *rubellum*) and *Sphagnum subnitens*. Other typical raised bog plant communities and mosses included Ling Heather (*Calluna vulgaris*), Deer-grass (*Trichophorum germanicum*), Cross-leaved Heath (*Erica tetralix*), Common Cotton-grass (*Eriophorum angustifolium*), Hare's-tail Cotton-grass (*Eriophorum vaginatum*), Reindeer Lichen (*Cladonia portentosa*) and *Sphagnum papillosum*. Sphagnum cover is less than 10%.

Former production-related cutaway north of motorway

The eastern side of the area between railway and the motorway has been out of production for some time (prior to 2000) and has naturally recolonised with a mosaic of pioneer habitats. These pioneer habitats are mainly dry and dominated by dry heath (Heather dominated), open Birch scrub and poor fen vegetation dominated by Soft Rush. They are still in the pioneer stage and there are still significant patches of bare peat or areas covered just with bryophytes within the vegetation mosaic. Some Rowan, Pine and Sitka Spruce are present in the scrub along with Birch and Willow. There are a series of small pools present towards the eastern side of this mosaic that contain Bottle Sedge (pRos) and other aquatic and emergent species such as Mint, Bog Cotton and Pondweed. These pools may be the result of some more recent activity or disturbance as they look to be younger than the surrounding cutaway. *Calliergonella cuspidata* and *Fissidens* sp. were present in a drain with some impeded drainage. The central zone contains small patches with exposed sub-soil that are also being colonised by Heather, Birch, Soft Rush and mosses such as *Campylopus introflexus* and *Polytrichum juniperum.* These habitats extend north in sections as far as the BnM railway. The railway side of this area is more open and there are several sections of bare peat and/or bare peat/poor fen mosaics where there has been more recent industrial peat production.

The western side of this area (adjacent to the railway) is not so well-developed and is dominated by bare peat. These fields have been out of production for a shorter period (between 2000-2004) compared to the western side. There are small areas of bare peat/poor fen vegetation dominated by Soft Rush. This section is at a somewhat lower level compared to the adjacent higher ground being vegetated by the mosaic. Some of the ground is wet and the drainage is impeded and some of the ground has heavy bog timber cover.

Plastic located in this section of bog has now been removed.

Former production-related cutaway south of motorway

This area has been leased and is now being developed for agriculture.

Isolated sections at the south of the site

There are two separate sections of bog at the southern end that lie south of the old N8 Dublin-Cork road and adjacent to Littleton bog to the south. These sections were never developed for milled peat production. The railway passes along the eastern side of the western section. Both sections are used for private sod peat production. The eastern section is also used by Littleton Shooting Club. A band of conifer plantation has been planted along the road to form a screen.

The western section still has some intact high bog, although much of the surface of this section is now bare peat, and has been developed in the past 12 years. . The eastern section is much more disturbed and contains some sections that are in active use, which have bare peat, and some inactive sections of various ages that are recolonising with a range of typical pioneer cutaway habitats.

Designated areas on site (SAC, NHA, pNHA, SPA other)

None

There are no European Designated Sites in close proximity (i.e. within a 5km radius at minimum) to Longford Pass Bog.

The nearest European Designate Site is the The Loughans SAC (site code: 000407) which is located approximately 7.4km to the east of Longford Pass Bog.

There are also no NHA's (Natural Heritage Areas) or pNHA's (Proposed Natural Heritage Areas) within a 5km radius of Longford Pass Bog.

Adjacent habitats and land-use

The area surrounding the site is dominated by improved farmland, which is grazed by cattle or being used for production of potatoes. Some adjacent peatland was developed for conifer forestry (WD4) and some remnant high bog (PB1) is also being cut privately for sod peat (PB4).

Watercourses (major water features on/off site)

- Longford Pass is located within the River Suir catchment.
- The main section of bog is divided into two main catchments. The western half flows towards the south-west corner of the bog and is treated by a silt-pond at this location. This silt-pond drains west via channelized streams/drains to the Dinish River.
- The eastern section flows north and is treated by a silt-pond north of the road. A pump has been installed to pump water from this catchment across the road. This silt-pond drains north via a drain to meet the Black River.
- There are no significant rivers or lakes on or adjacent to this site.
- A small stream/drain that flows along the southern boundary of part of the site has been culverted and has a typical riparian zone. A second new drain has been developed along the embankment of the new motorway. A settlement pond is located adjacent to the site and the motorway at the eastern side.

Peat type and sub-soils

Dark fen peat is the main peat type exposed in the northern section of bog. There may be some patches of more acidic peat exposed in the production-related cutaway areas that have now colonised with Heather-dominated vegetation.

The main section of production bog seems to be underlain by a glacial mixed till, which is found under most of the other bogs in the Littleton group. This till is a mixture of gravel, pebble, rock and silty marl.

The eastern section of the main production bog has a relatively deep peat reserve with between 4-5 m of peat. This section may have been the original basin where there bog formed and therefore may be underlain by some lacustrine shell marl deposits.

Fauna biodiversity

Several species were noted on the site during the survey.

- Bird species recorded include Willow Warbler, Blackbird, Swallow, Wren, Chiffchaff and Grey Crow (2010)
- Bird species recorded in 2012 included Wood Pigeon, Wren, Rook (40), Grey Crow (5), Redpoll, Goldcrest, Blackbird and Swallow.
- Birds recorded in 2017 included Chaffinch, Great Tit, Redpoll, Blackbird, Robin, Wren, Meadow Pipit, Buzzard and Snipe.
- Mammal species noted on site included Fox and Rabbit (2010 & 2017).
- Signs of Rabbit noted at several locations around the bog (2012).

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Fossitt, J. (2000). A guide to habitats in Ireland. Kilkenny. The Heritage Council.

NRA (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes (Revision 2). National Roads Authority.

APPENDIX III: ENVIRONMENTAL CONTROL MEASURES TO BE APPLIED TO BOG REHABILITATION

- Bog restoration/rehabilitation measures will be restricted to within the footprint of the proposed rehabilitation area.
- The proposed rehabilitation will have due regard to noise limits and hours of operation (i.e. dusk and dawn) to minimise any potential disturbance on resident and local fauna that utilise the site and immediate environs.
- All plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations (SI 359/1996).
- The proposed activities will be restricted to daylight hours and there will be no requirement for artificial lighting.
- Silt ponds will be inspected and maintained as per the IPC Licence.
- During periods of heavy precipitation and run-off, activities will be halted.
- Measures will be carried out using a suitably sized machine and in all circumstances, excavation depths and volumes will be minimised where possible.
- All machines will be regularly checked and maintained prior to arrival at the site to prevent hydrocarbon leakage.
- Hoses and valves will be checked regularly for signs of wear and will be closed and securely locked when not in use.
- Fuelling and lubrication of equipment shall only be carried out in designated areas away from surface water drainage features and ecologically sensitive areas.
- Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or re-cycling.
- Vehicles will never be left unattended during refuelling.
- No direct discharges to waters will be made. No washings from vehicles, plant or equipment will be carried out on site.
- All plant refuelling will take place using mobile fuel bowsers. Only dedicated trained and competent personnel will carry out refuelling operations.
- Mobile storage such as fuel bowsers will be bunded to 110% capacity to prevent spills. Tanks for bowsers and generators shall be double skinned. When not in use, all valves and fuel trigger guns from fuel storage containers will be locked. All pumps using fuel or containing oil will be locally and securely bunded where there is the possibility of discharge to waters.
- Potential impacts caused by spillages etc. during rehabilitation will be reduced by keeping spill kits and other appropriate equipment on-site.
- Site activities will be carried out in accordance with 'best practice'. In order to ensure compliance and implementation of 'best practice', these measures will be communicated to relevant BnM staff and updated as required.

APPENDIX IV: BIOSECURITY

The potential for importation or introduction of non-native plant species (such as Japanese Knotweed, Himalayan Balsam, etc.) during future rehabilitation management, such as drain-blocking using excavators, has the potential to result in the establishment of invasive species within the site. Section 49 of the European Communities (Birds and Natural Habitats) Regulations 2011 prohibits the introduction and dispersal of invasive alien species (particularly plant species) listed on Part 1 (third column) of the 'Third Schedule'.

This section aims to reduce the risk from, and impacts of, invasive species and protecting biodiversity on lands under BnM ownership. Rehabilitation and decommissioning in the bog will have due regard to the relevant biosecurity measures outlined below:

- Records of problematic invasive species within the various bog units will be marked out with signs to highlight areas of infestation to personnel.
- All plant machinery will be restricted from disturbing known colonies of invasive species.
- All plant machinery will avoid unnecessary crossings to adjoining lands.
- Good site hygiene will be employed to prevent the introduction and spread of problematic invasive alien plant species (i.e. Japanese Knotweed (*Fallopia japonica*), Himalayan Balsam (*Impatiens glandulifera*), Himalayan Knotweed (*Persicaria wallichii*), etc.) by thoroughly washing vehicles prior to entering the area.

The biosecurity measures outlined above are in line with best practice guidelines issued by the National Roads Authority (NRA, 2010) – The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads and broadly based on the Environment Agency's (2013) – The Knotweed Code of Practice: Managing Japanese Knotweed on Development Sites (Version 3, amended in 2013).

In addition to the above, Best Practice measures around the prevention and spread of Crayfish plague[5] will be adhered with throughout all rehabilitation measures and activities.

[5] https://www.biodiversityireland.ie/projects/invasive-species/crayfish-plague/

APPENDIX V: POLICY AND REGULATORY FRAMEWORK

BnM Plc (BnM) is a publicly owned company, originally established in 1934 to develop some of Ireland's extensive peat resources for the purposes of economic development and to support energy security. In the decades since its establishment the company has employed tens of thousands of people in its fuel, energy, and horticultural growing media businesses. For much of its history the company's support of important national policy aims has been enabled and encouraged in a variety of ways by Government.

Today, BnM is undertaking a number of highly significant actions in support of climate policy. These actions involve a radical transformation and decarbonisation of nearly the entire BnM business. This transformation will be driven by unlocking the full potential of our land and creating significant value for Ireland and the Midlands in particular.

BnM is an integral part of the economic, social, and environmental fabric of Ireland and Irish life. As a key employer in the Midlands, the company is conscious that its obligations go beyond purely commercial and environmental – there is also a social responsibility to employees and the communities served by BnM. It is the company's role and absolute priority to ensure that its long-term strategy delivers on all of these important areas in a robust and balanced way.

There are a wide range of policies, plans, legislation and land designations that inform the development of this BnM peatland rehabilitation plan. BnM have also developed and operate various policies and strategies that also inform the development of this rehabilitation plan.

1 EPA IPC Licence

BnM operates under IPC Licence issued and administered by the EPA to extract peat within the Littleton Bog group (Ref. P0-499-01). As part of Condition 10.2 of this licence, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area. The bog is part of the Littleton Bog group. This regulatory requirement is the main driver of the development of this rehabilitation plan.

2 The Peatlands Climate Action Scheme (PCAS)

BnM (BnM) understand that it is the Minister's (DECC) intention to impose an obligation on BnM to develop a programme of measures, 'the Scheme', for the enhanced decommissioning, rehabilitation and restoration of boglands previously used to supply peat for electricity generation within the State. The enhanced decommissioning, rehabilitation and restoration of the peatlands funded by the Scheme (PCAS) will deliver benefits across climate action (GHG mitigation through reduced carbon emissions and acceleration towards carbon sequestration), enrich the State's natural capital, increase eco-system services, strengthen biodiversity, improve water quality and storage attenuation as well as developing the amenity potential of the peatlands.

It is envisaged that BnM carry out an enhanced decommissioning, rehabilitation and restoration, under the Scheme (PCAS), and supported by the Climate Action Fund and Ireland's National Recovery and Resilience Plan across a footprint of 33,000 ha. This scheme will significantly go beyond what is required to meet rehabilitation and decommissioning obligations under existing EPA IPC licence conditions. Interventions and measures supported by the Scheme will ensure that environmental stabilisation is achieved (meaning IPC obligations are met), and importantly, significant additional benefits, particularly relating to climate action and other ecosystem services, will also be delivered. However, only the additional costs associated with the additional and enhanced

rehabilitation, i.e., those activities which go beyond the existing decommissioning and rehabilitation requirements arising from Condition 10 will be eligible for support under the Scheme.

3 National Climate Policy

The National Policy Position establishes the fundamental national objective of achieving a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050. It sets out:

- the context for the objective;
- clarifies the level of GHG mitigation ambition envisaged; and
- establishes the process to pursue and achieve the overall objective.

The evolution of climate policy in Ireland will be an iterative process based on the adoption by government of a series of national plans over the period to 2050. GHG mitigation and adaptation to the impacts of climate change are to be addressed in parallel national plans – respectively through the National Climate Action Plan. The plans will be continually updated, as well as being reviewed on a structured basis at appropriate intervals and, at a minimum, every five years. This will include early identification and ongoing updating of possible transition pathways to 2050 to inform sectoral strategic choices.

BnM is following a decarbonisation programme aimed at reducing the carbon emissions from its activities. Industrial peat production has now ceased, and several other decarbonisation measures are being implemented. The company aims to further develop renewable energy and resource recovery markets with a key objective of reducing the carbon intensity of all products. In addition, the carbon emission mitigation benefits associated with the post-peat extraction rehabilitated peatland following re-wetting, revegetation and colonisation of significant areas with native woodland will make a significant contribution to achieving the State's carbon emission reduction targets.

4 National Peatlands Strategy

The National Peatlands Strategy (2015) contains a comprehensive list of actions, necessary to ensure that Ireland's peatlands are preserved, nurtured and become living assets within the communities that live beside them. It sets out a cross-governmental approach to managing issues that relate to peatlands, including compliance with EU environmental law, climate change, forestry, flood control, energy, nature conservation, planning, and agriculture. The Strategy has been developed in partnership between relevant Government Departments/State bodies and key stakeholders through the Peatlands Council.

The strategy recognises that Ireland's peatlands will continue to contribute to a wide variety of human needs and to be put to many uses. It aims to ensure that Ireland's peatlands are sustainably managed so that their benefits can be enjoyed responsibly. It aims to inform appropriate regulatory systems to facilitate good decision making in support of responsible use. It also aims to inform the provision of appropriate incentives, financial supports and disincentives where required. The strategy attempts to strike an appropriate balance between different needs, including local stakeholders like turf-cutters and semi-state bodies such as BnM.

In line with a National Peatlands Strategy recommendation, a Peatlands Strategy Implementation Group (PSIG), was established, assisted in the finalisation of the Strategy, is overseeing subsequent implementation and will report to Government on an annual basis on the implementation of the actions and principles contained within the Strategy.

BnM is a key stakeholder in the National Peatlands Strategy and the Peatlands Strategy Implementation Group. The strategy recognises the potential for some BnM sites to be restored and to contribute to the national SAC and NHA network of protected raised bog sites. The strategy (agreed in 2015) also recognises the various different values of cutaway bog and developed six key principles (with BnM) for the after-use of cutaway bog.

- BnM will continue to assess and evaluate the potential of the company's land bank, using a land use review system. The assessment will help prepare a set of evidence-based management plans for the various areas of peatland. These plans will also inform its cutaway bog rehabilitation.
- The policy of BnM is not to open up any undrained new bogs for peat production.
- Lands identified by BnM as having high biodiversity value and/or priority habitats will be reserved for these purposes as the principal future land use.
- Generally, BnM cutaway bogs that flood naturally will be permitted to flood unless there is a clear environmental and/or economic case to maintain pumped drainage.
- In deciding on the most appropriate afteruse of cutaway peatlands, consideration shall be given to encouraging, where possible, the return to a natural functioning peatland ecosystem.
- This will require re-wetting of the cutaway peatlands which may lead in time to the restoration of the peatland ecosystem.
- Environmentally, socially and economically viable options should be analysed to plan the future use of industrial cutaway peatlands, in conjunction with limiting factors as outlined in BnM's Strategic Framework for the Future Use of Peatlands.

The National Peatlands Strategy highlights the importance and value of developing peatland rehabilitation plans for BnM cutaway sites and implementing this peatland rehabilitation. Some of these principles have now been superseded by the company's decision to cease industrial peat extraction. The National Peatlands Strategy is currently being reviewed by Government.

5 National River Basin Management Plan 2022-2027 (Water Framework Directive)

The River Basin Management Plan for Ireland 2022-2027 (Department of Housing, Local Government and Heritage, 2022) is the key national plan for Ireland to achieve the objectives of the Water Framework Directive (WFD). In broad terms, the objectives of the WFD are (1) to prevent the deterioration of water bodies and to protect, enhance and restore them with the aim of achieving at least good status and (2) to achieve compliance with the requirements for designated protected areas.

The NRBMP 2022-2027 outlined how peat extraction can be a potentially significant pressure on various water quality parameters. Peatland rehabilitation of BnM cutaway (in addition to other measures) was part of the WFD (2022-2027) programme of measures. The NRBMP 2022-2027 takes account of the fact that BnM was in the process of phasing out the extraction of peat for energy production, that it set a target to rehabilitate 9,000 ha of cutaway bogs (covering 25 peatlands) by 2021 (in 2018) and will look to implement best-available mitigation measures to further reduce water quality impacts caused by peat extraction while the phasing-out process is taking place. This NRBMP 2022-2027 rehabilitation target was superseded by the acceleration of the BnM de-carbonisation programme and the Scheme (PCAS).

The development of site rehabilitation plans and the delivery of peatland rehabilitation by BnM was expected to have a positive impact on water quality and will help the NRBMP 2022-2027 deliver its objectives in relation to the Water Framework Directive and is one of the five key principal actions.

The NRBMP 2022-2027 describes how the number of waterbodies impacted by peat, industry and forestry have decreased by 10, 10 and 5 waterbodies, respectively since the second cycle. Impacts on water quality and river habitat arising from peat and peat extraction and associated drainage include the release of ammonium and fine-grained suspended sediments, and physical alteration of aquatic habitats. Drainage of peatlands also results in changes to the hydromorphological condition of rivers.

The NRBMP 2022-2027 outlines how maintaining and restoring Irish bogs will lead to a decrease in waterborne carbon leaching to levels comparable with intact bogs as well as reducing losses of peat silt and ammonia. Vegetation on the surface of the peat can also slow the flow of water over the land surface. Based on the EPA's most recent reports, peat extraction and drainage is impacting on 106 water bodies across the country, with peat the single pressure on 28 of these water bodies. However, compared to the data in the second-cycle plan, the number of water bodies impacted by peat has decreased.

The cessation of industrial peat extraction by BnM in 2021 was expected to have a significant positive impact on water quality of receiving water courses by reducing the impact of peat extraction as a key pressure on particular water courses. This is now being supported by the results and conclusions of the draft NRBMP 2022-2027.

6 4th National Biodiversity Action Plan 2023-2030

Ireland's 4th National Biodiversity Action Plan (NBAP) sets the national biodiversity agenda for the period 2023-2030 and aims to deliver the transformative changes required to the ways in which we value and protect nature. The 4th NBAP has been developed with the support, advice and input of the interdepartmental Biodiversity Working Group and the independent Biodiversity Forum. Ireland's 2nd National Biodiversity Conference was held to gather insights and recommendations for the development of the NBAP and a public consultation process was held to provide further opportunities to engage with the Plan.

The 4th NBAP strives for a "whole of government, whole of society" approach to the governance and conservation of biodiversity. The aim is to ensure that every citizen, community, business, local authority, semi-state and state agency has an awareness of biodiversity and its importance, and of the implications of its loss, while also understanding how they can act to address the biodiversity emergency as part of a renewed national effort to "act for nature".

The delivery of rehabilitation is expected to significantly contribute in the future to actions and targets of the 4th National Biodiversity Action Plan 2023-2030, particularly in relation to peatland restoration, nature restoration and creation of new habitats such as wetlands and woodlands.

7 EU Nature Restoration Law

The EU Nature Restoration Law is a key element of the EU Biodiversity Strategy, which sets binding targets to restore degraded ecosystems, in particular those with the most potential to capture and store carbon and to prevent and reduce the impact of natural disasters. The regulation combines an overarching restoration objective for the long-term recovery of nature in the EU's land and sea areas with binding restoration targets for specific habitats and species. These measures should cover at least 20% of the EU's land and sea areas by 2030, and ultimately all ecosystems in need of restoration by 2050.

This regulation has now been adapted and it is expected that all Member States will be required to produce a National Restoration Plan within two years of adoption. This will be led by the National Parks and Wildlife Service

and will comprise a broad and deep public participation process, informed by robust ecological and socio-economic impact assessments. BnM are working with NPWS to identify bog restoration and other re-wetted cutaway sites that can contribute towards Irelands targets for the Nature Restoration Law.

8 National conservation designations

BnM operates in a wider landscape that also includes a network of European and National nature conservation sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs), National Heritage Areas (NHAs, pNHAs) and National Nature Reserves). BnM will take account of this network of conservation objectives and their conservation objectives when developing these rehabilitation plans. It is expected that peatland rehabilitation will, in general, benefit the conservation objectives of this network of nature conservation sites.

9 National Raised Bog Special Area of Conservation Management Plan 2017-2022.

The National Raised Bog Special Area of Conservation Management Plan 2017-2022 sets out a roadmap for the long-term management, restoration and conservation of protected raised bogs in Ireland. The Plan strikes an appropriate balance between the need to conserve and restore Ireland's raised bog network as part of Ireland's commitments towards the EU Habitats Directive, and the needs of stakeholders and gives recognition to the important role that communities have to play in the conservation and restoration of raised bogs. The National Raised Bog Special Areas of Conservation (SACs) Management Plan 2017-2022 is part of the measures being implemented in response to the on-going infringement action against Ireland in relation to the implementation of the EU Habitats Directive, with regard to the regulation of turf cutting on the Special Areas of Conservation (SACs). The then Minister for Arts, Heritage and the Gaeltacht, also published a **Review of Raised Bog Natural Heritage Area Network** in 2014.

BnM has also responded to the needs of the National Raised Bog Special Area of Conservation Management Plan (NRBMP) and provided several sites to the government for the relocation of turf-cutters from SACs. This is part of a suite of ongoing bog conservation measures in the NRBMP to manage turf-cutting in protected sites. BnM and the National Parks and Wildlife Service continues to engage regarding the ongoing relocation of turf-cutters from protected raised bog sites.

10 All-Ireland Pollinator Plan 2021-2025

The All-Ireland Pollinator Plan 2021-2025 outlines key objectives and actions to protect and support pollinating insects and the habitats they rely on. A BnM specific action in this plan includes the adoption of pollinator-friendly management within the BnM network of sites. One action to help achieve this objective is habitat rehabilitation and restoration, where possible, of pollinator-friendly habitats, including peatland habitats.

11 Land-use planning policies

As BnM operates in many counties across Ireland, it is important to note the respective development plans in these counties. Many of the existing development plans recognise the potential that exists in the after-use of cutover/cutaway peatlands. BnM seeks to work with all of the relevant local authorities to ensure that the most appropriate after-uses are reflected in local planning policy. The following areas of consistent importance are of

both direct and indirect relevance to BnM: heritage, tourism, biodiversity/conservation, landscape, renewable energy, and economy/enterprise.

12 National Archaeology Code of Practice

BnM operated under an agreed Code of Practice (COP) regarding archaeology with the Department of Arts, Heritage and the Gaeltacht and the National Museum of Ireland which provided a framework to enable the Company to progress peat extraction whilst carrying out archaeological mitigation. (https://www.archaeology.ie/sites/default/files/media/publications/cop-bord-na-mona-en.pdf).

Under the Code, BnM, the Minister and Director worked together to ensure that appropriate archaeological survey and mitigation was carried out in advance of peat extraction.

As peat extraction ceased in 2019, the remaining elements of the COP that are still applicable include:

- BnM must ensure that any newly discovered monuments on BnM lands are reported in a timely manner to the National Monuments Service of the Department of Arts, Heritage and the Gaeltacht.
- BnM must ensure that any archaeological objects discovered on BnM lands are reported immediately to the Duty Officer of the National Museum of Ireland.
- BnM will adhere to the Archaeology Code of Practice relating to management of any archaeological finds that may arise during cutaway peatland rehabilitation and decommissioning.

13 Bord na Móna Biodiversity Action Plan 2016-2021

Rehabilitation of industrial peatlands is a key objective of the Bord na Móna Biodiversity Action Plan 2016-2021. This action plan outlines the main objectives and actions around biodiversity on BnM lands. The Bord na Móna Biodiversity Action Plan also outlines key International and European policy in relation to biodiversity. This includes the **United Nations Convention on Biodiversity 2011-2020 (CBD)** and **European Biodiversity Strategy to 2020**. Further details of these policies and BnM s responses can be found in the Bord na Móna Biodiversity Action Plan (Bord na Móna, 2016). Both policy documents highlight targets such as reducing pressure on biodiversity, promoting sustainability, habitat restoration and benefits of ecosystem services.

One example of a key CBD target is:

- *"Restore at least 15% of degraded areas through conservation and restoration activities."*

The EUs headline target for progress by 2020 is to:

- *"halt the loss of biodiversity and the degradation of ecosystems in the EU by 2020, restore them as far as feasible, while stepping up the EU contribution to averting global biodiversity loss."*

This rehabilitation plan is aligned to the CBD target and the EU Biodiversity Strategy target and will help Ireland meet its commitment to these international Biodiversity polices.

14 BnM commitments

BnM made the commitment in 2009 not to develop any new peatland sites for industrial peat production. The company has continued to work with different stakeholders.

In line with BnM's accelerated decarbonisation programme, the company made a further commitment to a significantly larger rehabilitation target. This was reflected in our plans to rehabilitate a further 20,000 hectares of cutaway and cutover bog to wetland and woodland mosaics by 2025. In addition, we planned to restore a further 1,000 hectares of raised bog habitat by 2025. These initial targets have been achieved.

The company announced the cessation of industrial peat production in 2021 and that it would rehabilitate a target of 33,000 ha between 2021-2026. Rehabilitation measures will continue to be carried out with the focus on re-wetting and rehabilitation of cutover and cutaway areas in line with national policies (such as the National Peatland Strategy, the National Biodiversity Action Plan, The Nature Restoration Law, the Climate Action Plan, the Water Framework Directive, etc.) and rehabilitation guidelines set down by the Environmental Protection Agency. BnM has now transitioned to a Climate Solutions company with a key commercial and development focus being the delivery of renewable energy to support Ireland's Climate Action Plan. In general, BnM will seek to balance and optimise commercial, social, and environmental value of its bogs, and develop integrated land-uses, while taking account of the need for sustainability and their biodiversity value.

These commitments outline the importance of peatland rehabilitation to BnM. The company will continue to demonstrate environmental responsibility and continue to deliver on these commitments in relation to peatland rehabilitation and in relation to the future management of these lands to maximise their benefits, particularly their ecosystem service benefits, along with the sustainable development of a portion of the land bank for other uses, such as renewable energy.

APPENDIX VI: DECOMMISSIONING

1. Condition 10 Decommissioning

Under condition 10.1, BnM must decommission relevant infrastructure and other materials that supported peat extraction, that may result in environmental pollution.

10.1.1 Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

To date across all of BnM's peatlands that have been rehabilitated, this has entailed removal of rail infrastructure, plant, equipment, materials, and waste.

In relation to this bog, this was primarily rail to be lifted and any associated polybrane materials, production plant and equipment, any waste materials including stockpile covering, stored at production centres.

During the decommissioning of this bog, these materials were either brought to a central roadside location to be removal via a licensed waste provider or brought centrally to the nearest main works site, either Littleton or Templetuohy for removal as waste, to be either recycled or deposited to landfill.

Records, EWC codes, waste treatment operations, weights, descriptions and final destinations of these wastes are reported each year in the Annual Environmental Report (AER) and the Environmental Performance Report (EPR) and are available at the EPA's Licensing & Enforcement Access Portal (LEAP).

Rail lifting is ongoing in Longford Pass in 2026 and is expected to be completed this year, as is the removal of some residual pumping infrastructure.

In relation to this bog, the list and tasks would be as follows:

Item	Description	Longford Pass Decommissioning Plan
1	Clean-up of remaining or unconsolidated waste or materials located in Bogs, Yards, Buildings and Offices	Clean-up of Bog
2	Cleaning Silt Ponds	Cleaning Silt Ponds
3	Decommissioning Peat Stockpiles	Peat Stockpile Management
4	Decommissioning or Removal of Buildings and Compounds	Decommissioning or Removal of Buildings and Compounds
5	Decommissioning Fuel Tanks and associated facilities	Where relevant
6	Decommissioning and Removal of Bog Pump Sites	Where relevant
7	Decommissioning or Removal of Septic Tanks	Where relevant

In addition, condition 7 of the licence requires these now defined waste items to be disposed of or recovered as follows:

7.1 Disposal or recovery of waste shall take place only as specified in *Schedule 2(i) Hazardous Wastes for Disposal/Recovery* and *Schedule 2(ii) Other Wastes for Disposal/Recovery* of this licence and in accordance with the appropriate National and European legislation and protocols. No other waste shall be disposed of/recovered either on-site or off-site without prior notice to, and prior written agreement of, the Agency.

7.2 Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as agreed by the Agency, and only transported from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the environment.

7.3 A full record, which shall be open to inspection by authorized persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall as a minimum contain details of the following:

7.3.1 The names of the agent and transporter of the waste.

7.3.2 The name of the persons responsible for the ultimate disposal/recovery of the

waste.

7.3.3 The ultimate destination of the waste.

7.3.4 Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site.

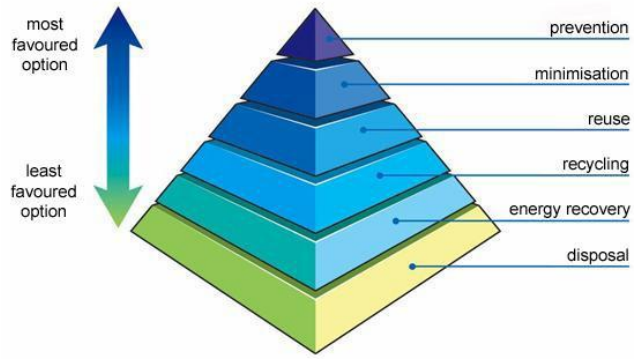
7.3.5 The tonnages and EWC Code for the waste materials listed in *Schedule 2(i) Hazardous Wastes for Disposal/Recovery* and *Schedule 2(ii) Other Wastes for Disposal/Recovery* sent off-site for disposal/recovery.

7.3.6 Details of any rejected consignments.

A copy of this Waste Management record shall be submitted to the Agency as part of the AER for the site.

As required by the licence, these waste items will be removed for recycling or disposal, using external contractors with the required waste collection permits, approved under 7.2, with waste records maintained as required under 7.3.

Where possible, BnM will utilize the appropriate waste hierarchy to identify waste that can reused or recycled ahead of disposal.



The validation of the success of condition 10.1 is carried out through an Independent Closure Audit (ICA), followed by and EPA Exit Audit (EA) and the eventual partial or full surrender of the licence.

2. Enhanced Decommissioning.

The remaining infrastructure does not constitute a risk to the environment and would not be a requirement of condition 10 of the licence. The removal of these are deemed as enhanced measures. These may enhance the future after use of the bog for amenity value, security against access for illegal and unsocial activities and general State and community benefit. In relation to this bog, this would include the infrastructure defined below:

Item	Enhanced Decommissioning Type	Longford Pass Decommissioning Plan
1	Removal of Railway Lines	Removal of Railway Lines
2	Decommissioning Bridges and Underpasses	Where Applicable
3	Decommissioning Railway Level Crossing	Where Applicable
4	Restricting Access (bogs and silt ponds)	Restricting Access to Bog
5	Removal of High Voltage Power Lines	Where Applicable

APPENDIX VII: GLOSSARY

Cutaway Bog: A BnM site generally becomes cutaway when it is economically unviable to continue industrial peat extraction or when the majority of peat has been removed.

Deep peat cutover bog. Deep peat cutover bog is defined as former raised bogs that have been in industrial peat production, where production has ceased but the residual peat depth is typically in excess of 2m. *Sphagnum* mosses are key species of raised bogs and the majority of the peat mass is formed from these mosses. *Sphagnum* species and other raised bog species are a key part of raised bog habitat function and prefer more acidic, nutrient poor, water-logged conditions. Typical raised bog *Sphagnum* mosses and other bog species do not thrive with the more typical alkaline water chemistry of cutaway bog but do grow well in these more acidic conditions where peat has been re-wetted. There is potential to re-develop *Sphagnum*-rich plant communities in these conditions if the peat can be re-wetted. This brings the opportunity of re-developing *Sphagnum*-rich vegetation communities that are considered Carbon sinks or peat-forming habitats and restoring the carbon sequestration function of these sites.

Dry cutaway bog: Cutaway bog is categorised as dry cutaway where it is not practical or feasible to re-wet these areas completely. It is inevitable that some areas of cutaway will remain relatively dry due to the heterogenous topography of the cutaway, as well as requirements for continued drainage on site for identified after-uses, or off site in relation to neighbouring lands or other infrastructure. Ridges and mounds of glacial deposits can become exposed during peat extraction and form a heterogenous topographical mosaic separated by basins. Dry cutaway may have very thin or no residual peat where ridges and mounds have been exposed. The exposed sub-soils are a mix of glacial gravels, muds and tills that can be quite free-draining. Dry cutaway may also have deeper residual peat, but in a location (i.e. at the margin) where the peat cannot be re-wetted due to boundary constraints. Dry cutaway may also develop in situations where there a relatively steep slope that inhibits re-wetting. The majority of dry cutaway will develop towards grassland, heath, scrub and dry woodland habitats.

Enhanced decommissioning: This is defined as decommissioning carried out under the Scheme, which is proposed to be externally funded.

Enhanced rehabilitation: This is defined as rehabilitation carried out under Scheme, which is proposed to be externally funded. It is proposed by Government that BnM be obligated to carry out enhanced decommissioning, rehabilitation and restoration on peatlands. This Scheme will significantly go beyond what is required to meet rehabilitation and decommissioning obligations under existing EPA IPC licence conditions. Interventions and activities supported by the Scheme will ensure that environmental stabilisation is achieved (meaning IPC obligations are met), and importantly, significant additional benefits, particularly relating to climate action and other ecosystem services, will also be delivered. However, only the costs associated with the additional, enhanced and accelerated measures, i.e., those interventions which go beyond the existing decommissioning and rehabilitation requirements arising from Condition 10 will be eligible for support under the Scheme.

Environmental stabilisation: The key objective of peatland rehabilitation is environmental stabilisation. This means developing habitats and vegetation back onto the bare peat, slowing water movement across the bog, minimising effects to downstream waterbodies and meeting the conditions of the IPC Licence. This is achieved by a combination of re-wetting, where possible, and natural colonisation of the former cutaway, with or without intervention**.** Habitats will develop that reflect the underlying environmental conditions. Other after-use development may also serve to act as environmental stabilisation.

Marginal land. Marginal land is defined as land around the margin of the industrial peat production area. This margin generally contains a range of habitats including scrub, birch woodland, cutover bog and raised bog remnants. It has a variety of land-uses including turf-cutting (private turbary). The Scheme will consider potential rehabilitation and restoration actions (e.g. drain blocking) within marginal land zones, where appropriate.

Rehabilitation: Rehabilitation is defined in general by BnM as environmental stabilisation of the former cutaway. This is generally achieved via re-wetting, where possible, and natural colonisation of the former cutaway, with or without intervention. It is not possible to restore raised bog habitats on BnM cutaway in general in the short-term. In general, most of the peat mass has been removed from many BnM cutaway sites and the environmental characteristics of these areas have therefore changed radically (peat depths, hydrology, water chemistry, substrate type, nutrient status. This means there will therefore be different habitat outcomes (wetlands, fen, heathland, grassland and Birch woodland). Other after-use development may also serve to act as rehabilitation.

Restoration: Ecological restoration is defined as the process of re-establishing to the extent possible the structure, function and integrity of indigenous ecosystems and the sustaining habitats they provide" (SER, 2004). Defined in this way, restoration encompasses the repair of ecosystems (Whisenant, 1999) and the **improvement of ecological conditions in damaged wildlands** through the **reinstatement of ecological processes**. In general, BnM cutaway peatlands cannot be restored back to raised bog in a reasonable timeframe as their environmental conditions has changed so radically (with the removal of the acrotelm – the living layer and much of the peat mass). However, they can be returned to a **trajectory** towards a naturally functioning peatland system (Renou-Wilson, 2012). **Raised bog restoration** is an objective of some BnM sites where there is residual natural raised bog vegetation and where the majority of the peat is still intact.

Standard rehabilitation: This is defined as rehabilitation that is designed to meet the conditions of the EPA IPC Licence. The key objective of rehabilitation is environmental stabilisation. This is achieved by a combination of re-wetting, where possible, and natural colonisation of the former cutaway, with or without intervention**.** Other after-use development may also serve to act as rehabilitation.

Standard decommissioning: This is defined as decommissioning that is designed to meet the conditions of the EPA IPC Licence. This is defined as to render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

Wetland cutaway bog. Wetland cutaway bog is defined as former raised bogs that have been in industrial peat production, where production has ceased and the majority of peat has been cutaway, and where this cutaway has the potential to be re-wetted. A significant number of BnM sites have pumped drainage and these sites are likely to develop a mosaic of wetland habitats when pumping in reduced or stopped. The water chemistry of wetland cutaway frequently is strongly influenced by the more alkaline sub-soils that have been exposed during peat production. This means that pioneer vegetation is more typical of fen and wetland, rather than raised bog. Wetland cutaway will have a broad range of hydrological conditions depending on the local topography. In some cases, these wetlands may form deep water (> 0.5 m) whilst other areas may have the water table at or just below the surface of the ground.

APPENDIX VIII: EXTRACTIVE WASTE MANAGEMENT PLAN

(Minimisation, treatment, recovery and disposal)

Objective:
The objective of this generic plan is to comply with the requirements of regulation 5 of the Waste Management (Management of Waste from Extractive Industries) Regulations, and to prevent or reduce waste production and its harmfulness.

Scope:
This plan covers IPPC Licence's Ref P0499-01, Littleton Group of Bogs located in Co. Tipperary.

1.0 Extractive Waste:
Waste classified as extractive waste from peat extraction operations arise from three operations associated with this activity.

1.1 Silt Pond excavations and maintenance.
All peat extraction activities in the Littleton bog group are serviced by silt lagoons/ponds. During the excavation of these silt ponds, pre IPPC Licensing in 1999 and since licensing, the excavated material is stored adjacent to the silt pond, where it either remains in situ ores levelled out. As required by condition 6.6, these silt lagoons are cleaned twice per annum or more often if inspections dictate. These silt cleanings are also deposited on the same location, adjacent to the silt pond, where they may be levelled periodically to allow room for subsequent cleanings. These mounds of silt pond excavation material and cleanings are generally no higher that 2-3 metres.

1.2 Power Station screenings:
Lough Ree Power Station screens the peat from the bogs prior to processing. This screening removes oversized peat, stones and bogs timbers. Schedule 3 (ii) of the IPPC licence permits disposal of these peat screenings back to the bog, where it is levelled and graded into the surrounding peat landscape. These locations have been agreed with the Agency as per condition 7.4 of the IPPC Licence, and as per the attached locations.

1.3 Bog Timbers:
During peat extraction operations, bog timbers often arise in the bog surface and are required to be cleared. These timbers consist of bog pine, oak and some yew. Some of these timbers, such as the oak and yew are removed for use in the wood craft industry, with the remaining bog pine stockpiled in locations at the opposite end of each bog, where it generally becomes a habitat for flora and fauna. These piles of timber are generally no higher than 1-2 metres.

2.0 P0499-01 IPPC Licence Extractive Waste Conditions

2.1 Condition 7.5 Extractive Waste Management
The licensee shall draw up a Waste Management Plan (to be known as an Extractive Waste Management Plan) for the minimisation, treatment, recovery and disposal of extractive waste. This Plan shall meet the requirements of regulation 5 of the Waste Management (Management of Waste from the Extractive Industries) Regulations,2009. The Plan shall be submitted for agreement by the Agency by the 31' December 2012. The Plan shall be reviewed at least once every five years thereafter in a manner agreeable to the Agency and amended in the event of substantial changes to the operation of a waste facility or to the waste deposited. Any amendments shall be notified to the Agency.
All extractive waste shall be managed in accordance with the Extractive Waste Management Plan. A report on the implementation of the Extractive Waste Management Plan shall be provided in the AER.

2.2 Condition 7.6 Waste Facility

(i) No new waste facility may be developed or an existing waste facility modified unless agreed by the Agency.
(ii) The licensee shall ensure that all existing waste facilities are managed and maintained to ensure their physical stability and to prevent pollution or contamination of soil, air, surface water or groundwater.
(iii) The licensee shall ensure that all new waste facilities are constructed, managed and maintained to ensure their physical stability and to prevent pollution or contamination of soil, air, surface water or groundwater.
(iv) Operational measures shall be continuously employed to prevent damage to waste facilities from personnel, plant or equipment.
(v) The licensee shall establish and maintain a system for regular monitoring and inspection of waste facilities.
(vi) All records of monitoring and inspection of waste facilities, as required under the licence, shall be maintained on-site in order to ensure the appropriate handover of information in the event of a change of operator or relevant personnel.

2.3 Condition 7.7 Excavation Voids

7.7.1 Unless otherwise agreed by the Agency, only extractive waste shall be placed in excavation voids.
7.7.2 When placing extractive waste into excavation voids for rehabilitation and construction purposes, the licensee shall, in accordance with regulation 10 of the Waste Management (Management of Waste from the Extractive Industries) Regulations, 2009, and the Extractive Waste Management Plan:

- Secure the stability of the waste
- Put in place measures to prevent pollution of soil, surface water and ground water.
- Carry out monitoring of the extractive waste and excavation void.

Condition 7.5. Extractive Waste Management Plan. 5 (1)

3.0 Minimisation.

3.1 Silt pond excavation material and cleanings.

IPPC Licence conditions require all production areas to be serviced by an appropriately designed silt pond based on storage volume and retention time. Condition 6.6 requires all ponds to be cleaned bi-annually and more often if inspections dictate, so the only opportunity for minimisation of same is through Standard Operating Procedures. These are required under condition 2.2.2 (i) regarding minimisation of suspended solids, and are in-place to minimise the generation of silt, which in-turn will minimise the generation of silt pond waste.

3.2 Power Station Screenings.

These screenings cannot be minimised as they are a consequence of peat production, stones, timbers and oversize peat materials are naturally occurring on the bog, and are required to be removed prior to processing.

3.3 Bog Timbers.

Bog timbers are also naturally occurring materials within a bog and are required to be removed prior for production. The volume of these bog timbers varies from bog to bog and as such their minimisation is not controllable or quantifiable.

4.0 Treatment

4.1 Silt pond excavation material and cleanings.

The silt pond excavation material and silt cleanings do not require any treatment for its end use which will be either backfilling these silt pond voids as per condition 7.7.1 above as part of the Bog Rehabilitation Plan, or reincorporated into the surrounding peatlands.

4.2 Power Station Screenings.

The factory screenings are permitted to be returned to the bog as they were naturally occurring materials from the bog, and as such do not require any treatment to serve this purpose.

4.3 Bog Timbers
As per 1.3 above, these timbers are stockpiled at two locations in each bog, as per the attached list of sites and become habitats for various flora and fauna.

5.0 Recovery
5.1 Silt pond excavation material and cleanings.
Condition 2.2.2 (vi) requires the reuse of silt pond waste to be examined. This was undertaken in 2006, the outcome of which was that this waste peat silt material, as a fuel, was contaminated with sub-soils, rendering it unsuitable for combustion. In addition, volumes are small compared to overall peat production volumes.

5.2 Power Station Screenings.
Given the nature of these screenings as outlined in 1.2 above, there is no further use identified and they are permitted to be disposed of back to the bog.

5.3 Bog Timbers
Investigations into processing these materials into smaller fractions for potential heating purposes did not yield any viable results. In addition, these older stockpiles are now classified as habitats and as such would not be considered for reuse as a fuel.

6.0 Disposal
6.1 Silt pond excavation material and cleanings.
Schedule 3 (ii) permits the disposal of silt pond cleanings (Lagoon Sediments) to the bog and these locations, adjacent to the silt pond site, are presented in the attached spreadsheet, with associated grid coordinates.

6.2 Power Station Screenings.
Schedule 3 (ii) permits the disposal of screenings (Peat Screenings) to the bog at designated locations agreed under Condition 7.4, and these locations, are presented in the attached spreadsheet, with associated grid coordinates.

6.3 Bog Timbers
These naturally occurring bog timbers are stockpiled at locations in each bog, grid coordinates attached.

7.0 Extractive Waste Management Plan

5 (2a)(i)
The vast majority of peat extraction bogs were all designed and drained for production prior to the 1960's and as such the production fields layout cannot' be altered. Under our Cleaner Reduction Procedures, various design changes have been implemented to the production machines and process to reduce lost peat which eventually is captured in the silt ponds and requires removal as waste peat silt. This along with training and ongoing research and development will continuously reduce waste peat and subsequently waste silt pond cleanings. Bog timbers are present naturally in various volumes and quantities in different bogs and as peat production involves stripping peat in layers, the exposure, generation and removal of these timbers is unavoidable. Work has been undertaken recently into project looking at grinding of these bog timbers in situ using a timber miller, and if this project becomes viable it will contribute to the reduction of bog timbers.

5 (2a)(ii)
Given the nature and expanse of peat bogs, the stockpiling and storage of these waste materials do not present a visual, storage or stability problem. As required under Condition 10 of the IPPC Licence, the silt pond excavations and screenings will be utilised to backfill the silt pond voids once the bogs have finished and stabilised in accordance with out Bog Rehabilitation Plan. Storage of these wastes in the interim, open to the elements does

not present a change on the nature of these wastes that will threaten the environment or prevent their reuse during the bog rehabilitation process.

5 (2a)(iii)
Under Condition 10 of the IPPC Licence, all silt ponds will be decommissioned once the bog surface has stabilised, in agreement with the Agency. This will involve the removal of weirs and flow controls, returning the silt pond back to its original drain or removing the silt pond from the drainage system. Both of these activities will involve placing the silt pond extraction and cleaning material back into the excavation void.

5 (2a)(iv)
The peat bogs do not contain any topsoil, so this is not required.

5 (2a)(v)
Peat mineral resources do not undergo any treatment.

5 (2b)
These three extractive waste are all being reused and recovered back to their original extraction points and have not undergone any physical, chemical, or biological change.

5 (2c)(i, ii & iii)
These three extractive wastes, stored on the bog for reuse or recovery during the bog rehabilitation phase, do not require any management or monitoring during the operation of these bogs. Silt pond excavations and cleanings are stored adjacent to the silt pond and quickly revegetated and stabilise, the screenings are graded back into the bog at the agreed locations upon disposal and the bog timbers do not prevent any water or airborne danger to the environment.

5 (3)
The three extractive wastes arising from peat extraction operations at this site are classified wastes from mineral non-metalliferous excavation, with an EWC code of 0101 02. The materials are not classified as hazardous under Directive 91/689/EEC20, and do not contain substances or preparations classified as dangerous under Directives 67/548/EEC5 or 1999/45/EC6 above a certain threshold.
The peat excavations and cleanings are stored in locations and in a manner that they could not collapse, and are remote in their nature. The stockpiles are located adjacent to silt ponds that are cleaned regularly and as such these stockpiles are managed and levelled to facilitate further cleanings.
Therefore the material stored at these waste facilities would not be considered to be a Category A waste facility.

Classification in accordance Annex II.

Waste Material	Description	Classification	Chemical Process treatment	Deposition description	Transport System
Silt Pond Excavations and cleanings	Peat and mineral soils associated with peatlands. Stored for reuse during bog rehabilitation, with no displacement of overburden	01 01 02	None	Excavated from silt ponds by excavator and deposited adjacent to the silt pond.	Excavator
Peat Screenings	Stones, timbers and oversized peat particles, reincorporated into low	01 01 02	None	Removed by screen at the factory and	Tractor and trailer.

Waste Material	Description	Classification	Chemical Process treatment	Deposition description	Transport System
	areas, agreed with the Agency, and stabilized under normal natural bog conditions			transported by tractor and trailer to the designated and agreed locations	
Bog Timbers	Pine, Oak and Yew species, stored at locations in each bog. Not subject to any stability issues due to exposure to atmospheric/meteorological conditions.	01 01 02	None	Removed from the bog surface by excavator and transported by tractor and trailer to the agreed locations	Tractor and Trailer

Description of operations.
Silt pond excavations arise from the requirement to have silt ponds treating all peat extraction sites. Silt pond cleanings arise from the removal of peat silt from silt ponds as required under IPPC Licence. Bog timbers arise from preparation of the bogs surface for peat production. Estimated quantities of materials are below:

Closure plan. (Bog Rehabilitation Plan).
Condition 10.1 – 10.3 of the IPPC Licence requires the following:

- 10.1 Following termination of use or involvement of all or part of the site in the licensed activity, the licensee shall:
- 10.1.1 Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.
- 10.1.2 Implement the agreed cutaway bog rehabilitation plan (refer Condition 10.2).

10.2 Cutaway Bog Rehabilitation Plan:

- 10.2.1 The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area. This plan shall be submitted to the Agency for agreement within eighteen months of the date of grant of this licence.
- 10.2.2 The plan shall be reviewed every two years and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the written agreement of the Agency.

10.3 The Rehabilitation Plan shall include as a minimum, the following:

- 10.3.1 A scope statement for the plan; to include outcome of consultations with relevant Agencies, Authorities and affected parties (to be identified by the licensee).
- 10.3.2 The criteria which define the successful rehabilitation of the activity or part thereof, which ensures minimum impact to the environment.
- 10.3.3 A programme to achieve the stated criteria.
- 10.3.4 Where relevant, a test programme to demonstrate the successful implementation of the rehabilitation plan.
- 10.3.5 A programme for aftercare and maintenance.

10.4 A final validation report to include a certificate of completion for the Rehabilitation Plan, for all or part of the site as necessary, shall be submitted to the Agency within six months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment. This plan including maps and ecological classifications are available on file at the Allen Clonsast IPPC Licence Coordinators office.
The location in relation to the silt pond excavations and cleanings are adjacent to the silt ponds, which are considered under the Shannon River Basin Management Plan in accordance with the requirements of Directive 2000/60/EC.
Screenings and bog timbers are all naturally occurring elements of peatland and there placement back to the bog in smaller concentrated designated waste facilities does not constitute a risk to the prevention of water compliance.
The lands under where these materials are deposited are peatlands and are un-effected by the placing of this material.

Review.
This plan will be reviewed every five years, the first review to take place in September 2017. This review will entail an inspection of these waste facilities to ensure their placing, management, maintenance and stability comply with the requirements of the Extractive Waste Management requirements and condition 7.5, 7.6 and 7.7 of the Littleton IPPC Licence P0499-01.

APPENDIX IX: MITIGATION MEASURES FOR THE APPLICATION OF FERTILISER

- Any fertiliser used will be Rock Phosphate and will not be applied in the following conditions:
    1. The land is waterlogged;
    2. The land is flooded, or it is likely to flood;
    3. The land is frozen, or covered with snow;
    4. Heavy rain is forecast within 48 hours (forecasts will be checked from Met Éireann).
    5. The ground slopes steeply and there is a risk of water pollution, when factors such as surface run-off pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account.
- No fertiliser will be spread on land within 2 metres of a surface watercourse.
- Buffer zones in respect of waterbodies, as specified on https://www.epa.ie/resources/faqs/environment--you/faq-listing/ will be adhered with at all times with regard to fertiliser application. Reproduced as follows:

Water body / Feature	Buffer zone
Any water supply source providing 100m^3 or more of water per day, or serving 500 or more people	200 metres (or as little as 30 metres where a local authority allows)
Any water supply source providing 10m^3 or more of water per day, or serving 50 or more people	100 metres (or as little as 30 metres where a local authority allows)
Any other water supply for human consumption	25 metres (or as little as 30 metres where a local authority allows)
Lake shoreline	20 metres
Exposed cavernous or karstified limestone features (such as swallow holes or collapse features)	15 metres
Any surface watercourse where the slope towards the watercourse exceeds 10%	10 metres
Any other surface waters	5 metres*

APPENDIX X: CONSULTATION SUMMARIES

Table APX -1 Consultees contacted.

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Consultation undertaken in 2017-2018						
Baunmore	Private individual A		27/11/2017	Letter		
Littleton Bog Group	Irish Peatland Conservation Council	Several staff members		letter	14/02/2018	
Ballysorrell, Templetouhy, Baunmore	National Parks and Wildlife Service	Several staff members	6/02/2018	Site meeting	8/3/2018	
Lanespark	Private individual B		11/04/2018	Site Visit	11/04/2018	
Ballysorrell, Carrickhill Baunmore	NUIG	Several staff members	23/04/2018	Site Visit	23/04/2018	
Littleton Bog Group	Private individual C		25/04/2018	Phone	25/04/2018	
Derryvilla	Slieve Ardagh Rural Development Group	Several members	1/06/2018	Meeting	1/6/2018	
Littleton Bog Group	National Parks and Wildlife Service	Regional staff	24/05/2018	Email	1/06/2018	
Littleton Bog Group	General community meeting – Loch Doire Bhile, site visit to Baunmore		12/06/2018	Site Visit/meeting	12/06/2018	
Littleton Bog Group	National Parks and Wildlife Service	Regional staff	14/06/2018	Site visit	14/06/2018	
Littleton Bog Group	Tipperary County Council	Heritage Officer	23/06/2018	Phone	23/06/2018	
Derryvilla	Private Individual D		27/06/2018	Meeting	27/06/2018	
Littleton Bog Group	Birdwatch Ireland	Several staff members	1/08/2018	Email	3/08/2018	
Littleton Bog Group	Irish Peatland Conservation Council	Several staff members	1/08/2018	Letter	15/08/2018	

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Littleton Bog Group	Kilkenny County Council	Heritage Officer	1/08/2018	Email	3/08/2018	
Littleton Bog Group	National Parks and Wildlife Service	Several staff members	1/08/2018	Letter	9/10/2018	
Littleton Bog Group	Irish Peatland Conservation Council	Several staff members	30/08/2018	Meeting	30/08/2018	
Littleton	Forest Service	Several staff members	14/08/2018	Email	14/08/2018	
Baunmore & Littleton	Birdwatch Ireland – Tipperary Branch	Several staff members	1/10/2018	Site visit	1/10/2018	
Littleton Bog Group	Tipperary County Council	Several staff members	5/11/2018	Email	19/11/2018	
Littleton Bog Group	Tipperary Heritage Forum	Several staff members	15/02/2019	Presentation	15/02/2019	
Knockahaw	Private Individual E		1/02/2019	Site Visit	1/02/2019	
Littleton Bog Group	Environmental Protection Agency, National Parks and Wildlife Service, Irish Peatland Conservation Council	Several staff members	26/02/2019	Presentation meeting	26/02/2019	
Baunmore	Irish Wildlife Trust	Several staff members	12/05/2019	Site Visit/Walk	12/05/2019	
Lanespark Derryvilla	National Parks and Wildlife Service and Slieve Ardagh Rural Development Group – Loch Doire Bhile	Several staff members	22/05/2019	Meeting	22/05/2019	
Longfordpass	Private Individual F		5/07/2019	Site visit	5/07/2019	
Ballysorrell	Heritage Week Walk - Ballysorrell	Several staff members	17/08/2019	Site Visit/Wak	17/08/2019	
Baunmore Carrickhill	Limerick Institute of Technology (LIT)	Several staff members	13/09/2019	Site visit	13/09/2019	

APX -2 Response summary from Consultees contacted

Organisation	Summary of Response by Stakeholder	BnM Response
NPWS 8/3/2018	Ballysorrell All walked over the bog and viewed the bog restoration works. MCC outlined work carried out so far and work planned for the future. Planned work is > 75% complete. NPWS staff very complementary of the bog restoration work (drain-blocking with peat dams) carried out so far. All agreed that the bog had significant potential for bog restoration, and future nature conservation. Signs that the bog is already re-wetting in places due to drain-blocking. Review and discussion of NPWS degraded raised bog model outputs for Ballysorrell. Model predicted that 9 ha would have potential for development into active raised bog in the future. General view was that this was probably an under-estimate and that the model likely to be affected by the intensive BnM drainage network. Discussion of potential measures to further increase re-wetting of the bog including berms across high bog at southern section. Bruckana All visited the Bruckana Windfarm. Viewed a cutaway bog area within the windfarm complex where there has been significant natural colonisation for at least 20 years and some targeted hydrological management. Discussion of the former history of Templetuohy Bog as a sod turf production bog. Sod turf cutaway tends to have deeper remnant peat, which in turn can develop Sphagnum-rich vegetation, where conditions suit. Attendees viewed some wet cutaway where there has been some Sphagnum colonisation. Discussion of environmental conditions that led to the development of this specific vegetation type. Discussion of potential to re-wet similar cutaway, with similar environmental conditions and deeper peat, to encourage development of Sphagnum-rich peat-forming vegetation. Discussion of different constraints and opportunities for this type of re-wetting. This Sphagnum-rich peat-forming vegetation only has potential to develop in certain environmental conditions in association with deeper peat. NPWS staff suggested that intensive bunding would have potential to increase the overall re-wetted area. There was general discussion of potential larger project opportunities, in association with planned BnM rehabilitation or future BnM afteruse development. These larger projects could potentially focus on GHG emission reduction, creation of peat-forming habitats, biodiversity enhancement, other ecosystem services enhancement/restoration. Baunmore All visited Baunmore cutaway. Baunmore is a typical milled peat cutaway with pumped drainage and with shallower remnant peat more typical of milled cutaway in the Littleton Bog Group, in contrast to Bruckana. All walked part of the bog where some recent rehabilitation trials have been carried out. MMC pointed out the recent field drain blocking using a bull-dozer that has been carried out so far. The target here was to block drains, re-establish surface drainage and re-wet peat. This work has already successfully held back surface water in places. The cambered fields and variable topography mean that a proportion of the peat fields remain dry. The expected habitat development is a mosaic of poor fen wetland communities, Reed swamp and scrub/wet woodland. MMC explained how blocking the field drains is Phase 1 of the planned rehab trial and that Phase 2 will involve blocking outfalls and cutting new overflow drains to further manipulate overall water levels. The overall strategy is to maximise the area of re-wetted peat with water levels close to the peat surface and emergent wetland communities. NPWS staff also suggested that more intensive bunding would have potential to increase the overall re-wetted area and help manage water levels. All then examined some cutaway that is colonising naturally with pioneer vegetation. This cutaway is much more alkaline compared to Bruckana with indicators such as the presence of Black Bog-rush.	

Organisation	Summary of Response by Stakeholder	BnM Response
Tipperary Cunty Council	The draft plan is an overview of the rehabilitation within the Littleton bog group this comprises of 12 bog areas. The plan is developed under Condition 10 of IPC Licence Ref. P0499-01. (An incorrect licence ref. is given in the plan.) Any consideration for future after uses for the bog areas will be subject to the planning regulatory framework and the Environment section will be obliged to comment at this time on a more detailed proposal. The rehabilitation plan should include best practice measures for the restoration of an optimal range of biodiversity and ecosystems. The aftercare management activities on the level, quantity and quality of water both on site and in the surrounding landscape should avoid any unnecessary deterioration in the quality and quantity of ground and surface waters. After use, peatland water levels and flow regimes should be restored to as close to the natural reference conditions as possible. Any works carried out must be detailed and all stakeholders consulted.	
Irish Peatland Conservation Council	The IPCC welcome the zonation of Ballysorrell Bog for biodiversity and the decision not to develop it for peat resources (Page 3). Ballysorrell Bog is quite southerly in its location and its rehabilitation and zonation for biodiversity will help to extend the range of raised bog habitat in Ireland, which according to "The Status of EU Protected Habitats and Species in Ireland | 2013" (NPWS, 2013) is "BAD". We have a few questions and points to make on the draft rehabilitation plan with the aim to improving its content. It is good to see that BnM will be restoring the hydrology of the high bog through drain blocking as mentioned on Page 4 and that you also intend to carry out a trial rehab programme of a selected area for training purposes. Could you please elaborate on this? What training/trials do you intend to conduct and is it only inhouse training for BnM staff? The rehabilitation process may be a good time to test the Canadian method of Sphagnum transfer as there would be time to prepare the site prior to drain blocking. Please give this suggestion consideration as you indicated the peat present as light red brown Sphagnum peat (Page 9). There is Sphagnum on site that could be harvested and used as a donor inoculum for a Sphagnum trial. Page 5 gives information on the short and long-term time-frames of the plan. Could you give more details on the methods that will be utilised to monitor the hydrology i.e. will piezometers be used to measure water levels and will they be measured before drain blocking? This could ensure that any hydrological successes will be shown. In addition, how frequently will the ecotope mapping be conducted? Page 3 details the time-line for the development of Ballysorrell ("Ballysorrell was originally developed....."). Could this historical timeline be re-written as it is difficult to follow. For instance, when did the private sodpeat cutting around the bog cease? When did the milled peat production cease? Could you please specify how Ballysorrell Bog will help to achieve the national conservation target for active raised bog and supporting habitat in Ireland? Are there plans to formally designate this site in the future? Thank you for giving us this opportunity to make some comments on this welcome initiative by Bord na Mona.	
NPWS 9/10/2018	The Department, particularly, welcomes the restoration measures proposed for Ballysorrell Bog and Knockahaw Bog which will result in the development of active raised bog habitat and acknowledge that this will significantly aid Ireland in meeting its commitments under the EU Habitats Directive. Whilst it is appreciated that "the rehabilitation measures will be adapted to the various baseline conditions" (Part 1, pg.20) the Department recommends that BnM consider more fully the potential for forward-planning during production phases of its operation so that the topography of the commercial fields could be engineered so as to best facilitate rewetting of the sites. Such an approach would better conform to Principle 17 (afteruse of cutaway peatlands) of the National Peatlands Strategy (2015). The Department recommends that the ongoing research into the interaction between rehabilitation measures and carbon emissions is prioritized so as to better inform future rehabilitation plans. In the absence of the assimilation of such research outputs into rehabilitation planning it is nonetheless recommended that serious consideration is giving to reprofiling works within the Littleton Bog Group. In relevant sites this could greatly improve the baseline conditions for rewetting and would be justified on the basis that rewetted cutaway has lower carbon emissions that dry, bare cutaway. The foregoing is in line with Principle 19 (contribution of peatland rehabilitation and restoration to climate change mitigation and adaption) of the National Peatlands Strategy. There is some difficulty interpreting the maps due to their complexity and the size of the legend. Maps showing specific restoration actions would be useful, possibly in the form of an	

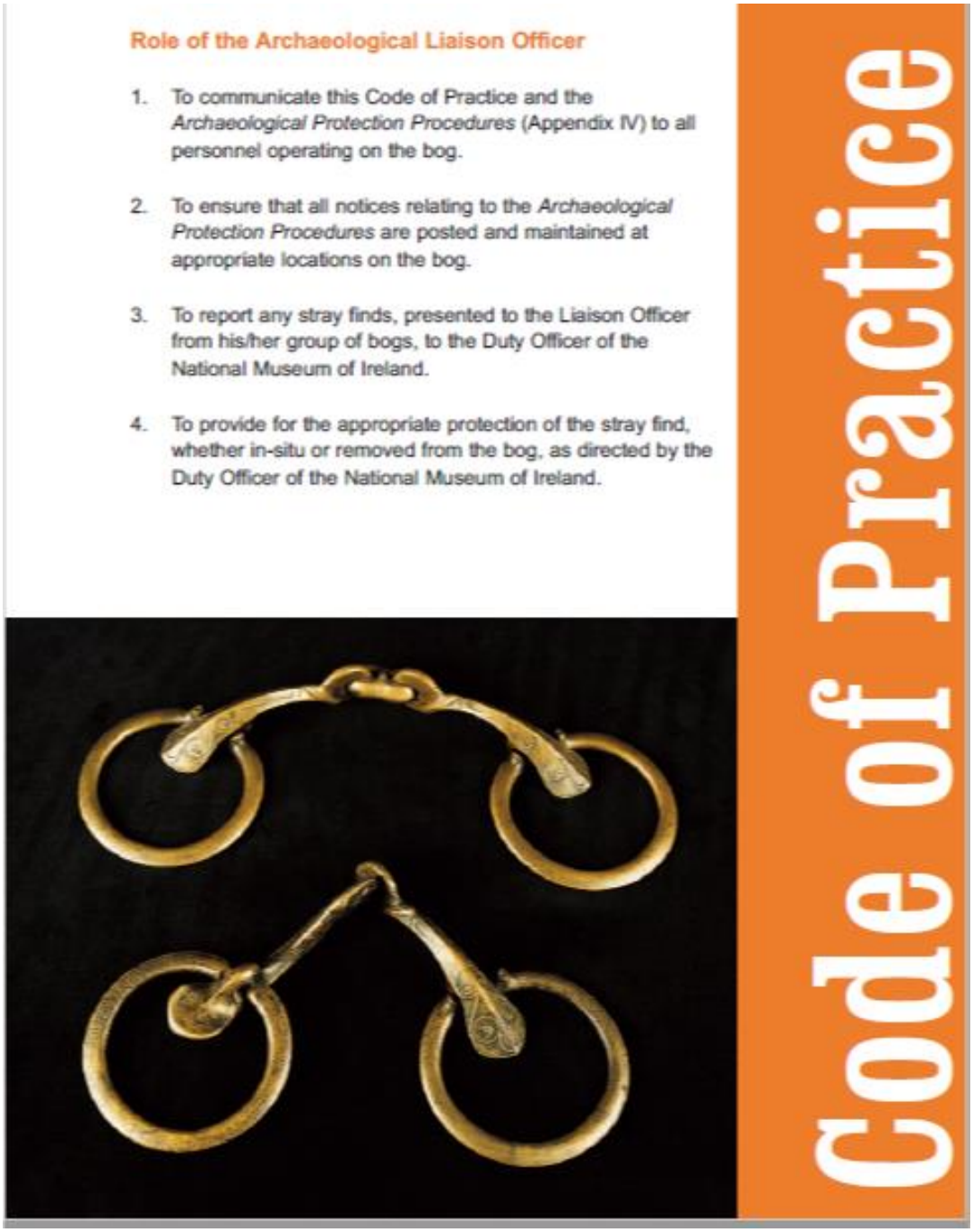
Organisation	Summary of Response by Stakeholder	BnM Response
	overview grid at a scale 1:35,000 with more detailed mapping as per grid squares. Eco-hydrological modelling based on LiDAR/DTM would be essential to ascertain the potential to achieve wet habitats with the potential to turn into carbon sinks. ….. 2 The Department is keen to continue engagement with BnM as regards investigating more engineered restoration techniques likely to provide results in line with the principles of the National Peatlands Strategy. The NPWS of the Department would welcome an opportunity to meet with you to allow for the Plan to be presented by your Ecology Team and to further explore the options of external funding such as EU LIFE funding, as discussed in previous meetings.	
IPCC 15/08/2018	Could you please clarify the correct area for the group of 12 sites included: is it 5050ha (Page 11, Section 4.2) or is it 4824ha (Page 11, Table 1). If it is the latter could you clarify what the other 226ha constitutes please. IPCC's principal interest in this plan lies in the future of existing acid peat bog remnants, the potential of the cutaway areas to provide biodiversity value and priority habitats for nature conservation, climate change mitigation and the extent to which the plan meets requirements of the National Peatlands Strategy 2015. The area of peatland included in the Littleton Bog Group is significant in the county of Tipperary as it represents one third of the original area of raised bog that occurred in the whole County particularly concentrated in South Tipperary (Hammond 1979 Peatland Map of Ireland) the southern distribution range for raised bogs described in the Status of EU Protected Habitats and Species. In your plan on Table 5 only two bog restoration sites (Ballysorrell and Knockahaw) are proposed covering an area of 567ha. Can you explain the method used in choosing these areas for bog restoration and were any other sites considered within the group? IPCC maintain that two sites is far too little considering the area of the land in the Littleton Group and the lack of any sites of conservation value in this area of former raised bog distribution. We note that Killeens Bog contains acidic peat and that it appears to be earmarked for horticultural peat (sod moss judging from the satellite photograph) should this be required. On Page 16 in conclusion 5 the plan states that this bog could be restored if horticultural peat extraction is stopped. IPCC strongly recommend the immediate cessation of this activity on this site and its inclusion in the restoration sites plan. We have reasoned with BnM on numerous occasions about the continued national production of horticultural peat as we do not agree that this use represents responsible management as defined in principle P24 in the National Peatlands Strategy. We understand that Sod Moss is regarded in economic terms as a "lost leader" product which negates any economic argument for keeping this site in production. Here in Littleton where BnM have exploited over 5000ha of Tipperary's natural peatland resources, all peat production should cease and every effort should be made to restore suitable acid peat resources to living bog where they exist. In this regard on Page 15 (Section 4.3.1.1 [ii]) two further sites with acid peat are mentioned - Carrickhill (substantial raised bog cutover east and west of the cutaway) & Inch (raised bog cutover to the south west of the cutaway) - why are these sites not being included in the bog restoration sites line-up? In the IPCC Sites Database we have a site named Longford Pass - Littleton Bog which is a remnant raised bog that we surveyed with a former BnM employee Sean Canney and which we subsequently used for educational purposes with local schools with the agreement of BnM. We would like to see this site included in the bog sites restoration list. (Grid ref. = S 23023 59319). IPCC are very unclear about your aims for the non-designated sites with considerable wildlife interest described on Page 21 of the plan. We estimate that there are 10 sites mentioned that are noteworthy for birds, crustaceans and invertebrates. In addition a further 3 rehabilitation sites are included in the BnM Biodiversity Plan. On the one hand BnM makes use of the fact that cutaway bogs are rich in biodiversity as part of the "Naturally Driven" image you like to portray but we can see no substantial commitment to undertake targeted management actions in relation to enhancing and maintaining these species on the sites. For example on Page 19 you state that without additional funding targeted conservation works for breeding birds will not be a feature of this plan. This is wrong and is at odds with Principle 15 in the National Peatlands Strategy 2015. In relation to climate	

Organisation	Summary of Response by Stakeholder	BnM Response
	change this rehabilitation plan needs to ensure that all of the cutaway bogs within the Littleton Group are rewetted to prevent carbon leakage. In our experience through visits to Mount Lucas, Ballycon and Lullymore cutaway bogs there are substantial areas within these rehabilitated sites that are dry and emitting carbon. Why does BnM not recontour sites with un-even topography to ensure that the majority of the bare peat is rewetted? Surely at the peat production stage more effort could be made to extract the peat so that flat substrate remains. Can you indicate within the plan the percentage of peat that will be rewetted and be carbon neutral? This is an important consideration in line with national climate change policy. IPCC find that the plan is overstating the company's intention to cease peat production for electricity by 2030 as their contribution to climate change policy	
Private Individual C	Phone call to discuss potential to develop greenway amenity across the Littleton Bog Group.	
Private Individual D	Meeting to discuss boundary issues and potential impact of rehabilitation on adjoining land	
Private Individual F	Meeting to discuss rare orchids at Longfordpass railway cutting	
PCAS consultation undertaken in 2025		
Uisce Éireann (formerly Irish Water)	In their response, Uisce Éireann stated that they are 'supportive of the key objective of achieving environmental stabilisation of the bog and stabilising/improving key emissions to water. Uisce Éireann understand that restored peatlands are generally beneficial for drinking water sources downstream by improving water quality and by creating water retention and slowing the flow from the site. We are therefore in support of the Cutaway Bog Decommissioning and Rehabilitation Plan and believe that it could help to achieve to improvements the quality of drinking water sources downstream in terms of suspended sediment, colour, ammonia and dissolved organic carbon. Erenagh Bog is located within the drinking water abstraction catchment for five public water supplies. The closest abstraction point is located approximately 32 km downstream of the site, where the Athlone Public Water Supply abstracts from the River Shannon. 'Uisce Éireann has undertaken a review of the plan and Killeen Bog is not located within any drinking water abstraction catchments directly nor is Killeen Bog directly associated with any surface water abstraction catchments downstream. However, the zone of contribution (ZOC) for the Horse & Jockey Water Supply is located approximately 200m to east of Killeen Bog, with the abstraction borehole at Curraheen being located a further 1.5km east of the Killeen Bog'. Uisce Éireann provided suggestions and recommendations around water quality monitoring and the management of silt ponds during and post rehabilitation.	BnM acknowledged the response and responded to the queries raised. Consultation is ongoing.
Iarnród Éireann/Irish Rail	The location is approximately 10km from the nearest Iarnród Éireann railway line in Thurles, so Iarnród Éireann have no comments to make about the proposed work.	BnM acknowledges the response.
Minister of State with responsibility for Nature, Heritage	Acknowledge receipt of consultation.	BnM acknowledges the response.

Organisation	Summary of Response by Stakeholder	BnM Response
and Biodiversity - Christopher O'Sullivan TD.		
Tipperary County Council	In their submission, Tipperary County Council highlighted that the rehabilitation plan should 'ensure that future options for amenity or tourism uses of the lands are not discounted, having regard to the Council's aspirations to develop eco-tourism projects throughout the county'. Further, it was highlighted that archaeological impacts associated with rehabilitation of Killeen bog, given the rich archaeological heritage of the lands, should be assessed. Recognition of the Littleton Labyrinth projects is welcomed by Tipperary County Council. The rehabilitation of the bog should have regard to future access and way-leaves for access and services of the adjacent Lisheen Mines National Bioeconomy Campus. Tipperary County Council provided information on the relevant policies and objectives within the Tipperary County Council's Climate Action Plan 2024-2029 that aligned with peatland restoration. Other information focused on the Tipperary Decarbonising Zone, and how peatland restoration would benefit such decarbonisation. Other information was provided on the council's policies on Land-use, Land-use Change and Forestry (LULUCF). It notes that the 'management of agricultural ecosystems, such as grasslands and peatlands' are emitters of CO2 and 'the management of agricultural ecosystems, such as grasslands and peatlands 'an important area for climate mitigation measures'. 'For example, alternative land management measures such as raising the water table in existing pastures and peatlands, new crop types, forestry etc could make this sector a net remover of GHGs'. The submission notes that 'BnM is to be commended for its decarbonisation programme aimed at reducing the carbon emissions from its activities. This programme supports the National policy position and objective of achieving a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050'. The submission requests: • 'stakeholder collaboration to deliver concerted efforts towards carbon and GHG emissions reductions within the DZ, which can lead the way for wider application across Tipperary'. • 'BnaM are requested to considered if there are opportunities for collaboration with stakeholders, including Tipperary County Council, as part of the delivery of their PCAS programme'. • 'The Mid-Tipperary Decarbonising Zone is within the JTF area and thus there are opportunities to engage local communities, including those previously employed in the peat harvesting industry, in areas related to training and upskilling and sustainable local job creation'. • 'BnaM are requested to consider the referring of the Mid-Tipperary DZ in their relevant publications and projects. In particular to include details on the Mid-Tipperary Decarbonising Zone in the relevant Rehabilitation Plans and associated Map Books'. • 'The strategic location of the national Bioeconomy Campus (Irish Bioeconomy Foundation) at Lisheen should be noted and it is requested that BnaM consider the vision for the National Bioeconomy campus as part of their overall plans in the Mid-Tipperary DZ areas'. 'BnaM are requested to consider, given the particular role of the national DZ programme in emissions reduction, if there is an opportunity to monitor the changes in carbon emissions from a current baseline within the Killeen bog and report on reduced the carbon emissions in support of the national objective of achieving a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050. Thus, the rehabilitation plans can explicitly state how emissions will be monitored and reported. Such reporting will also support Tipperary County Council objectives for supporting moves towards low-carbon communities within the Decarbonising Zone'.	BnM acknowledged the response. Consultation is ongoing.

Organisation	Summary of Response by Stakeholder	BnM Response
An Taisce	In their submission, An Taisce welcomed 'any efforts made to rehabilitate and eventually restore Ireland's network of heavily degraded bog lands. This is crucial in the context of the intertwined biodiversity and climate emergencies, and the crucial carbon sequestration function of healthy bogland alongside other ecosystem services'. Expressed that peatlands should not be subject to future development 'which could have negative ecological impacts in terms of hydrological regime, critical wildlife habitat, carbon sequestration function and other ecosystem services' An Taisce 'highlight an example of a rare species returning to a naturally regenerating bog on BnM lands, namely the Crane, which was absent as a successfully breeding species in Ireland for hundreds of years.2 This demonstrates the positive and regenerative cascading effects across an ecosystem when it is devoid of intensive industrial activity and allowed to regenerate and eventually flourish. We submit that the subject rehabilitation should be considered with these benefits in mind, and that resumption of any type of industrial activity should be excluded within boglands with the highest restoration potential or in those which have already been rehabilitated/restored'. Queries if Coillte conifer plantation forestry could be included in the rehabilitation plan. For Bord na Mona to prevent small-scale illegal turf cutting within the subject site. A request for continuous ecological monitoring to be carried out at the site to ascertain its full ecological value and potential. An Taisce 'welcome the commitment to bunding as a measure throughout the peatland restoration proposal, which is recognised by stakeholders such as the NPWS and IPCC as effective for rewetting purposes'. Concerns were raised 'about the effects of drought and wildfire risk, as well as excess rainfall events and subsequent flooding effects'.	BnM acknowledged the response. Consultation is ongoing.

APPENDIX XI: ARCHAEOLOGY



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Code of Practice

5. To arrange for the delivery or collection of the stray find, as directed by the Duty Officer of the National Museum of Ireland.

6. To complete the Report of Discovery of Archaeological Object(s) in Bogs (Appendix V), as directed by the Duty Officer of the National Museum of Ireland.

7. To maintain a file of all stray finds and associated documentation and provide copies to the Project Archaeologist.

8. To provide assistance, where required, to the Department during archaeological surveys.

9. To provide assistance, where required, to Bord na Móna's Consultant Archaeologists, during investigation and mitigation of monuments.

10. To report to the Bord na Móna members on the Archaeology Management Liaison Committee any planned developments or new activities on cutaway peatland areas within his/her group of bogs.



1. Purpose

The purpose of this procedure is to describe the arrangements within Bord na Móna (BnM) for the identification, protection and reporting of archaeological material, including stray finds and known archaeological features.

All objects, sites or monuments, no matter how fragmentary, are important elements of our national heritage. The protection of archaeological resources is a legal requirement and forms part of Bord na Móna's environmental and cultural heritage responsibilities.

This procedure also sets out operational controls to ensure that archaeological features and their associated buffer zones are protected during rehabilitation activities.

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2. Procedure

2.1 Archaeological Awareness

1. Verify whether any known archaeological monuments or constraints exist within the proposed work area prior to commencing works. These can be identified using the BnM GIS system, including the relevant PCAS layers and associated field maps.
2. All archaeological locations and their associated buffer zones shall be clearly marked on the bog in advance of any rehabilitation activities, irrespective of whether works are planned within those areas. The Survey Team will endeavour to mark all zones prior to commencement of rehabilitation works on a given bog; however, this is subject to the availability of survey resources. Where features are located in areas that are unsafe to access (e.g. water-covered areas), physical marking is not required.
3. These markings must be installed prior to machinery entering the field where all rehabilitation measures are taking place.
4. Archaeological features located within fields will be marked by the Survey Team using a visible red "X" to clearly alert operators to the presence of an archaeological constraint. These features are typically accompanied by a 20 m buffer zone, which may restrict access to up to three adjacent fields.
5. Operators must not drive over or across these markers, including when moving between work areas. Operators must navigate around the marked locations and their associated buffer zones.
6. If operators are observed driving over archaeological markers in order to move to the next work area, this must be reported to the Site Supervisor or **Archaeological Liaison Officer** immediately so corrective action can be taken.
7. Archaeological areas and their associated buffer zones must not be used for machine travel, idle travel, turning, or equipment positioning.

2.2 Stray Finds Procedure

1 Be vigilant at all times. Objects or traces of structures may be found:

- on field surfaces
- in drain faces
- on bog margins
- caught within the mechanics of machinery.

2 If a n object is discovered:

- Leave it in place if it is safe to do so.
- Note its position.
- Immediately contact the **Archaeological Liaison Officer**, who will assess the situation and contact the Duty Officer of the National Museum of Ireland where required.

3 Resist the temptation to investigate the find spot further, as this may disturb fragile archaeological deposits.

4 If the object has already been dislodged or is in imminent danger:

- Remove it carefully.
- Mark the find location.
- Report it immediately to the **Archaeological Liaison Officer**.

5 Objects made of **wood, leather or textile**, particularly those removed from peat, must be kept in conditions similar to those in which they were found. This may include:

- packing the object in peat, or
- placing waterlogged items in a clean basin of water and sealing the container.

6 Do not attempt to clean or remove peat from the object.

7 If **timbers, gravel, stones or other materials that may form part of a man-made structure** are discovered:

- mark the location
- report immediately to the **Archaeological Liaison Officer**
- do not expose the structure further.

8 Report anything that appears **unnatural or unusual in the bog**. The **Archaeological Liaison Officer** will determine whether the find requires referral to the relevant authorities.

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3. Important Note

Our archaeological heritage is a finite and non-renewable resource. Once a site is destroyed, its information is lost forever. Protecting archaeological remains allows us to better understand our past, our landscape and the people who lived here before us.

All Bord na Móna staff and contractors must therefore ensure that archaeological features, buffer zones and potential stray finds are treated with care and protected at all times during operations.

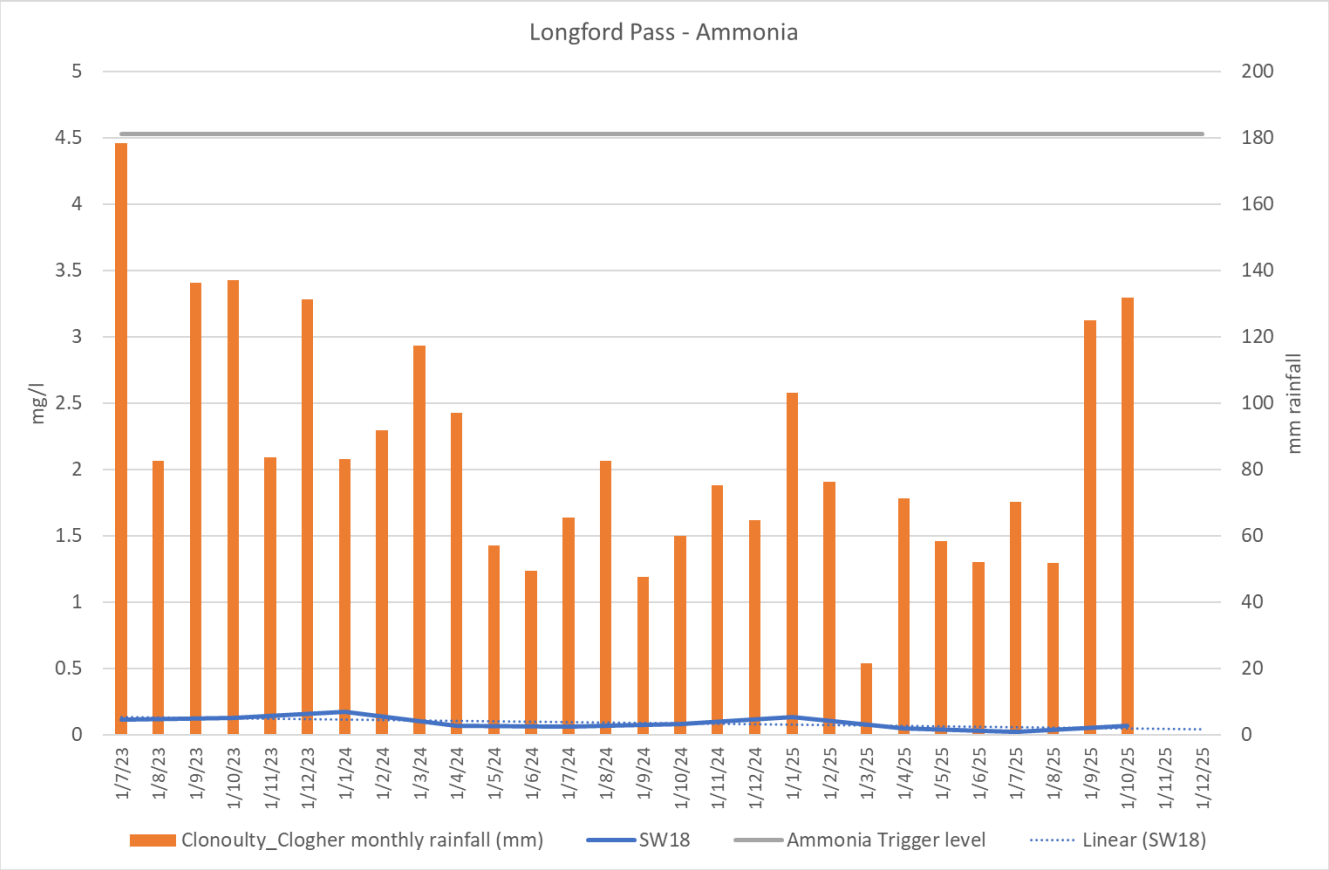
Your Archaeological Liaison Officer is Enda McDonagh

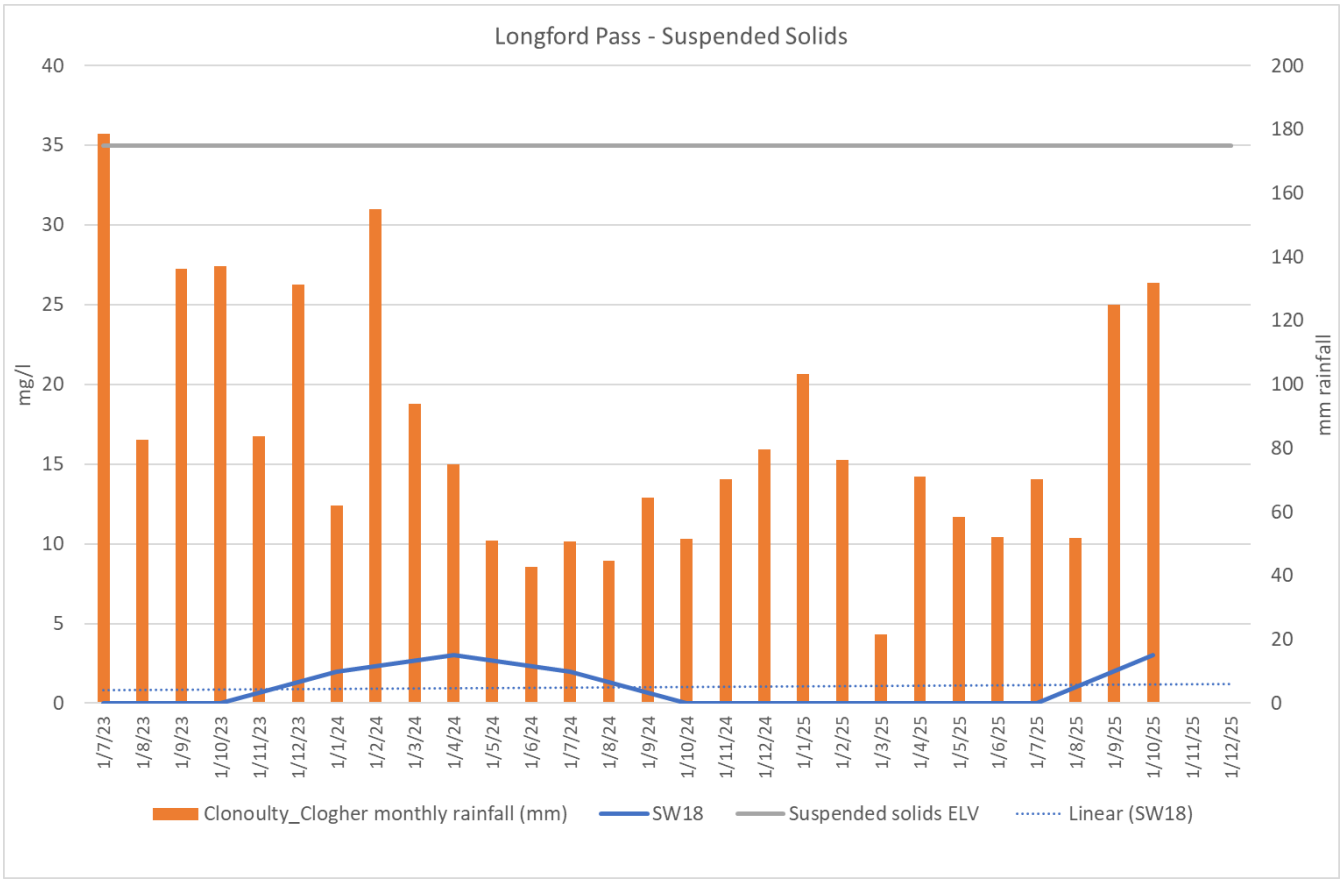
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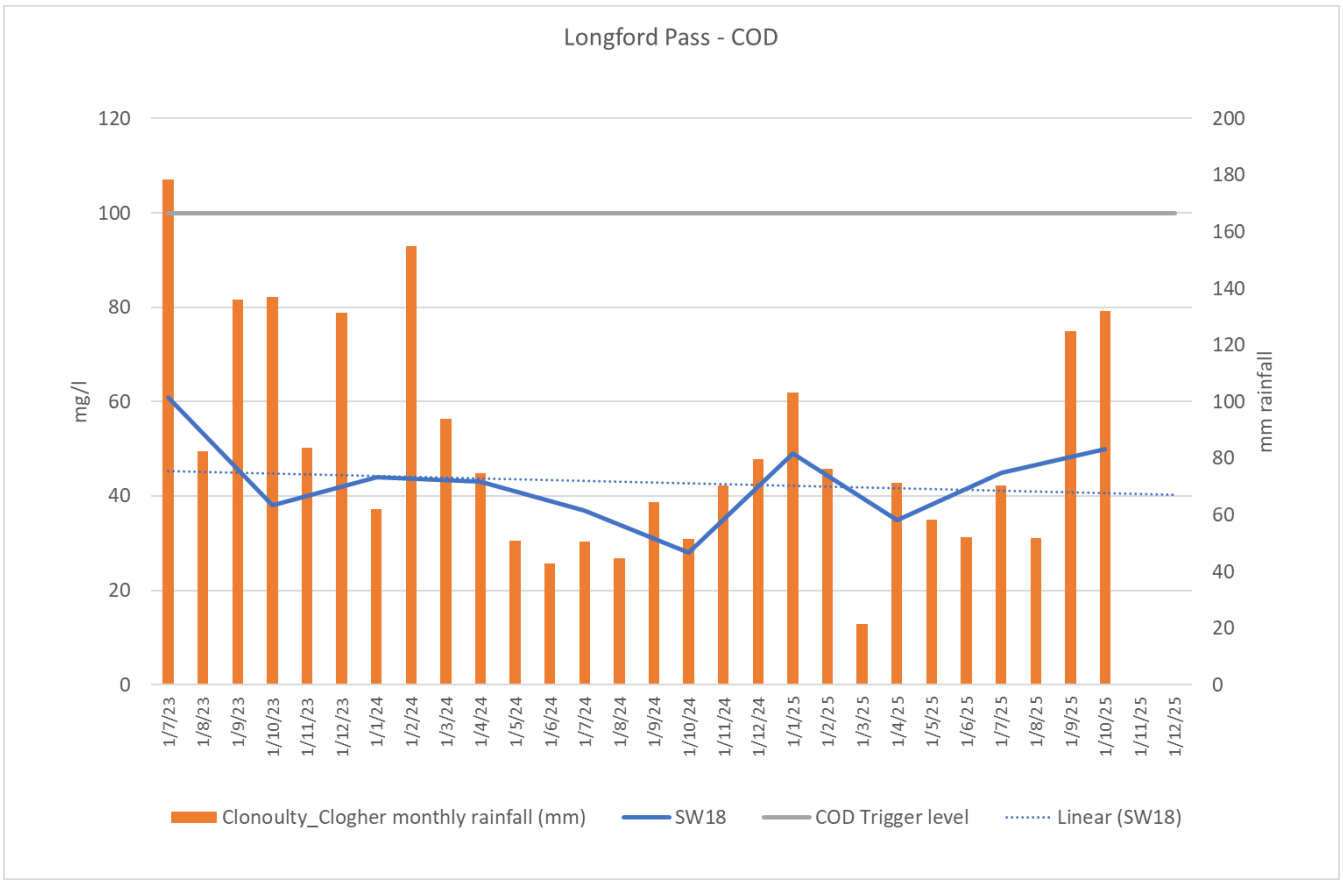
Revision	Date	Description of change	Approved
1	13/19/2020	First release	EMcD
1	24/11/2025	Change to logo and header	SG
2	10/03/2026	Addition of Archaeological Awareness and change of SOP Title	EMcD

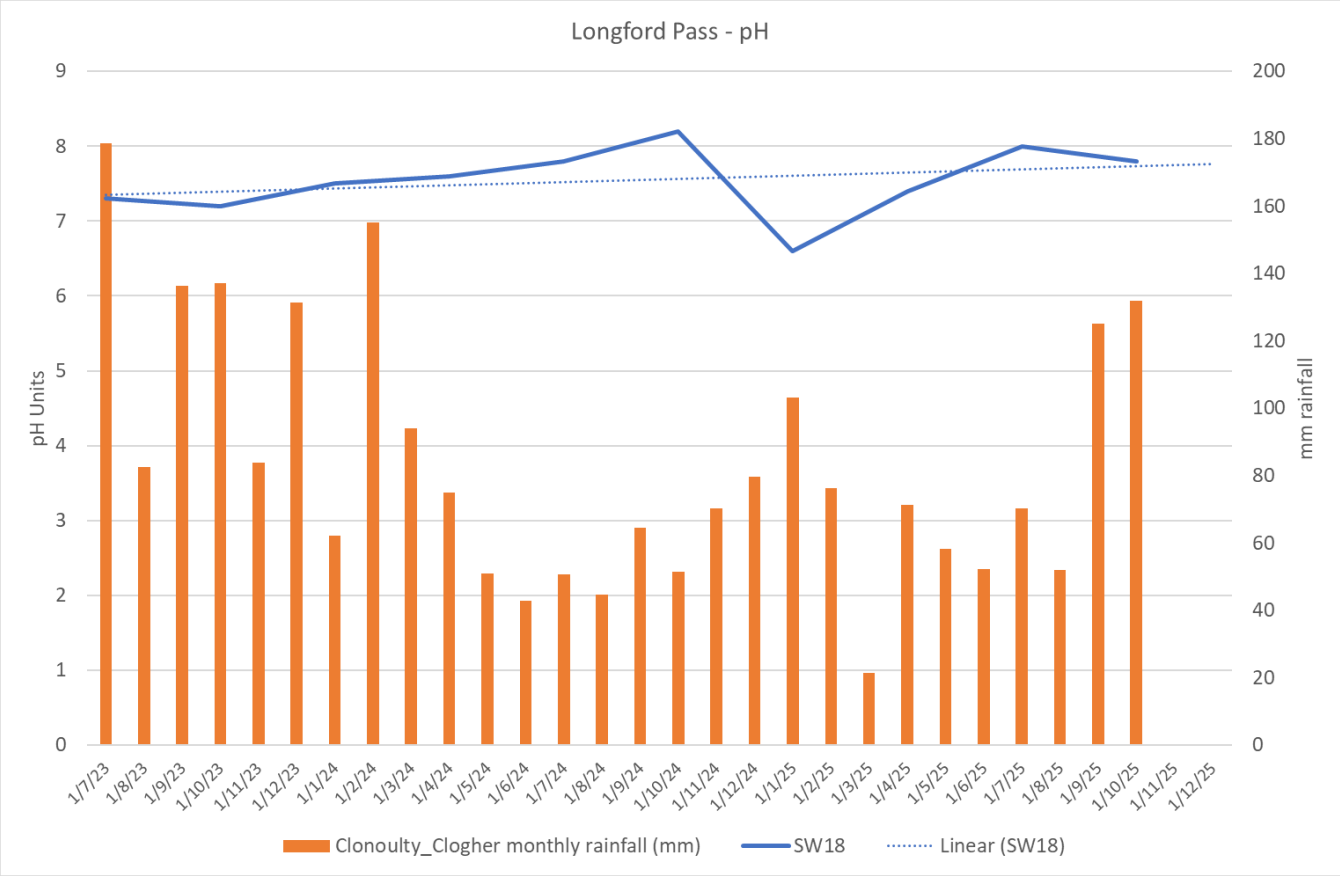
APPENDIX XII: WATER QUALITY MONITORING RESULTS FOR LONGFORD PASS BOG

Water quality monitoring indicates that suspended solids are well below the emission limit value and would have reached expected background levels having stabilised over the period. Ammonia and COD concentrations are well below the associated trigger levels and are remaining fairly level and consistent. The following graphs provide the water quality monitoring results for Longford Pass Bog from 2023 to 2025.




Longford Pass - Suspended Solids
mg/l
mm rainfall
Clonoulty_Clogher monthly rainfall (mm)
SW18
Suspended solids ELV
Linear (SW18)


Longford Pass - COD
mg/l
mm rainfall
Clonoulty_Clogher monthly rainfall (mm)
SW18
COD Trigger level
Linear (SW18)


Longford Pass - pH
pH Units
mm rainfall
0
1
2
3
4
5
6
7
8
9
0
20
40
60
80
100
120
140
160
180
200
1/7/23
1/8/23
1/9/23
1/10/23
1/11/23
1/12/23
1/1/24
1/2/24
1/3/24
1/4/24
1/5/24
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1/10/24
1/11/24
1/12/24
1/1/25
1/2/25
1/3/25
1/4/25
1/5/25
1/6/25
1/7/25
1/8/25
1/9/25
1/10/25
1/11/25
1/12/25
Clonoulty_Clogher monthly rainfall (mm)
SW18
Linear (SW18)

Longford Pass Bog
Rehab Plan
GIS Map Book
2026

Document Control Sheet	
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This document comprises:	DCS	TOC	Text (Body)	References	Maps	No. of Appendices
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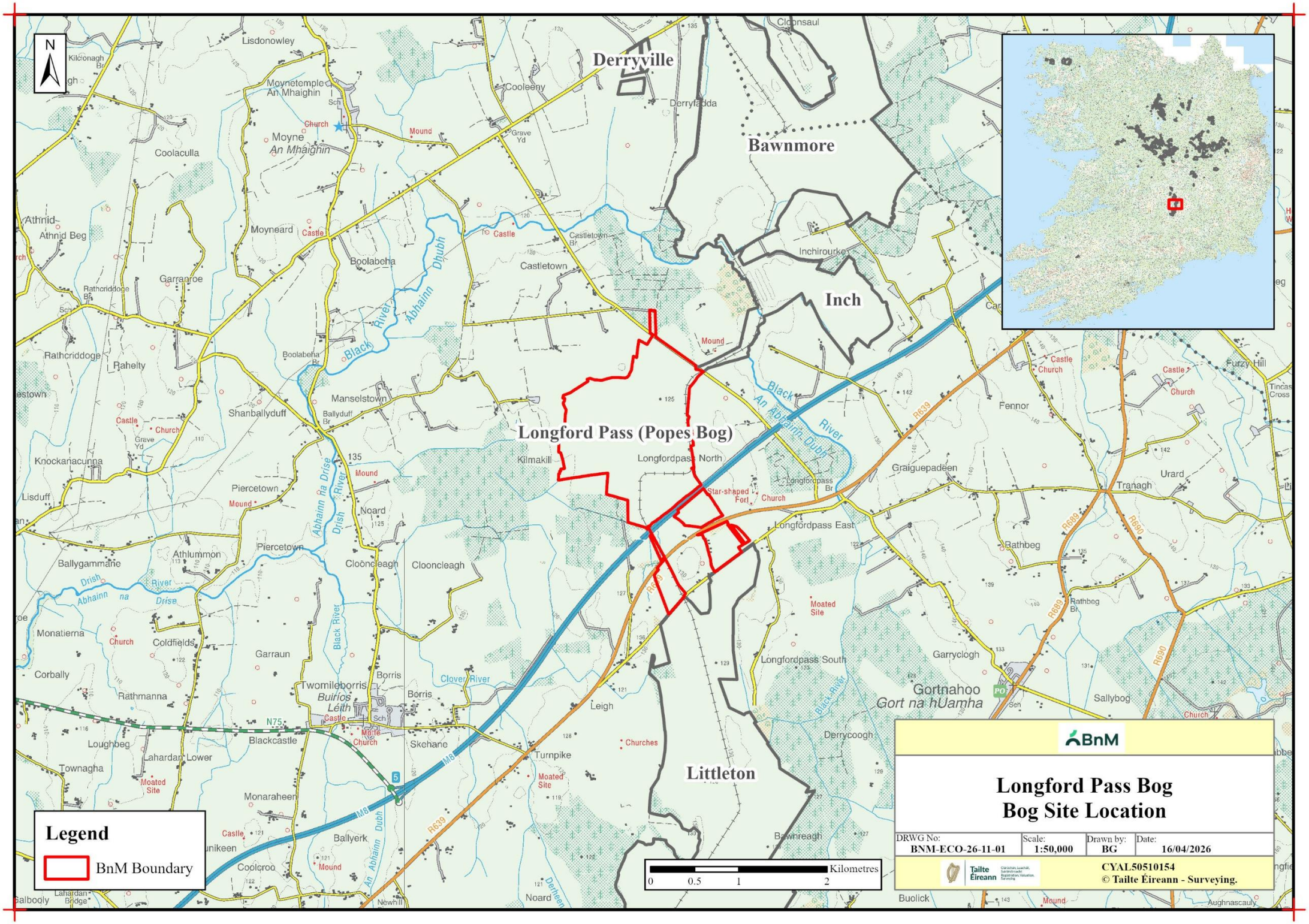
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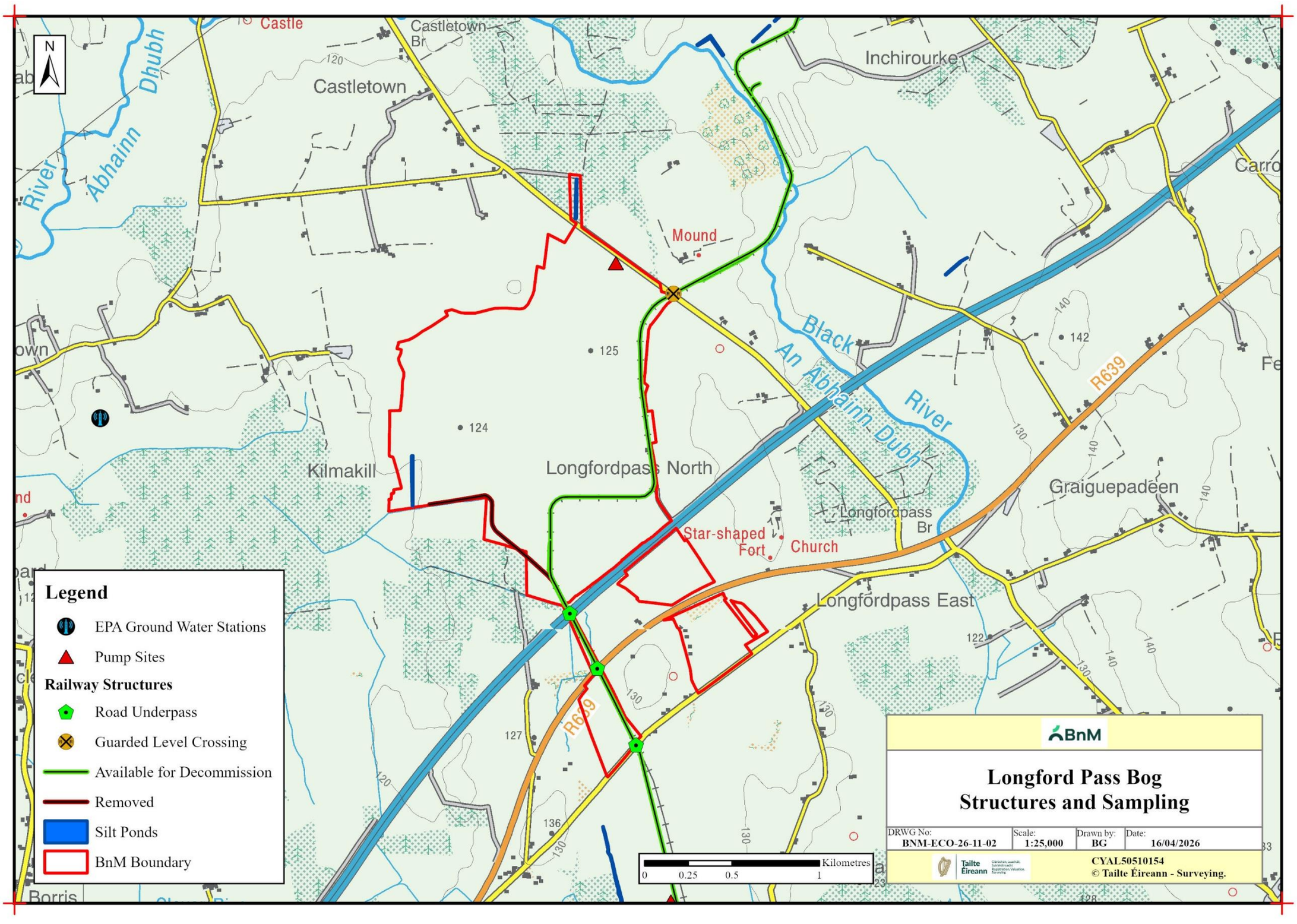
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Bog Site Information Maps

BNM-ECO-26-11-01: Site Location Map

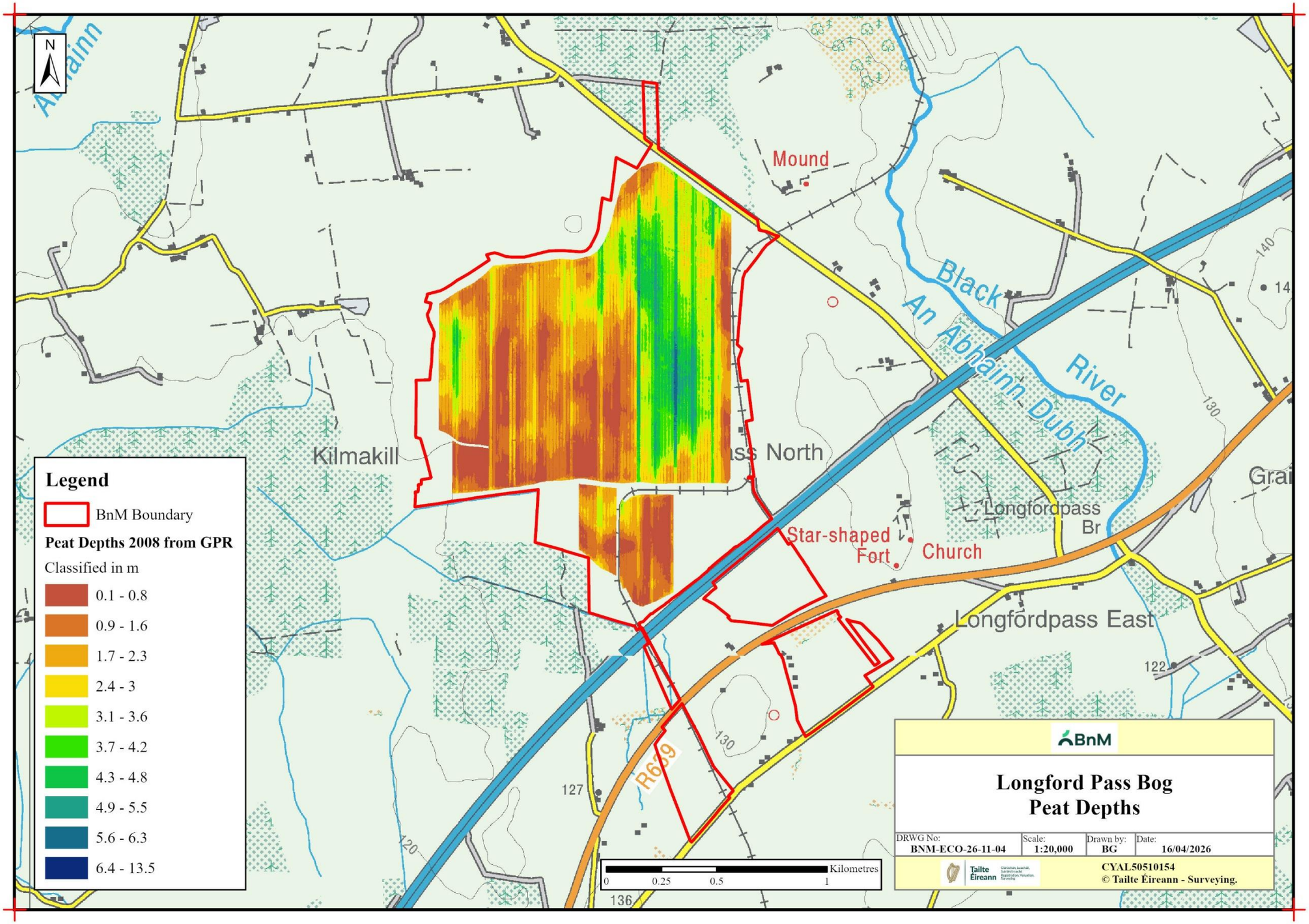
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N
Castle
Castletown Br
Castletown
Inchirourke
River Abhainn Dhubh
Mound
Black An Abhainn Dubh River
R639
Kilmakill
Longfordpass North
Graiguepadeen
Longfordpass Br
Star-shaped Fort
Church
Longfordpass East
Borris
Legend
EPA Ground Water Stations
Pump Sites
Railway Structures
Road Underpass
Guarded Level Crossing
Available for Decommission
Removed
Silt Ponds
BnM Boundary
0 0.25 0.5 1 Kilometres
BnM
Longford Pass Bog
Structures and Sampling
DRWG No: BNM-ECO-26-11-02
Scale: 1:25,000
Drawn by: BG
Date: 16/04/2026
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BNM-ECO-26-11-04: Peat Depths

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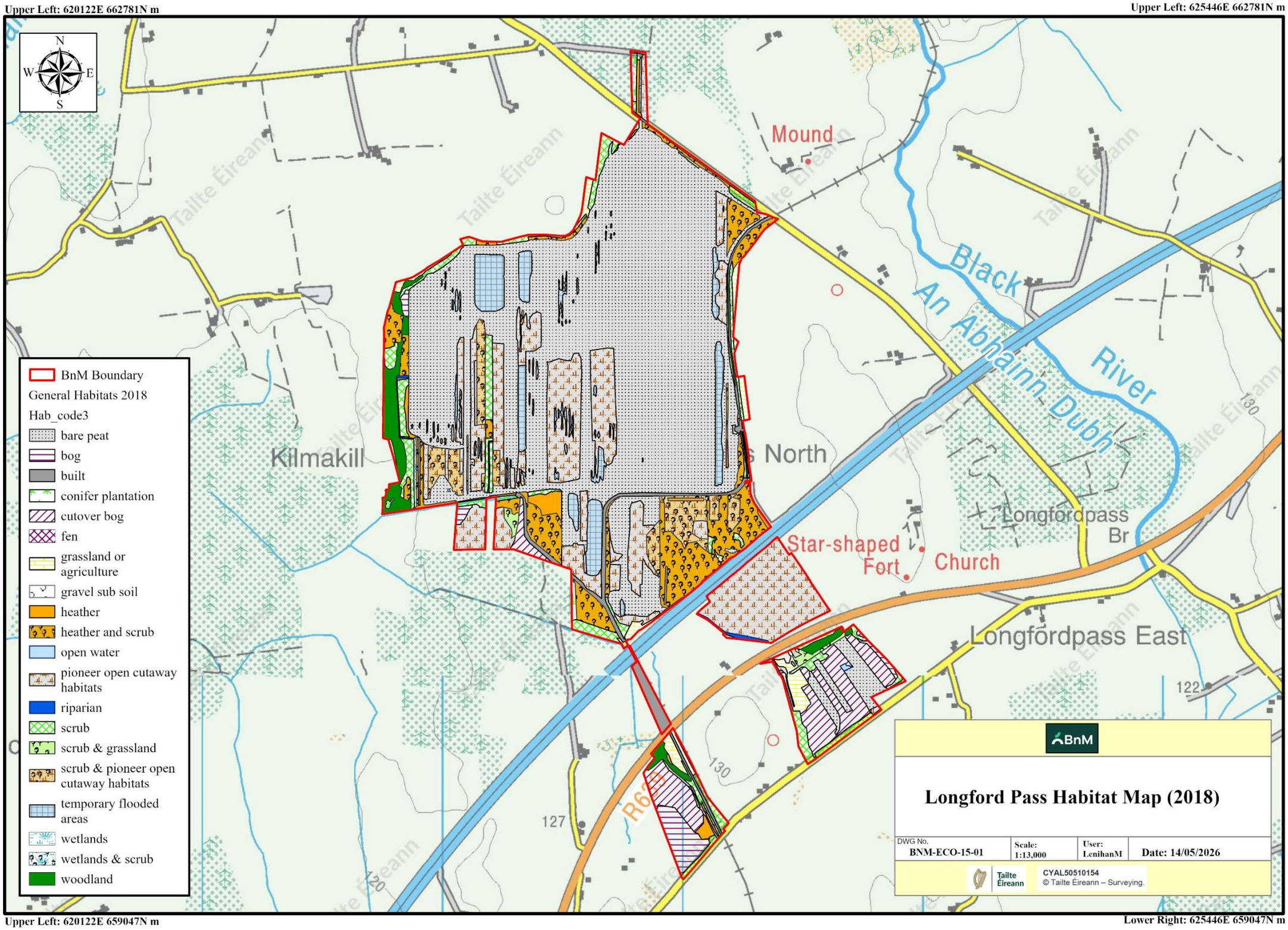


BNM-ECO-26-11-17: Habitat Map – General Cutaway Habitats (2018)

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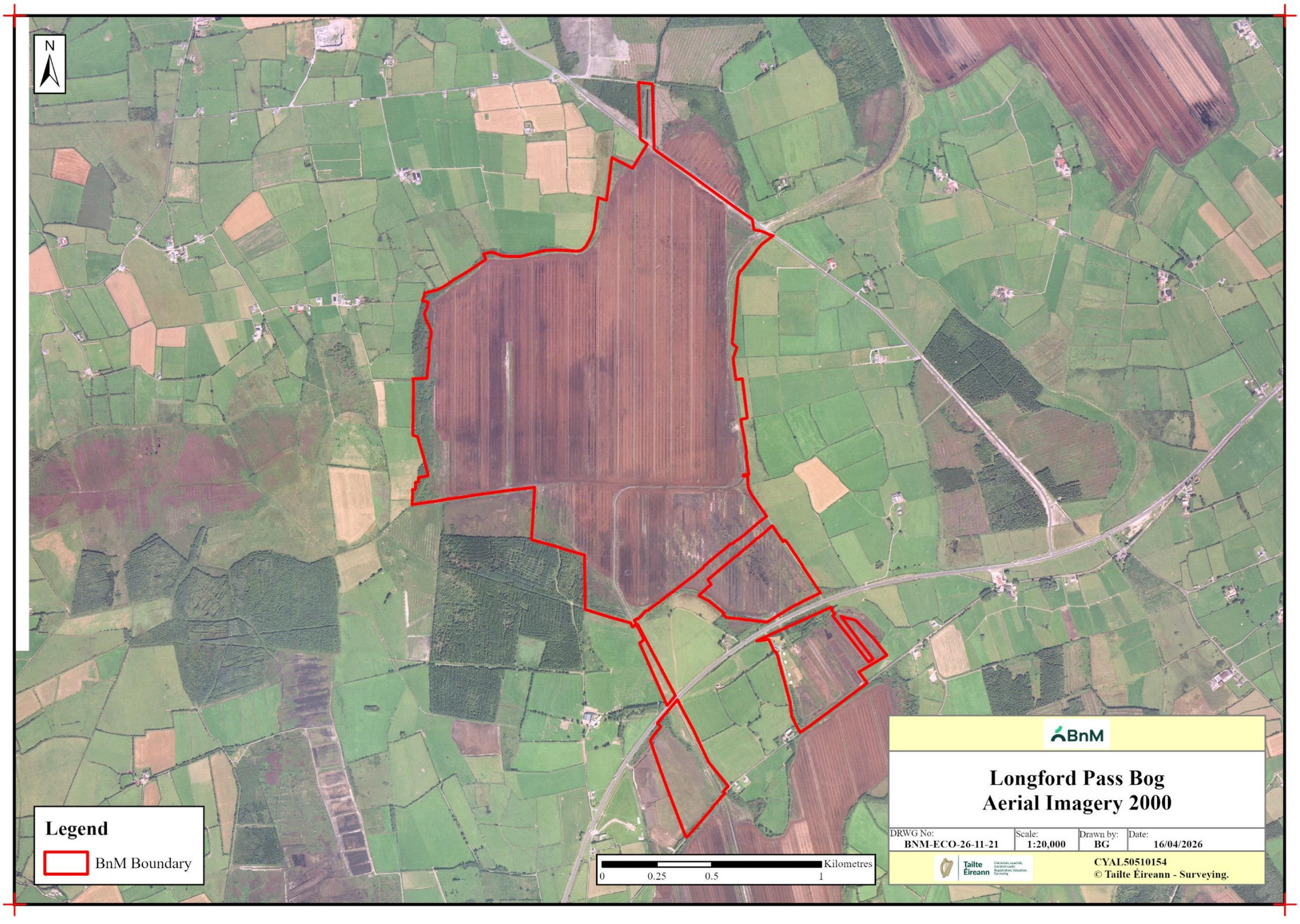


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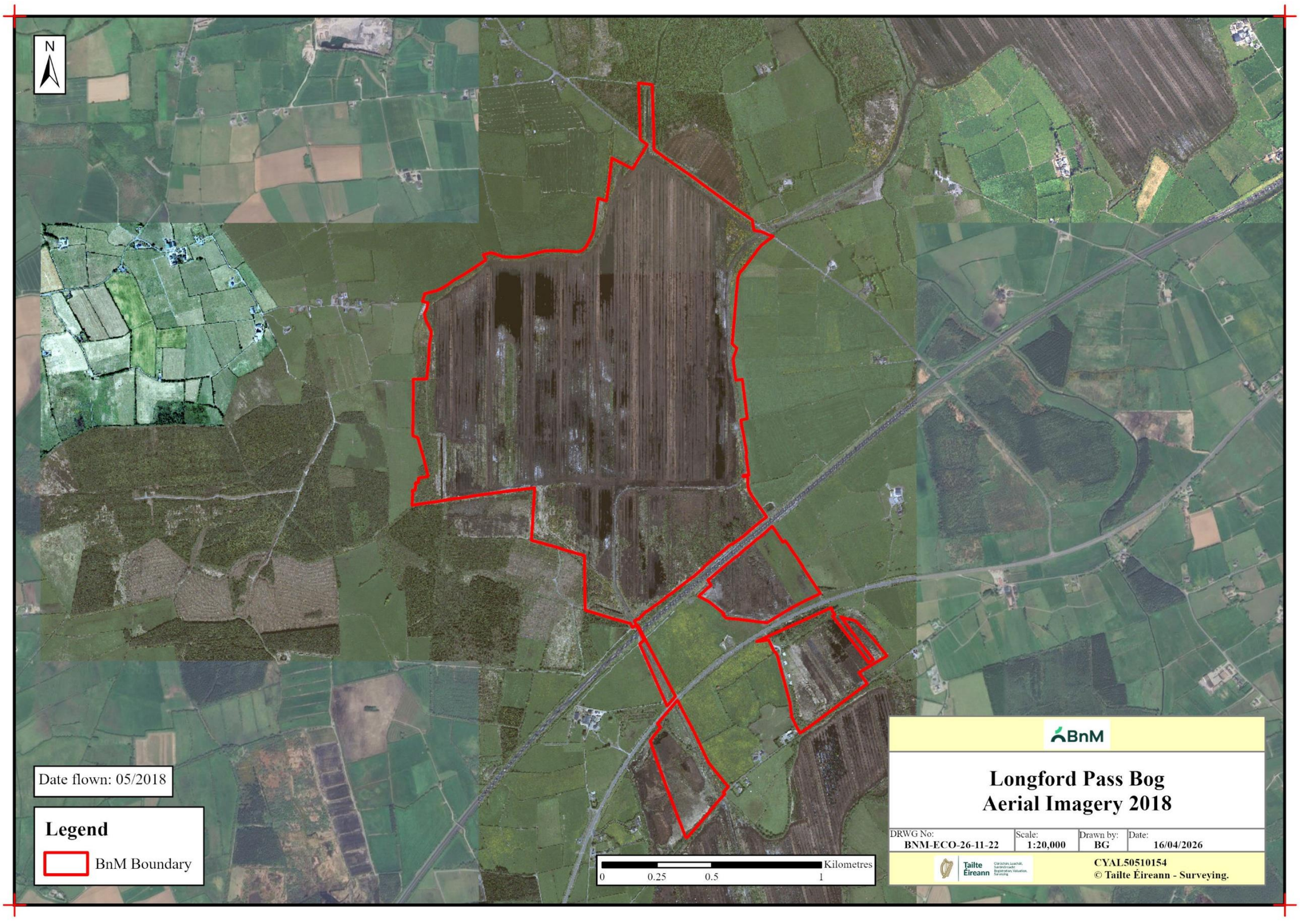
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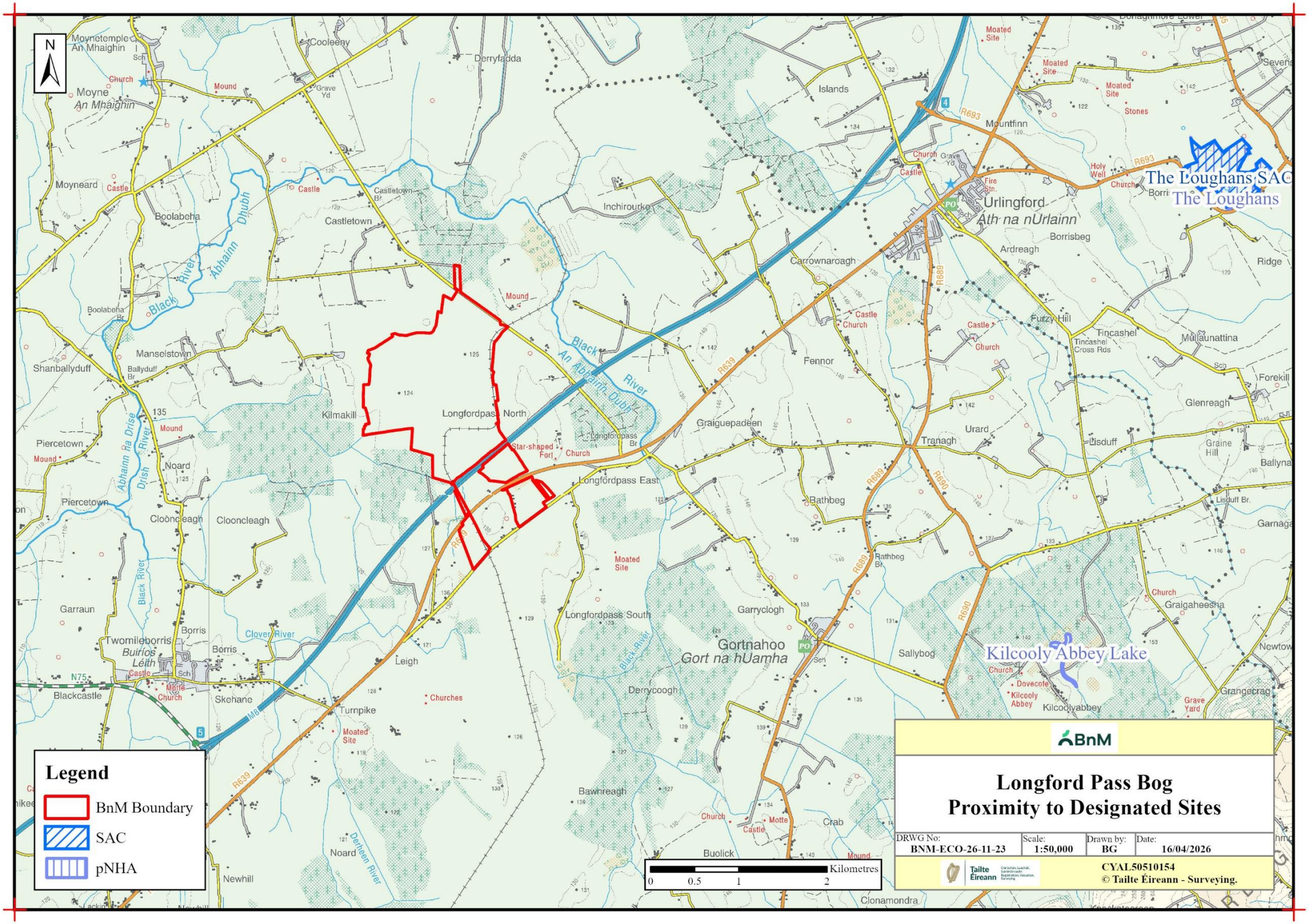
BNM-ECO-26-11-22: Aerial Imagery 2020

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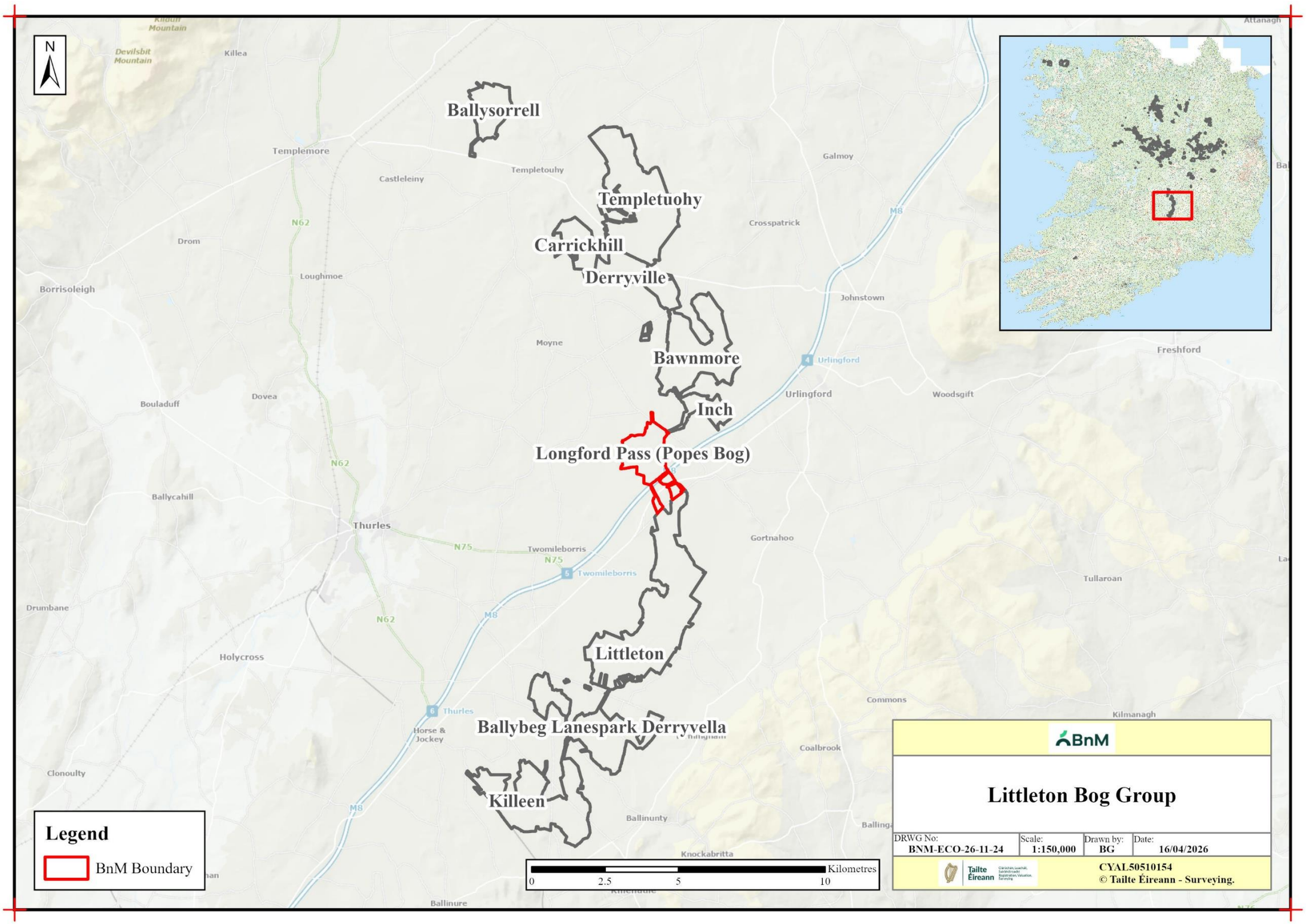
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BNM-ECO-26-11-24: Bog Group Map

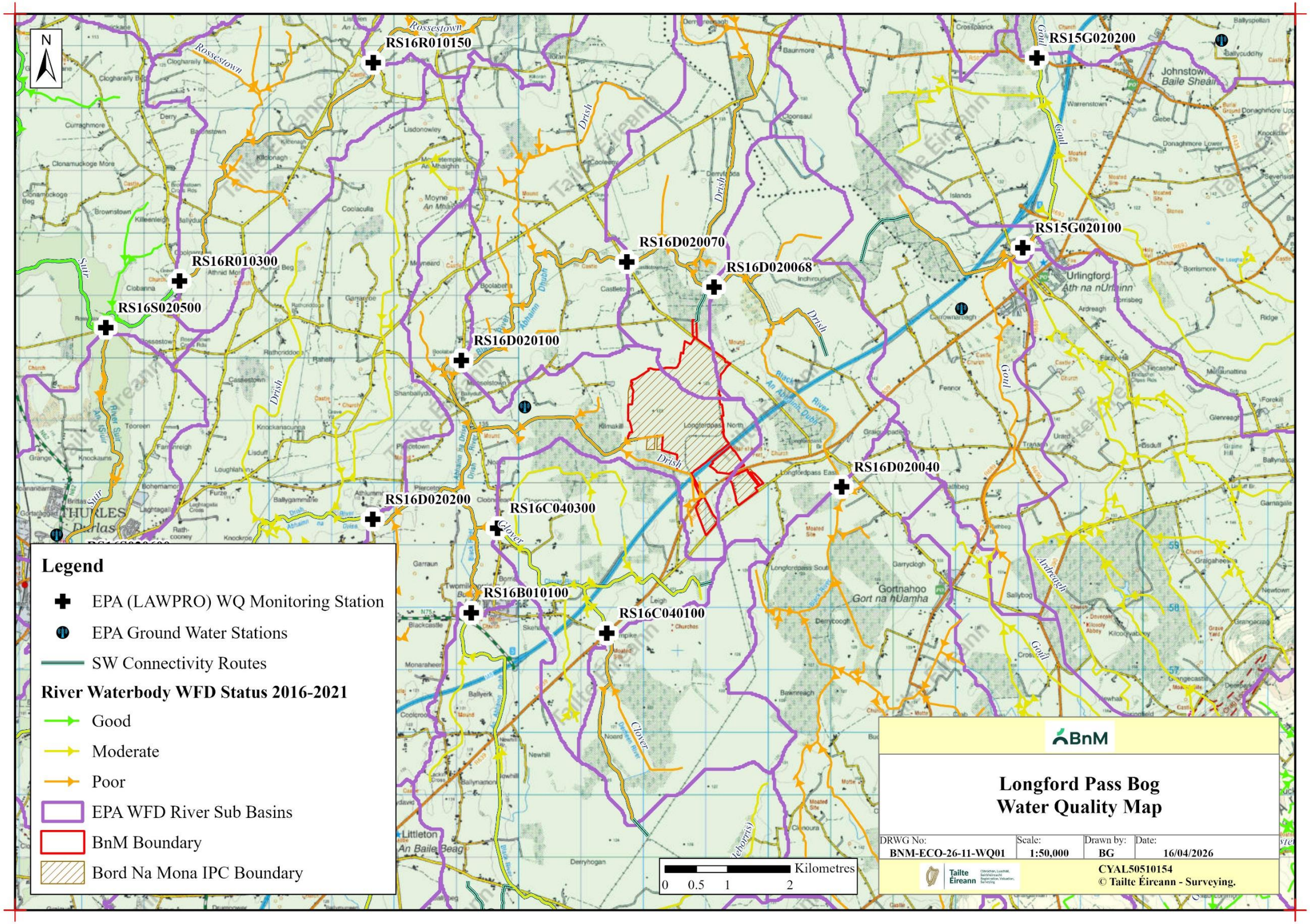
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Hydrology / Topography Maps

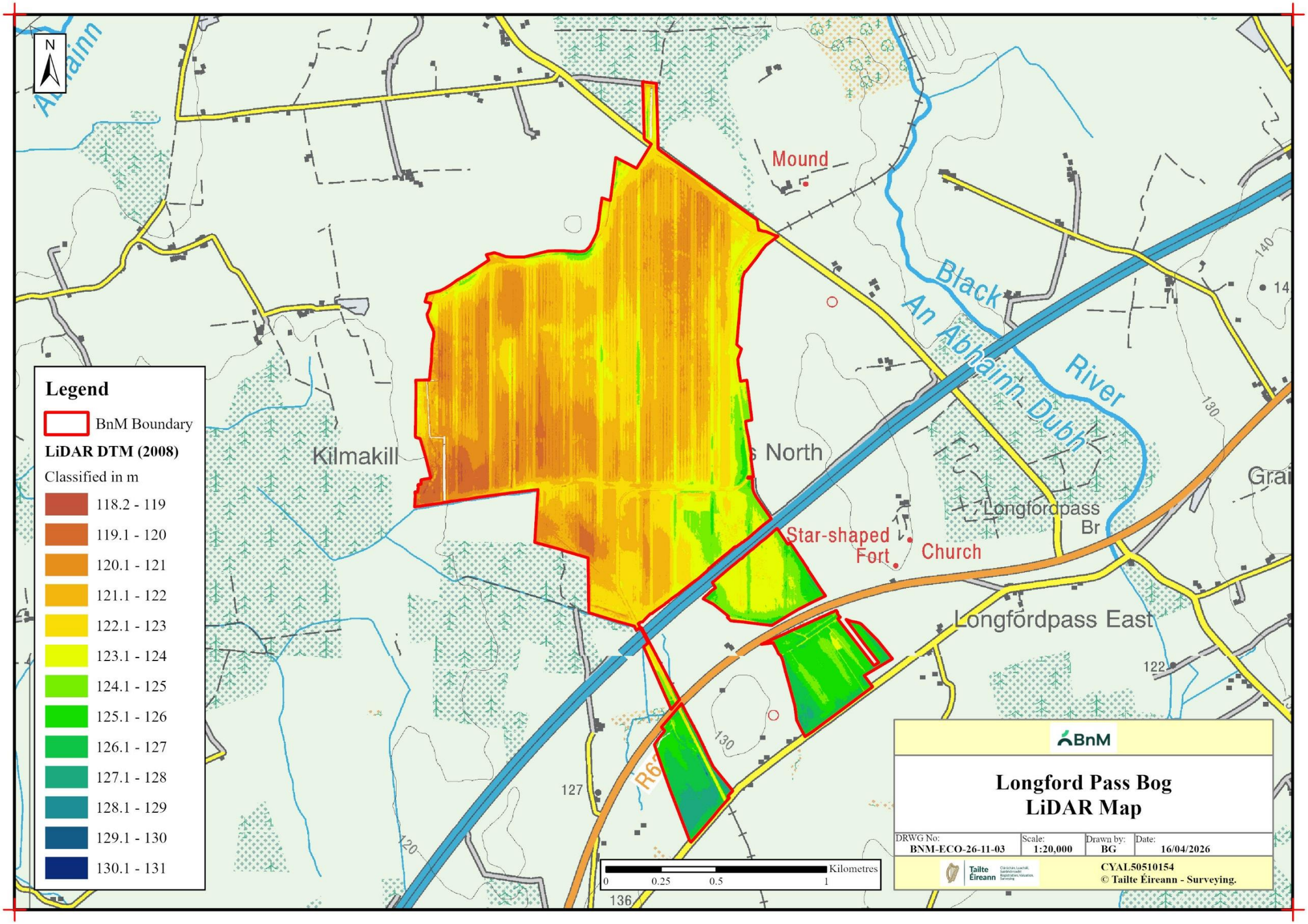
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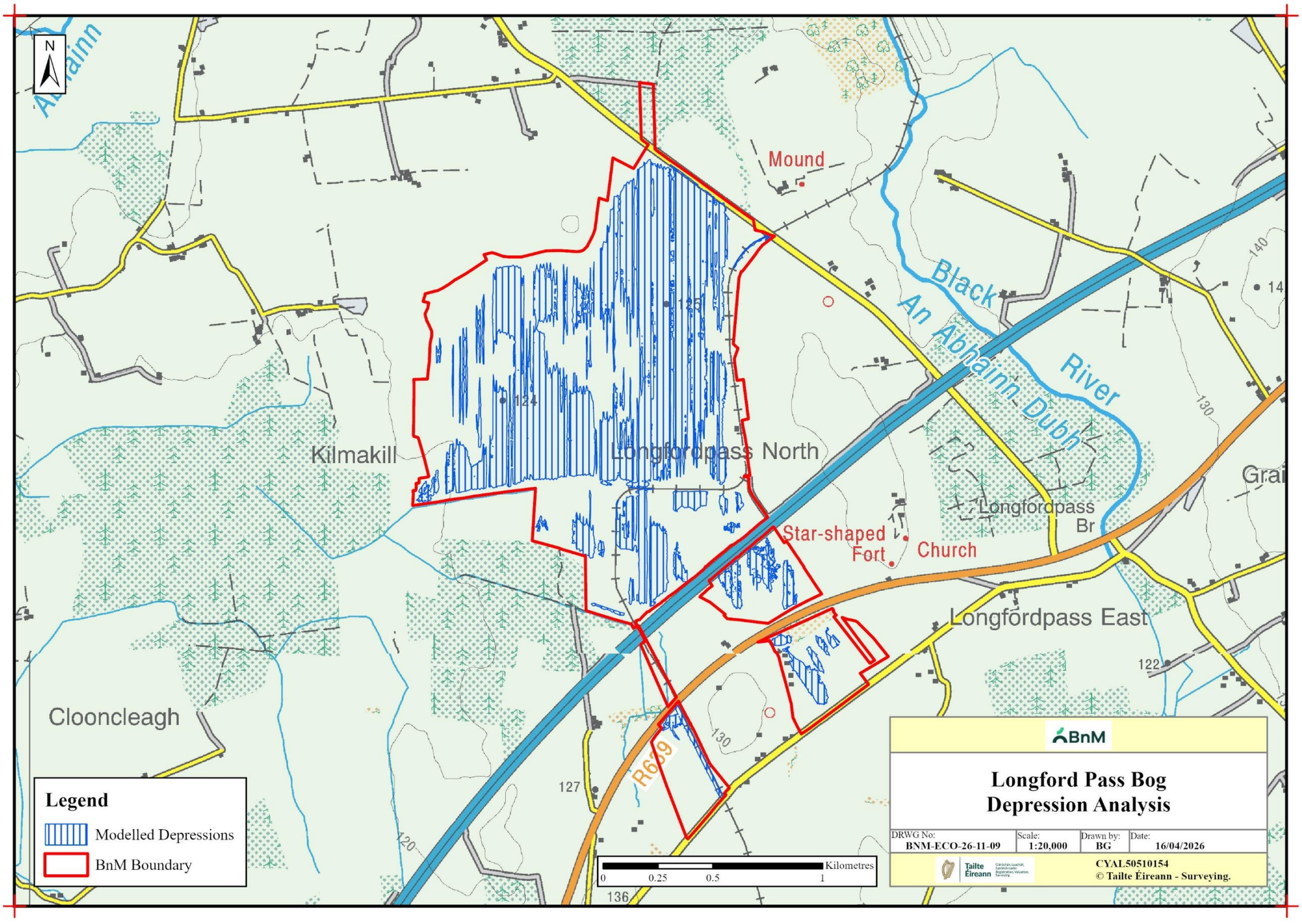
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BNM-ECO-26-11-03: LiDAR Map

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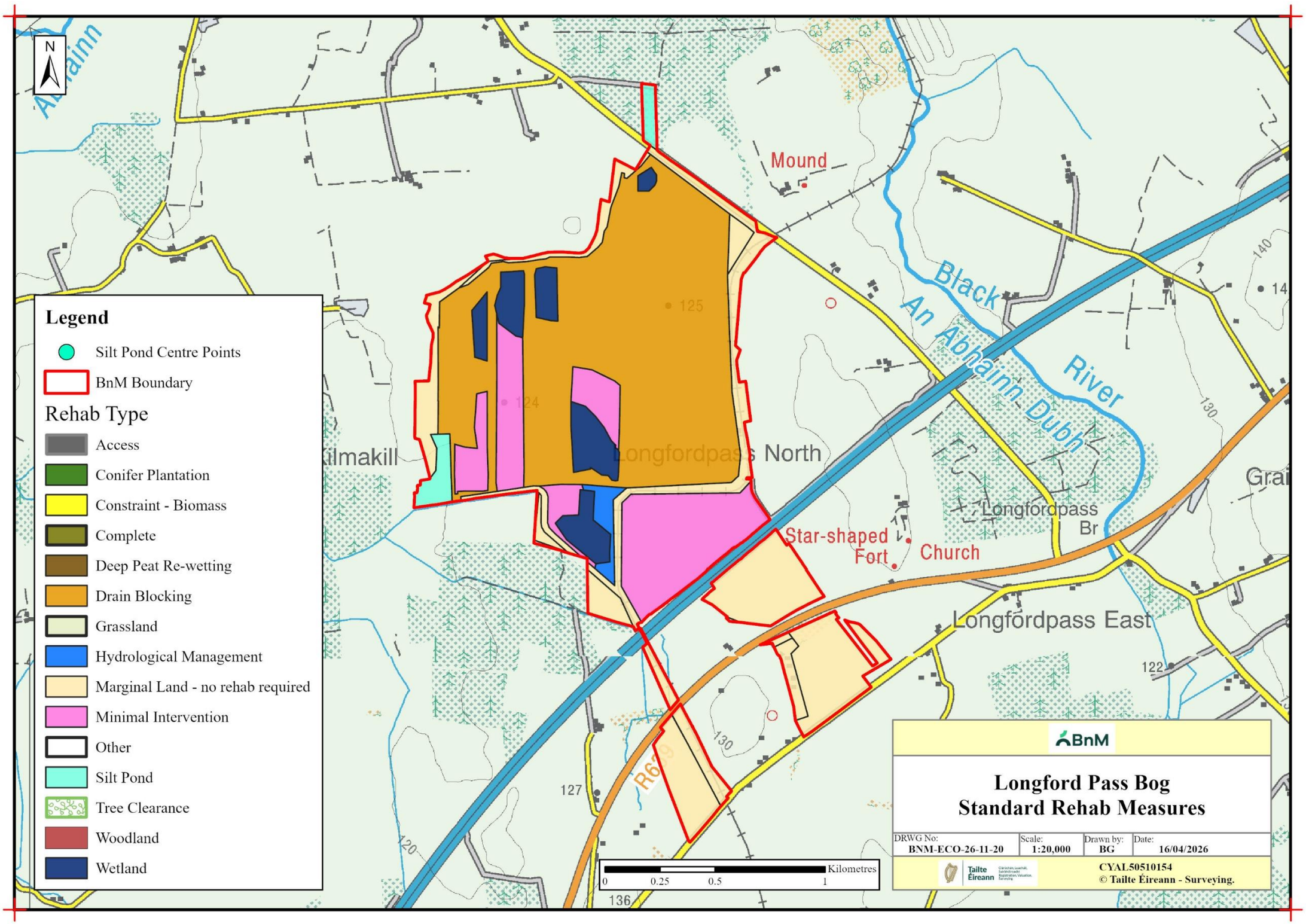



N
Mound
Black
An Abhainn Dubh
River
Kilmakill
Longfordpass North
Longfordpass
Br
Star-shaped
Fort
Church
Longfordpass East
Clooncleagh
R639
Legend
Modelled Depressions
BnM Boundary
0
0.25
0.5
1
Kilometres
BnM
Longford Pass Bog
Depression Analysis
DRWG No:
BNM-ECO-26-11-09
Scale:
1:20,000
Drawn by:
BG
Date:
16/04/2026
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Rehabilitation Maps

BNM-ECO-26-11-20: Standard Rehab Measures

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Upper Left: 620122E 662781N m

Upper Left: 625446E 662781N m

N

W E

S

BnM Boundary

General Habitats 2018

Hab_code3

- bare peat
- bog
- built
- conifer plantation
- cutover bog
- fen
- grassland or agriculture
- gravel sub soil
- heather
- heather and scrub
- open water
- pioneer open cutaway habitats
- riparian
- scrub
- scrub & grassland
- scrub & pioneer open cutaway habitats
- temporary flooded areas
- wetlands
- wetlands & scrub
- woodland

Mound

Black

An Abhainn Dubh

River

Kilmakill

s North

Longfordpass Br

Star-shaped Fort

Church

Longfordpass East

R676

130

127

122

120

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BnM

Longford Pass Habitat Map (2018)

DWG No.	Scale:	User:	Date:
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Ballybeg/Lanespark/Derryvella Bog

Ballybeg/Lanespark/Derryvella Bog

Cutaway Bog Decommissioning and Rehabilitation Plan

2025

This document seeks to address the requirements of Condition 10.2 of IPC Licence Ref. P0-499-01:

> "*The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area.*"

This licence condition requires Bord na Móna (now called BnM) agree with the EPA the measures that will provide for rehabilitation, i.e., stabilisation of Ballybeg/Lanespark/Derryvella Bog upon cessation of peat production and complements the licence requirement to decommission the site.

***Rehabilitation** generally comprises site stabilisation with natural colonisation with or without targeted management.*

Industrial peat production has now fully ceased at Ballybeg/Lanespark/Derryvella Bog.

In addition, to preparing this document to comply with Condition 10 of IPC Licence Ref. PO-499-01, due regard was also given to the Peatlands Climate Action Scheme (PCAS) announced by the Minster. This Scheme will see the Minister support, via the Climate Action Fund and Ireland's National Recovery and Resilience Plan*, Bord na Móna in developing a package of measures, 'the Scheme', for enhanced decommissioning, rehabilitation and restoration of cutaway peatlands referred to as, the Peatlands Climate Action Scheme'. However, only the additional costs associated with the additional and enhanced rehabilitation, i.e., measures which go beyond the existing standard mandatory decommissioning and rehabilitation requirements arising from Condition 10 will be eligible for support. The additional costs of the Scheme will be supported by Government, administered by the Department of Environment, Climate and Communications (DECC), while the National Parks and Wildlife Service (NPWS) will act as the Scheme regulator.*

While this document outlines the enhanced rehabilitation measures planned for Ballybeg/Lanespark/Derryvella Bog, activities which goes beyond that required by Condition 10 in the Licence, rehabilitation necessary to comply with the 'standard' requirement of Condition 10 (in the absence of the Scheme) is also included, to estimate costs. The inclusion of the 'standard' rehabilitation together with the enhanced rehabilitation in this document allows the Scheme Regulator to distinguish and objectively determine the specific activities (and their associated costs) eligible for support under the Scheme.

Bord na Móna have defined the key rehabilitation outcome at Ballybeg/Lanespark/Derryvella Bog as environmental stabilisation, re-wetting and setting the bog on a trajectory towards development of naturally functioning peatland and wetland habitats.

Bord na Móna are planning to develop a potential renewable energy project at Lanespark Bog as part of the proposed Littleton Wind Farm. This project is currently in the pre-planning stages and is expected to be submitted for planning permission in 2026.

Any consideration of any other future after-uses for Ballybeg/Lanespark/Derryvella Bog will be conducted in adherence to the relevant planning guidelines and consultation with relevant authorities and will be considered within the framework of this rehabilitation plan.

Document Control Sheet	
Document Name:	Ballybeg/Lanespark/Derryvella Bog Cutaway Bog Decommissioning and Rehabilitation Plan 2025
Document File Path:	Decomm and Rehab Programme - Rehab and Decomm Docs\ 06D Rehab Plans FY26\ Ballybeg/Lanespark/Derryvella Bog
Document Status:	Final

This document comprises:	DCS	TOC	Text (Body)	References	Maps	No. of Appendices
	1	2	39	4	0	14

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Name(s):	EOB	JOS	MMC
Date:	13/01/2025	15/04/2025	29/04/2025

Rev. 1	Author(s):	Checked By:	Approved By:
Name(s):			DMN
Date:			17/09/2025
Rev. 1.1	**Author(s):**	**Checked By:**	**Approved By:**
Name(s):			
Date:			

Note: This finalised version of the Rehabilitation Plan has been updated to take account that several planning actions listed in Section 8.1 have been completed and have been incorporated into the plan. This includes an Appropriate Assessment of the rehabilitation plan. See Killeen Bog Decommissioning and Rehabilitation Plan – Addendum 1 for more details.

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NON-TECHNICAL SUMMARY

- Bord na Móna (now known as BnM) is updating its rehabilitation plan for Ballybeg/Lanespark/Derryvella Bog located in Co. Tipperary.
- Ballybeg/Lanespark/Derryvella Bog is a series of three bogs that are closely linked. Ballybeg Bog is located 1.4 km northwest of Derryvella Bog. Lanespark Bog is located between the two bogs.
- Lanespark Bog has been mapped as a constraint on rehabilitation maps, as the bog is included in the proposed Littleton Wind Farm footprint. Only Ballybeg Bog and Derryvella Bog are considered for Phase 2 measures within this rehabilitation plan.
- Industrial peat harvesting has now finished at Ballybeg/Lanespark/Derryvella Bogs.
- Ballybeg/Lanespark/Derryvella Bogs were in industrial peat production from the 1970s until 2017.
- In 2017, Bord na Móna announced the closure of the Littleton Briquette factory and the cessation of industrial peat production in a number of cutaway bogs within the Littleton Bog Group, including Ballybeg/Lanespark/Derryvella Bogs.
- Bord na Móna are obliged to carry out peatland rehabilitation via an IPC Licence issued by the Environmental Protection Agency. In addition, the Government has agreed to support peatland rehabilitation via the establishment of the Peatland Climate Action Scheme (PCAS). This is funded via the Government and by Bord na Móna.
- Peatland rehabilitation (Phase 1 rehabilitation) was carried out at Ballybeg/Lanespark/Derryvella Bog in 2018-2021 with extensive drain-blocking and hydrological management.
- The bog has been re-wetted. Pioneer cutaway vegetation is beginning to develop across these bogs and pioneer habitats and vegetation are establishing.
- Bord na Móna are proposing to carry out additional rehabilitation in Ballybeg Bog and Derryvella Bog in 2025 (Phase 2).
- The key objective of peatland rehabilitation is environmental stabilisation. This means developing habitats and vegetation back onto the bare peat (putting a “skin” back onto the peat), and minimising effects to downstream waterbodies. Ballybeg/Lanespark/Derryvella Bog were drained in the past to allow peat production. Better results for water quality improvements, climate action, the reduction of carbon emissions and biodiversity are achieved when the remaining peat is re-wetted.
- Measures proposed for the bog include optimisation of water levels within existing waterbodies and drain blocking. Some fertiliser will be spread on headlands and other areas (a small part of the overall area) to encourage vegetation growth.
- In general, soggy ground conditions are preferred whereby the remaining peat is wet and plants that prefer wetter conditions, like Bog Cotton, will thrive.
- Areas with deeper residual peat have the capacity to regrow *Sphagnum* moss again, where there are suitable hydrological conditions. *Sphagnum* is a key species for restoring naturally functioning raised bog conditions.
- Many BnM bogs cannot be restored back to raised bog in the short-term, as so much peat has been removed and the environmental conditions have been modified. However other peatland habitats with Heather, Bog Cotton, Rushes, Purple Moor-grass, Bog-mosses and scattered trees will develop, and in time a naturalised peatland can be restored.
- The development of a range of habitats in Ballybeg/Lanespark/Derryvella Bog will support biodiversity including plants, insects, birds and mammals. This includes some species that are rare and protected in the wider landscape. It will increase the national area of native woodland. Many wetland habitats in the

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wider landscape have been reclaimed for agriculture and other uses, and peatland rehabilitation is an opportunity to create new peatland and wetland habitats.

- Most of the bog comprises of shallow peat depths. Some deeper peat remains in Derryvella Bog.
- The environmental conditions of Ballybeg/Lanespark/Derryvella Bog mean that wetland habitats (reedbeds, fen, wet woodland, open water) will develop across the majority of the site in mosaic with some embryonic bog habitats in areas with deeper residual peat, and Birch woodland in the drier areas.
- Ballybeg/Lanespark/Derryvella Bog has a gravity drainage regime.
- Rehabilitation measures will be planned by a team consisting of expert ecologists, hydrologists and engineers. It is a guiding principle of BnM rehabilitation planning that no actions or activities will be undertaken that would negatively impact on adjacent land. No boundary drains will be blocked. Water will still leave the bog via the existing outlets.
- It will take some time for vegetation and habitats to fully develop at the most recently peat harvested areas of the bog, and a wetland/peatland ecosystem to developed. However, it is expected that most of these areas will be developing pioneer vegetation after 5-10 years.
- This is a peatland rehabilitation plan. This plan does not consider future after-use or development. BnM continually reviews its land-bank to consider future commercial or industrial developments. Any other proposed development will be planned in adherence to relevant planning guidelines and will consider the rehabilitation and the condition of the bog.
- This is a peatland rehabilitation plan. BnM are planning to develop a potential renewable energy project at Lanespark Bog as part of the proposed Littleton Wind Farm. The Wind Farm project is currently in the pre-planning stage and is expected to be submitted for planning permission in 2026. Lanespark has already been rehabilitated during 2018-2021. Any other proposed development will be planned in adherence to relevant planning guidelines and will consider the rehabilitation and the condition of the site.
- Peatland rehabilitation of this bog will bring a range of benefits to the local community via improvements to the local landscape and is also important for supporting national policies and strategies in relation to reduction of carbon emissions from these peatlands, supporting biodiversity and improvements to water quality.
- Ballybeg/Lanespark/Derryvella partially overlaps the Tipperary Decarbonising Zone. A Decarbonising Zone (DZ) is a spatial area, identified by each local authority in Ireland, in which a range of climate change mitigation measures are identified, whilst enhancing and embracing adaptation and biodiversity measures to contribute to reaching wider national climate action targets. DZs are a demonstration and testbed of what is possible for decarbonisation and climate action at a local and community level. Through a feedback loop of experimentation and evaluation, the DZ enables a flexible, incremental and community-driven approach to ensure that its objectives are delivered. No constraint is required in respect of this spatial overlap.

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1. INTRODUCTION

Bord na Móna (now known as BnM) operates under IPC Licence issued and administered by the EPA to extract peat within the Littleton Bog Group (Ref. P0-499-01) (see Appendix II for details of the bog areas within this Group). As part of Condition 10.2 of this license, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area. Ballybeg/Lanespark/Derryvella Bog is located in Co. Tipperary, 1 km south-east of Littleton Village and approximately 7 km southeast of Thurles.

This document seeks to address the requirements of Condition 10.2 of IPC Licence Ref. P0-499-01:

> "*The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area.*"

It also seeks to outline measures to optimise climate action and other ecosystem services benefits, mainly through hydrological management.

This plan is a specific rehabilitation plan for the bog and outlines:

- Description of site management and status.
- Main issues and approaches to rehabilitation.
- Consultation to date with interested parties.
- Interaction with other policy and legislative frameworks (Appendix VI).
- The planned rehabilitation goals and outcomes.
- The scope of the rehabilitation plan.
- Criteria which define the successful rehabilitation and key targets to validate rehabilitation.
- Proposed rehabilitation actions.
- Proposed timeframe to implement these measures.
- Budget and Costings.
- Associated aftercare, maintenance, and monitoring.

Note: This plan should be read in conjunction with the accompanying Map book.

Ballybeg/Lanespark/Derryvella Bog is part of the Littleton Bog Group and supplied the Littleton Brickette Factory. Bord na Móna made the decision to close this brickette factory in 2017 and to rehabilitate the Littleton Bog group.

It is proposed by Government that Bord na Móna carry out a Peatlands Enhanced Decommissioning, Rehabilitation and Restoration Scheme on its peatlands. Note this proposal is also known colloquially as the 'Peatlands Climate Action Scheme' (PCAS). The additional costs of the Scheme will be supported by Government through Ireland's National Recovery and Resilience Plan administered by the Department of Environment, Climate and Communications (DECC), while the National Parks and Wildlife Service (NPWS) acts as the Scheme regulator. This Scheme will significantly go beyond what is required to meet rehabilitation and decommissioning obligations (Appendix VII & IX) under existing EPA IPC licence conditions. Improvements supported by the Scheme will ensure that environmental stabilisation is achieved (meaning IPC obligations are met), and importantly, significant additional benefits, particularly relating to climate action and other ecosystem services, will also be delivered. The Scheme commenced in 2021.

Ballybeg/Lanespark/Derryvella Bog was rehabilitated by Bord na Móna between 2018-2021 (Phase 1 rehabilitation). This updated rehabilitation plan supersedes the previous rehabilitation plan prepared in 2018.

Ballybeg Bog and Derryvella Bog are proposed to be part of this Scheme (PCAS), and this updated rehabilitation plan outlines the approach to be taken. Additional peatland rehabilitation (Phase 2 Rehabilitation) has been

proposed for Ballybeg and Derryvella Bogs, with the objective of improving hydrological conditions across these bogs and targeting bare peat areas to speed up the trajectory of natural vegetation colonisation. Measures will include:

- More intensive management of water levels through pump management/adaption, drain-blocking and bunding.
- Re-profiling that will deliver suitable conditions for development of wetlands, fens and bog habitats.
- Targeted fertiliser applications.

These measures are collectively designed to optimise hydrological conditions (ideally and where possible water-levels <10 cm) for climate action benefits and to accelerate the trajectory of the site towards a naturally functioning ecosystem, and eventually a reduced carbon source/carbon sink again. In some areas of dry cutaway this trajectory will be significantly longer, and it is not feasible in the short-term to re-wet some areas. These areas will develop other habitats. The key to optimising climate action benefits is the restoration of suitable hydrological conditions and more intensive intervention means that the extent of suitable hydrological conditions can be optimised.

Only the costs associated with the additional, enhanced, and accelerated rehabilitation, i.e. those measures which go beyond the existing decommissioning and rehabilitation requirements arising from Condition 10, will be eligible for support under the Scheme. Bord na Móna announced the complete cessation of industrial peat production across its estate in January 2021.

It is expected that the Scheme (PCAS) will have benefits accruing from biodiversity provision, water quality and storage attenuation as well as increased carbon storage, reduced carbon emissions and acceleration towards carbon sequestration. The Scheme will also facilitate monitoring of carbon fluxes (Greenhouse Gases and fluvial carbon) in selected areas (in addition to other established Research programmes), to monitor changes in where the interventions will accelerate the trajectory towards a naturally functioning peatland ecosystem.

1.1 Constraints and Limitations

This document covers the area of Ballybeg/Lanespark/Derryvella Bog, shown in drawing number *BNM-DR-26-07-RP-01*.

Lanespark Bog is not being proposed for Phase 2 rehabilitation as part of this plan. Phase 1 rehabilitation across Lanespark has been completed between 2018-2021. Bord na Móna and SSE are currently developing a renewable energy project called Littleton Wind Farm, which will overlap Lanespark Bog, Littleton Bog and a small part of Longfordpass (Bord na Móna Wind Farm | Littleton Wind Farm). This renewable energy project is in pre-planning.

Several amenity developments have been developed at Ballybeg/Lanespark/Derryvella Bog. Part of the cutaway at Derryvella Bog was developed as Lough Doire Bhile amenity area (between 1999-2001) and is now leased to the Slieve Ardagh Rural Development Community Group. Glacial substrates were dug out to create a lake basin and the surrounding area was re-profiled. The Loch Dhoire Bhile loop, a 2.4 km walking trail, has also been developed in this area in recent years. Lough Doire Bhile Wildlife Reserve and amenity area are mapped as constraints on the rehabilitation plan.

The Littleton Labyrinth is an amenity project that was developed in partnership with Tipperary County Council. Initially a feasibility study was carried out that looked at developing greenway amenity, and associated facilities across the Littleton Bogs, and potential links to existing infrastructure and local villages/towns. Tipperary County Council and Bord na Móna developed an amenity walking/cycling track along the headland/former rail line

corridors along the northwestern margins of Derryvella Bog, linking to the Loch Doire Bhile amenity area, as part of the Littleton Labyrinth Greenway in 2024. The proposed rehabilitation measures will not overlap with these features and there is no constraint to rehabilitation.

Bord na Móna are planning the development of an additional amenity trail, along the eastern and southern headlands of Derryvella Bog and the eastern and northern headlands of Ballybeg, as part of the Midlands Network Trail, designed to link to the Littleton Labyrinth greenway. The amenity development will consist of shared cycle and walkways, associated signage and fencing. The planned amenity route has been mapped as a constraint on rehabilitation maps. This project has been submitted for planning permission (February 2025).

Ballybeg Bog is proposed to be included in the Coillte/BnM Midlands Native Woodland Project (Midlands Native Woodland - Coillte). The main objective of this proposed project is to develop and enhance native woodland in areas of cutaway that would remain naturally dry, developing woodland habitat that would naturally complement wetland and peatland habitats already developing across these sites. An area of 11.2 ha is proposed for planting at this Bog. This proposed project is currently being considered for consent by the Forest Service. Areas proposed to be included in Native Woodland Project have also been mapped as constrained land in the rehabilitation plan.

An area of Coillte forestry occurs at the western extent of Derryvella Bog. This area has been excluded from the rehabilitation plan. The southern extent of Derryvella Bog is proposed to be used as a Bushcraft Site and has been identified as constrained land. Local Roads, agricultural land and areas under grazing license occur around the margins and have been mapped as constraints on the rehabilitation plan. There are no known rights of way, or turbary areas, at either bog.

2. METHODOLOGY

This rehabilitation plan was developed with a combination of desktop and field surveys, consultations with internal and external stakeholders and cognisance of the Scheme (PCAS). The development of this rehabilitation plan considered recently published guidance issued by the EPA, *'Guidance on the Process of Preparing and Implementing a Bog Rehabilitation Plan' (EPA, 2020)*.

The ecological information and site information collected during the Bord na Móna ecological baseline survey, additional confirmatory site visits (covering the period 2011 to 2025 inclusive) and monitoring and desktop analysis forms the basis for the development of the rehabilitation plan for the bog, along with:

- Experience of 40 years of research on the after-use development and rehabilitation of the Bord na Móna cutaway bogs (Clarke, 2010; Bord na Móna, 2016);
- Significant international engagement during this period with other counties in relation to best practice regarding peatland rehabilitation and after-use through the International Peat Society and the Society for Ecological Restoration (Joosten & Clarke, 2002; Clarke & Rieley, 2010; Gann *et al*., 2019);
- Consultation and engagement with internal and external stakeholders;
- GIS Mapping;
- BNM drainage surveys;
- Bog topography and LIDAR data;
- Previous research studies on site;
- Hydrological modelling; and
- The development of a Methodology Paper outlining the Scheme (PCAS). This rehabilitation includes enhanced measures defined in the Methodology Paper which are designed to exceed the standard

stabilisation requirements as defined by the IPC Licence and to enhance the ecosystem services of Ballybeg/Lanespark/Derryvella Bog, in particular, optimising climate action benefits.

2.1 Desk Study

The desk study involved collecting all relevant environmental and ecological data for the study area. The development of the rehabilitation plan also takes account of research, experience and engagement with other peatland restoration and rehabilitation projects and peatland research including Irish, UK, European and International best practice guidance (full citations are in the References Section):

- Anderson *et al*. (2017). An overview of the progress and challenges of peatland restoration in Western Europe.
- Barry, T.A. *et al*. (1973). A survey of cutover peats and underlying mineral soils. Soil Survey Bulletin No. 30. Dublin, Bord na Móna and An Foras Taluntais.
- Bonn *et al*. (2017). Peatland restoration and ecosystem services- science, policy and practice.
- Carroll *et al*. (2009). *Sphagnum* in the Peak District. Current Status and Potential for Restoration. Moors for the Future Report No 16.
- Clark & Rieley (2010). Strategy for responsible peatland management.
- Eades *et al*. (2003). The Wetland Restoration Manual.
- Farrell & Doyle (2003). Rehabilitation of Industrial Cutaway Atlantic Blanket Bog, NW Mayo, Ireland.
- Gann *et al*. (2019). International Principles and Standards for the practice of Ecological Restoration.
- Joosten & Clarke (2002). Wise Use of mires and peatlands – Background and Principles including a framework for Decision-making.
- Lindsay (2010). Peatbogs and Carbon: a Critical Synthesis to Inform Policy Development in Oceanic Peat Bog Conservation and Restoration in the Context of Climate Change.
- Mackin *et al*. (2017). Best practice in raised bog restoration in Ireland. Irish Wildlife Manuals, No. 99. National Parks and Wildlife Service,
- McBride *et al*. (2011). The Fen Management Handbook (2011), Scottish Natural Heritage.
- McDonagh (1996). Drain blocking by machines on Raised Bogs. Unpublished report for National Parks and Wildlife Service.
- NPWS (2017a). National Raised Bog Special Areas of Conservation management plan. Department of Arts, Heritage and the Gaeltacht.
- Pschenyckyj et al., (2021), Optimising Water Quality Returns from Peatland Management while Delivering Co-Benefits for Climate and Biodiversity. An Fóram Uisce.
- Regan*, et. al.* (2020). Ecohydrology, Greenhouse Gas Dynamics and Restoration Guidelines for Degraded Raised Bogs. EPA Research Report. Prepared for the Environmental Protection Agency by Trinity College Dublin.
- Renou-Wilson *et al*. (2011). BOGLAND - Sustainable Management of Peatlands in Ireland. STRIVE Report No 75 prepared for the Environmental Protection Agency.
- Schouten (2002). Conservation and Restoration of Raised Bogs: Geological, Hydrological and Ecological Studies. Dúchas - The Heritage Service of the Department of the Environment and Local Government, Ireland.
- Thom (2019). Conserving Bogs – Management Handbook.

- Wheeler & Shaw (1995). Restoration of Damaged Peatlands – with Particular Reference to Lowland Raised Bogs Affected by Peat Extraction.

Additional on-line resources were also incorporated into the desk study, including:

- Littleton Integrated Pollution Control Licence.
- Littleton Annual Environmental Reports.
- Review of the National Biodiversity Data Centre (NBDC) webmapper;
- Inland Fisheries Ireland (IFI) Reports.
- Environmental Protection Agency database (www.epa.ie).
- EPA Guidance on Requests for Alterations to a Licensed Industrial or Waste Activity.
- Birdwatch Ireland online data (including I-WeBS and CBS datasets; www.birdwatchireland.ie).
- Geological Survey of Ireland - National Draft Bedrock Aquifer map.
- Geological Survey of Ireland - Groundwater Database (www.gsi.ie).
- Historic Environment Viewer at https://webgis.archaeology.ie/historicenvironment/
- National Parks & Wildlife Services Public Map Viewer (www.npws.ie).
- Water Framework Directive catchments.ie/maps/ Map Viewer (www.catchments.ie).
- OPW Indicative Flood Maps (www.floodmaps.ie).
- CFRAM Preliminary Flood Risk Assessment (PFRA) maps (www.cfram.ie).
- River Basin Management Plan for Ireland 2022-2027.
- Bord na Móna Annual Report 2024.
- Spatial data in respect of Article 17 reporting, available online at https://www.npws.ie/maps-and-data/habitat-and-species-data/article-17.

2.2 Consultation

A number of stakeholders have been identified during the course of Bord na Móna's rehabilitation and Biodiversity Action Plan activities and are contacted during the rehabilitation planning process for their views. See Section 4.

2.3 Field Surveys

Bord na Móna carried out a baseline ecological survey of all of its properties in 2012-2018 and developed habitat maps. As part of this exercise, Ballybeg/Lanespark/Derryvella Bog was surveyed in 2012. Habitat maps were updated in 2017. A survey also took place in January 2025 (at Ballybeg Bog and Derryvella bog only) in advance of the updating this rehabilitation plan. Habitat maps have been updated, where required. This rehabilitation plan is informed by the original baseline survey as well as subsequent confirmatory site walk-over surveys and visits, and updates to baseline data.

Habitat mapping followed best practice guidance from Smith *et al.* (2011). Map outputs including all habitat maps and target notes were produced using GIS software application packages (ArcGIS). General marginal habitats and other habitats that had not been modified significantly by industrial peat extraction were classified using Fossitt *et al*. (2000). Plant nomenclature for vascular plants follows Stace (2019), while moss and liverwort nomenclature follow identification keys published by the British Bryological Society (2010). A more detailed Bord na Móna classification system was previously developed for classifying pioneer cutaway habitats as Fossitt categories were deemed not to be detailed enough for cutaway bog (much of cutaway bog could be classified as Cutover Bog -

PB4). Much of the pioneer cutaway vegetation is still at an early stage of its development and cannot be assigned to Fossitt (2000) Level 3 categories yet.

A detailed ecological survey report for Ballybeg/Lanespark/Derryvella Bog is contained in Appendix III.

3. SITE DESCRIPTION

Ballybeg/Lanespark/Derryvella Bog is located in Co. Tipperary, 1 km south-east of Littleton Village and approximately 7 km southeast of Thurles. Ballybeg/Lanespark/Derryvella Bog is a series of three bogs that are closely linked. Ballybeg Bog is located 1.4 km northwest of Derryvella Bog. Lanespark Bog is located between the two bogs. Lanespark Bog has been mapped as a constraint on rehabilitation maps, as the bog is included in the proposed Littleton Wind Farm footprint. Only Ballybeg Bog and Derryvella Bog are considered for Phase 2 measures within this rehabilitation plan.

Ballybeg/Lanespark/Derryvella Bog is in the Littleton Bog group (Ref. P0499-01). Lanespark (the central bog) is the location of the former Lanespark Briquette factory. The total area of Ballybeg/Lanespark/Derryvella Bog is 473.3 ha (125.7 ha is within the rehabilitation footprint; 348.7 ha has been mapped as constrained land).

The majority of the former production area of Ballybeg Bog and Derryvella Bog are dominated by bare peat that is beginning to develop pioneer vegetation. In areas that have been cutaway for a longer period, the bog is developing pioneer vegetation, scrub, wetlands and emerging Birch/Willow woodland. The surrounding landscape is dominated by a mosaic of farmland, largely consisting of improved grassland, conifer plantations and other bogs, many owned and managed by Bord na Móna.

Bord na Móna ceased industrial peat extraction in 2017 and implemented a rehabilitation plan across Ballybeg/Lanespark/Derryvella Bog between 2018-2021 (Phase 1 rehabilitation), consisting of drain blocking and hydrological management. Large areas of the bog have been successfully rewet with water retained at, and above the surface of the bog as a result of drain-blocking and reduced drainage.

The North Glengoole Stream (EPA Code: 16N28) flows along the eastern boundary of the Derryvella section of the bog, originating from the northeast before flowing towards the northwest, along the southern boundary of Derryvella. It flows through Lanespark Bog, ultimately discharging into the Black (Two Mile Borris) Stream (EPA Code: 16B01). The Black Stream then continues northwest between Ballybeg and Littleton Bog before flowing north to join the River Drish (EPA Code: 16D02). The Breegagh Stream (EPA Code: 16B03) flows along the southern boundary of Lanespark in a northwest direction, flowing approximately 500m south of the southern boundary of Ballybeg, where it joins the River Drish. An unnamed stream flows southwest from its source beyond the southern boundary of the Ballybeg section of bog to join the Breegagh Stream. Both Derryvella and Ballybeg are gravity drained bogs.

Bord na Móna propose to carry additional rehabilitation (Phase 2) in Ballybeg and Derryvilla Bog in 2025. See Drawing number *BNM-DR-26-07-RP-01: Bog Site Location*, included in the accompanying Mapbook[1], which illustrates the location of Ballybeg/Lanespark/Derryvella Bog in context to the surrounding area.

3.1 Status and Situation

3.1.1 Site history

Ballybeg/Lanespark/Derryvella Bog was used to supply fuel peat to the Littleton Briquette Factory, Thurles, Co. Tipperary. Ballybeg/Lanespark/Derryvella Bog was in industrial peat production from 1970's to 2017. In 2017,

[1] Cutaway Bog Decommissioning and Rehabilitation Plan – Ballybeg/Lanespark/Derryvella Bog Map Book

Bord na Móna announced the closure of the Littleton Briquette factory and the cessation of industrial peat production in a number of cutaway bogs within the Littleton Bog Group, including Ballybeg/Lanespark/Derryvella.

Previous Phase 1 Peatland rehabilitation was carried out between 2018-2021 with measures including drain-blocking, berms and hydrological management (Phase 1 rehabilitation). See Figure *BNM-DR-26-07-30: Previous Rehabilitation* in the accompanying mapbook.

3.1.2 Current land-use

Ballybeg Bog and Derryvella Bog have some remaining peat stockpiles. The peat stock on the bog will be subject to decommissioning as part of the rehabilitation measures. This process is described fully in Appendix XIV.

Part of the cutaway at Derryvella Bog was developed as Lough Doire Bhile amenity area (between 1999-2001) and is now leased to the Slieve Ardagh Rural Development Community Group. Glacial substrates were dug out to create a lake basin and the surrounding area was re-profiled. The Loch Dhoire Bhile loop, a 2.4 km walking trail, has also been developed in this area in recent years. Lough Doire Bhile Wildlife Reserve and amenity area are mapped as constraints on the rehabilitation plan.

Tipperary County Council and Bord na Móna have developed an amenity walking/cycling track along the headland/former rail line corridors along the northwestern margins of Derryvella Bog, linking to the Loch Doire Bhile amenity area, as part of the Littleton Labyrinth Greenway in 2024. The proposed rehabilitation measures will not overlap with these features and there is no constraint to rehabilitation.

Bord na Móna are planning the development of an amenity trail, along the eastern and southern headlands of Derryvella Bog and the eastern and northern headlands of Ballybeg, as part of the Midlands Network Trail, designed to link to the Littleton Labyrinth greenway. The amenity development will consist of shared cycle and walkways, associated signage and fencing. The planned amenity route has been mapped as a constraint on rehabilitation maps. This project has been submitted for planning permission (February 2025).

Bord na Móna are planning to develop a potential renewable energy project at Lanespark Bog as part of the proposed Littleton Wind Farm, which will overlap Lanespark Bog, Littleton Bog and a small part of Longfordpass (Bord na Móna Wind Farm | Littleton Wind Farm). This renewable energy project is in pre-planning.

Ballybeg Bog is proposed to be included in the Coillte/BnM Midlands Native Woodland Project (Midlands Native Woodland - Coillte). The main objective of this proposed project is to develop and enhance native woodland in areas of cutaway that would remain naturally dry, developing woodland habitat that would naturally complement wetland and peatland habitats already developing across these sites. An area of 11.2 ha is proposed for planting at this Bog. This proposed project is currently being considered for consent by the Forest Service. Areas proposed to be included in Native Woodland Project have also been mapped as constrained land in the rehabilitation plan.

There are no known rights of way, or turbary areas, at either Ballybeg Bog or Derryvella Bog. Some areas of agricultural land occur along the margins and have been mapped as constrained land on rehabilitation mapping.

The southern extent of Derryvella Bog is proposed to be used as a Bushcraft Site and has been identified as constrained land.

Ballybeg/Lanespark/Derryvella partially overlaps the Tipperary Decarbonising Zone. A Decarbonising Zone (DZ) is a spatial area, identified by each local authority in Ireland, in which a range of climate change mitigation measures are identified, whilst enhancing and embracing adaptation and biodiversity measures to contribute to reaching wider national climate action targets. DZs are a demonstration and testbed of what is possible for decarbonisation

and climate action at a local and community level. Through a feedback loop of experimentation and evaluation, the DZ enables a flexible, incremental and community-driven approach to ensure that its objectives are delivered. No constraint is required in respect of this spatial overlap.

3.1.3 Socio-Economic conditions

Bord na Móna has historically been a vital employer for the rural communities in the Irish Midlands. Bord na Móna compiled a report on the role of peat extraction in the midlands historically in which they report that in 1986, by the end of Bord na Móna's Third Development Programme, a total of twenty-three work locations had been established around the country. The company had an average employment of approximately 4,688 in the mid 1980's, with a peak employment of 6,100 during the production season, which placed it among the country's largest commercial employers. The importance of such levels of employment were largely due to its regional concentration in the Midlands and the lack of alternative employment opportunities in these areas at the time.

According to the Energy Crop Socio-Economic Study undertaken by Fitzpatrick Associates in 2011, there were an estimated 1,443 jobs supported by the peat-to-power industry in Ireland at the time, some 81% of which were located in the catchment areas of the three peat-fired generating stations (Lough Ree, West Offaly, and Edenderry Power Stations). These constituted jobs in the plants and in peat extraction, jobs indirectly supported in upstream supply industries and jobs induced through the trickle-down effects of the wages and salaries of those supported directly or indirectly. These job numbers have now declined with the cessation of peat extraction.

In respect of Ballybeg/Lanespark/Derryvella Bog, jobs included in the above study would have included those to facilitate extraction of peat at this bog and associated processing and transfer to Littleton Briquette Factory.

As the primary employer in many Midland counties, Bord na Móna played a central role in building communities through several initiatives, including development and construction of local housing complexes, education bursaries, support of local sporting clubs, the provision of community gain funds, charity programmes and the provision and building of amenity areas.

In 2017, Bord na Móna announced the closure of the Littleton Briquette factory and the cessation of industrial peat production in a number of cutaway bogs within the Littleton Bog Group, including Ballybeg/Lanespark/Derryvella Bog. Employment numbers have now declined following the cessation of peat extraction at this bog. It is anticipated that the scheme (PCAS) will provide some employment for a team of workers at this site for a period of time (> 1 year).

There are approximately 1400 people working in Bord na Móna at present, with approximately 135 roles directly involved in PCAS.

3.2 Geology and Peat Depths

3.2.1 Sub-soil geology

GSI bedrock geology data indicates that Ballybeg/Lanespark/Derryvella Bog is underlain by several bedrock units. The Ballybeg section of the site is primarily underlain by the Aghmacart Formation, which consists of dark shaly micrite and peloidal limestone to the west of the site. A narrow strip of the Crosspatrick Formation, characterised by pale-grey cherty crinoidal limestone, runs in a northwest-southeast alignment through the centre of the site. To the east, the area is underlain by Waulsortian Limestone, which is divided by a boundary of dolomitization into dolomitised massive fine-grained limestone to the west and a more significant proportion of massive unbedded lime-mudstone to the east.

The embedded lime-mudstone unit also extends beneath the western boundary of the Derryvella section of the site, where Lough Derryvella is located. East of this lake, a southwest-northeast aligned fault separates this from a very narrow deposit of the Crosspatrick Formation, similar to that found beneath Ballybeg. Most of the Derryvella section is underlain by the Aghmacart Formation and a very narrow segment in the southeast corner of Derryvella is underlain by the Durrow Formation, containing shaly fossiliferous and oolitic limestone.

There is an anticlinal axis structural fault that extends southwest-northeast through the Waulsortian limestone unit between the Ballybeg and Derryvella sections of the bog.

Quaternary sediment data maps Ballybeg/Lanespark/Derryvella Bog as cut over raised peat, yet surrounded by inorganic deposits, which are predominantly till derived from limestone along with some localised pockets of gravels from limestones further south and small pockets of alluvium in the wider surroundings.

3.2.2 *Peat type and depths*

Peat depths have been mapped across the bog using GPR and are provided in figure *BNM-DR-26-07-RP-04: Peat depths*.

In general peat is relatively deep across much of Ballybeg/Lanespark/Derryvella Bog. On the Ballybeg section of the bog, most of the bog has typical peat depths of 1.5m – 4m, with shallow deposits close to the southern and eastern margins (<1m). On the Derryvella section of the bog peat is generally 1.5m -4m, with shallower deposits close to the southern margin.

3.3 Key Biodiversity Features of Interest

3.3.1 Current habitats

This section describes the habitats within the PCAS rehabilitation extent at Ballybeg/Lanespark/Derryvella Bog, which includes Ballybeg Bog and Derryvella Bog only.

The majority of the former production area of Ballybeg Bog and Derryvella Bog are dominated by bare peat that is beginning to develop pioneer vegetation and areas of open water. Ballybeg Bog and Derryvella Bog were subject to Phase 1 rehabilitation, between 2018-2021 (consisting of drain blocking and berms). Large areas of these bogs have been made wetter with water retained at and above the surface of the bog as a result of berms and reduced drainage.

In areas that have been cutaway for a longer period, particularly the western lobe of Derryvella, the bog is developing pioneer vegetation, scrub, wetlands and emerging Birch/Willow woodland.

The most common vegetation communities/habitats[2] present in the former production areas within the PCAS rehabilitation extent include:

- Bare peat (0-50% cover) (BP) (Plate 3-1 – Plate 3-3).

[2] Codes refer BnM classification of pioneer habitats of production bog

- Birch scrub including open *Betula/Salix*-dominated community (B) (Birch/Willow) (oBir) and closed *Betula/Salix*-scrub community (C) (Birch/Willow) (cBir) (generally in mosaic with other cutaway habitats) (Plate 3-1; Plate 3-8; Plate 3-9; Plate 3-11).
- Pioneer dry *Calluna vulgaris*-dominated community (Heather) (dHeath) (generally in mosaic with Birch scrub, *Molinia caerulea*-dominated community (dry) (Purple Moorgrass) (gMol) and *Ulex europaeus*-dominated community (Gorse) scrub (eGor)).
- Pioneer open habitats with pioneer *Campylopus*-dominated community (pCamp), pioneer *Juncus effusus*-dominated community (Soft Rush) (pJeff), pioneer *Eriophorum angustifolium*-dominated community (Bog Cotton) (pEang), Pioneer *Juncus bulbosus*-dominated community (Bulbous Rush) (pJbulb), pioneer *Carex viridula*/brown moss community (rich fen) (pVir), *Molinia caerulea*-dominated community (dry) (Purple Moorgrass) (gMol), open *Betula/Salix*-dominated community (B) (Birch/Willow) (oBir) (Plate 3-5; Plate 3-10).
- Pioneer open habitats and scrub with *Molinia caerulea*-dominated community (dry) (Purple Moorgrass) (gMol) and Pioneer *Juncus effusus*-dominated community (Soft Rush) (pJeff) in mosaic with open *Betula/Salix*-dominated community (B) (Birch/Willow) (oBir) and *Ulex europaeus*-dominated community (Gorse)(eGor).
- Wetlands with open water (OW), pioneer *Phragmites australis*-dominated community (Common Reed) (pPhrag), Pioneer *Typha latifolia*-dominated community (Reedmace) (pTyp) and Pioneer *Carex rostrata*-dominated community (Bottle Sedge) (pRos) (Plate 3-3; Plate 3-6; Plate 3-10).
- Pioneer poor fen dominated by *Juncus effusus*-dominated community (Soft Rush) (pJeff) and Pioneer *Eriophorum angustifolium*-dominated community (Bog Cotton) (pEang) (Plate 3-7).
- Woodland with Closed *Betula*/*Salix*-scrub community (C) (Birch/Willow) (cBir), Dense *Pteridium aquilinum* (Bracken) (dPter), *Molinia caerulea*-dominated community (dry) (Purple Moorgrass) (gMol) and dry *Calluna vulgaris*-dominated community (Heather) (dHeath) (Plate 3-9).
- Grassland dominated with *Molinia caerulea*-dominated community (dry) (Purple Moorgrass) and *Dactylis-Arrhenatherum* community (gDact-Arr) (around margins and in Derryvella western lobe).

The most common habitats[3] found around the margins include:

- Scrub (WS1)
- Birch woodland (WN7)
- Conifer plantation (WD4)
- Improved grassland (GA1)
- Raised bog (PB1)
- Treeline (WS2)

See Drawing number *BNM-DR-26-07-RP-17: Current Habitat Map*, included in the accompanying Mapbook, which illustrates the habitats at Ballybeg Bog and Derryvella Bog (including the Loch Doire Bhile amenity area). The

[3] Codes refer to Heritage Council habitat classification, Fossitt 2000

mapping excludes Lanespark bog as it was not included in recent habitat surveys. See below for photographic plates of habitats (taken in 2024 and 2025).

Photos of Habitats at Ballybeg/Lanespark/Derryvilla Bog (2024/2025)



Plate 3-1 Aerial of Ballybeg Bog, looking west. The bog is a mix of bare peat, wetlands and pioneer open habitats, with Birch woodland (BirWD) and Birch scrub (oBIR, cBir) along the margins.



Plate 3-2 Bare peat (0-50% cover) (BP) on a high field at Ballybeg Bog.



Plate 3-3 Open water (OW) and poineer open habitats in Ballybeg Bog.

Photos of Habitats at Ballybeg/Lanespark/Derryvilla Bog (2024/2025)



Plate 3-4 Pioneer heather dominated vegetation in Ballybeg Bog.



Plate 3-5 Pioneer open habitats in Ballybeg Bog.



Plate 3-6 Wetlands with Reedbeds in Ballybeg Bog.



Plate 3-7 Pioneer poor fen in Ballybeg Bog.



Plate 3-8 Birch Woodland (BirWD) in Ballybeg Bog.



Plate 3-9 Aerial showing mosaic of woodland and scrub, along margins of Ballybeg Bog.

Photos of Habitats at Ballybeg/Lanespark/Derryvilla Bog (2024/2025)



Plate 3-10 Derryvella Bog, eastern lobe (view looking north), showing wetlands, open water and pioneer open habitats that have developed following Phase 1 rehabilitation.



Plate 3-11 Derryvella Bog, eastern lobe, southern extent (view looking south) with dry heather dominated vegetation, bracken, gorse. This area has not been subject to any previous rehab.

3.3.2 Species of conservation interest

A number of species of conservation concern utilise the habitats available at Ballybeg/Lanespark/Derryvella Bog. The following is a summary of the records of these species available within both Bord na Móna and NBDC records.

- Mammal species have been recorded on or in close proximity to the bog including Badger (*Meles meles*), Red Fox (*Vulpes vulpes)*, European Otter (*Lutra lutra*), Irish Hare (*Lepus timidus subsp. hibernicus*), Pine Marten (*Martes martes*) and Eurasian Badger (*Meles meles*).
- Marsh Fritillary (*Euphydryas aurinia*) have been recorded at the Lough Doire Bhile, Derryvella and Ballybeg, including larval webs and butterflies in flight. Marsh Fritillary is a species of significant conservation interest (Annex II species – EU Habitats Directive).
- White-clawed Crayfish (*Austropotamobius pallipes*) are present in Loch Doire Bhile. White-clawed Crayfish is also listed on Annex II of the EU Habitats Directive.
- Black-headed Gulls (*Larus ridibundus*) have been recorded on Ballybeg Bog (in an area with extensive water cover) in 2024. Both juveniles (year 1 and 2) and an adult displaying potential breeding behaviour were recorded. A larger number of Black-headed gulls (11 birds in one flock) were recorded in Derryvella Bog in 2024, utilising the more developed wetland areas. Black-headed gull is a BOCCI[4] Amber listed bird species.
- Whooper Swans (*Cygnus cygnus*) (7 adults) were also recorded in Derryvella Bog. Whooper Swan is listed on Annex I of the EU Birds Directive and is a BOCCI Amber listed bird species.
- A pair of Peregrine Falcons (*Falco peregrinus*) (Ballybeg Bog) and a Hen Harrier (*Circus cyaneus*) (Derryvella Bog) were also recorded in 2024. Peregrine Falcon is listed on Annex I of the EU Birds Directive. Hen Harrier is a BOCCI Amber listed bird species.
- Records of other bird species of conservation interest associated with Ballybeg/Lanespark/Derryvella Bog available from BNM and NBDC records include BOCCI red listed species Eurasian Curlew (*Numenius arquata*), Common Kestrel (*Falco tinnunculus*), Snipe (*Gallinago gallinago*) and Meadow pipit (*Anthus pratensis),* and amber listed species Lesser Black-backed Gulls (*Larus fuscus*), Swallow *(Hirundo rustica)* and Skylark *(Alauda arvensis).*
- BOCCI amber listed species Teal (*Anas crecca*), Mallard (*Anas platyrhynchos*), Pintail (*Anas acuta*), and BOCCI red listed species Golden Plover (*Pluvialis apricaria*) and Lapwing (*Vanellus vanellus*) have previously recorded at the lake and wetlands of Lough Doire Bhile.

Peatland rehabilitation may result in positive quality effects on the relative abundance or proportion of species of conservation concern utilising bogs post rehabilitation. This may include Red or Amber listed species of breeding waders along with wintering species including Swans and other wildfowl.[5]

3.3.3 Invasive species

There is one Bord na Móna record for American Mink (*Mustela vison*), a high impact invasive species recorded from the bog. American Mink is also recorded on the NBDC data base in the area surrounding the bog.

A broad range of common garden escapes are occasionally present around the margins of Bord na Móna bogs, and although spatial overlap with the PCAS is expected to be limited, these are, where necessary, to be treated in line with best practice during PCAS activities.

[4] https://birdwatchireland.ie/app/uploads/2021/04/BOCCI4-leaflet-2-1.pdf

[5] https://www.bnmpcas.ie/wp-content/uploads/sites/18/2023/08/Annual-Monitoring-Report_Final-Rev-A_Redacted.pdf

3.4 Statutory Nature Conservation Designations

There are two European Sites within a 15km radius of Ballybeg/Lanespark/Derryvella Bog, including:

- River Barrow and River Nore SAC - Site code: 002162 - Distance: 10.6 km
- Lower River Suir SAC - Site code: 002137 - Distance: 10.km

No NHA's (Natural Heritage Areas) occur within 15km of Ballybeg/Lanespark/Derryvella Bog. However, several pNHA's (Proposed Natural Heritage Areas) occur:

- Laffansbridge pNHA – site code: 000965 – Distance: 5km
- Killough Hill pNHA – site code: 000959 – Distance: 9.4km
- Cabragh Wetlands pNHA – site code: 001934 – Distance: 10.5km
- Kilcooly Abbey Lake pNHA – site code: 000958 – Distance: 10.9km
- Power's Wood pNHA – site code: 000969 – Distance: 13.7km

3.4.1 Other Nature Conservation Designations

The Ramsar Convention entered into force in Ireland on 15th March 1985. Ireland currently has 45 sites/wetlands designated as Wetlands of International Importance (Ramsar Sites). These cover a surface area of 66,994ha.

There are no Ramsar sites in close proximity to Ballybeg/Lanespark/Derryvella Bog.

3.5 Hydrology and Hydrogeology

Ballybeg/Lanespark/Derryvella Bog forms part of the Suir Catchment (ID: 16) as defined by the EPA under the Water Framework Directive (WFD). It is situated within the Suir_SC_040 sub-catchment, which drains to the River Suir. The bog contains several drainage pathways and discharge locations, with most of the bog discharging to streams via silt ponds, which eventually flow into the River Suir. Ballybeg/Lanespark/Derryvella Bog has a gravity-based drainage system.

Hydrological modelling (*BNM-DR-26-07-RP-09: Depression analysis*) indicates that large parts of the bog are in natural basins with significant potential for re-wetting. It is likely that a portion of the basins in target areas will re-wet with deeper water, creating a mosaic of wetland habitats, when drains are blocked.

Regional hydrological data suggest that Ballybeg/Lanespark/Derryvella Bog receives an average precipitation of 941mm/yr (1981-2010), with an estimated annual effective rainfall rate of 512mm/yr based on GSI data. The GSI also estimate an annual average recharge rate of 17-18mm/year for Ballybeg/Lanespark/Derryvella Bog. In areas underlain by lacustrine clay, this is anticipated to be a reasonable estimate of recharge rate. However, in areas underlain by more permeable glacial material this is likely to be an underestimate, particularly where there are elevated mounds of glacial till combined with shallow peat deposits.

A higher recharge rate is expected in areas where shallow peat underlain by glacial till, which would lead to increased losses of water to depth. In these areas an estimated recharge rate of 50-100mm/yr would be considered a reasonable estimate, with a higher recharge rate expected where peat is shallow (<1m).

GSI bedrock geology data indicates that Ballybeg/Lanespark/Derryvella Bog is underlain by several bedrock units. The Ballybeg section of the site is primarily underlain by the Aghmacart Formation, which consists of dark shaly micrite and peloidal limestone to the west of the site. A narrow strip of the Crosspatrick Formation, characterised by pale-grey cherty crinoidal limestone, runs in a northwest-southeast alignment through the centre of the site.

To the east, the area is underlain by Waulsortian limestone, which is divided by a boundary of dolomitization into dolomitised massive fine-grained limestone to the west and a more significant proportion of massive unbedded lime-mudstone to the east.

The embedded lime-mudstone unit also extends beneath the western boundary of the Derryvella section of the site, where Lough Derryvella is located. East of this lake, a southwest-northeast aligned fault separates this from a very narrow deposit of the Crosspatrick Formation, similar to that found beneath Ballybeg. Most of the Derryvella section is underlain by the Aghmacart Formation and a very narrow segment in the southeast corner of Derryvella is underlain by the Durrow Formation, containing shaly fossiliferous and oolitic limestone.

There is an anticlinal axis structural fault that extends southwest-northeast through the Waulsortian limestone unit between the Ballybeg and Derryvella sections of the bog. The Aghmacart and Durrow Formations are classified as locally important aquifers (LI) as the bedrock units are considered to be moderately important only in local zones. The Crosspatrick Formation is locally important (Lm) as the bedrock is generally moderately productive. In contrast, the Waulsortian Limestone unit is described as a regionally important aquifer (Rk) as it is karstified.

A number of wells and springs have been drilled in Ballybeg and around Derryvella. Two wells were drilled close to Ballybeg in 1972 and 1974, reaching depths of 24.4 and 29.3m, respectively. These wells detected bedrock at depths of 3.6 and 3.3m below ground level, with reported yields of 98.2 m^3/day (moderate) and 41.5 m^3/day (moderate). Additionally, two wells were excavated near Derryvella in 1964 and 1971, with depths of 10.9 and 26.8m, respectively. The 1964 well reported bedrock at a depth of 4.8m below ground level, with yields of 152.7m^3/day (high) and 21.8m^3/day (low) for the two wells. (Note: the reported yields do not indicate the actual rate of abstraction. A license is required under the Water Environment (Abstractions and Associated Impoundments) Regulations 2024 for any abstraction that exceeds 25m^3/day. Locations for private abstraction licenses are not provided by the EPA, therefore it is not possible to determine whether any of these abstractions are licensed to exceed 25m^3/day.

An aquifer is an underground body of water-bearing rock or unconsolidated materials (gravel or sand) from which groundwater can be extracted in useful amounts. GSIs Aquifer classes are divided into three main groups based on their resource potential and further subdivided based on the type of openings through which groundwater flows. There are nine aquifer categories in total. Locally important aquifers are capable of supplying locally important abstractions (e.g. smaller public water supplies, group schemes), or good yields (100-400 m3/d). This data gives an indication of sub-surface deposits (bedrock and unconsolidated materials) in terms of their groundwater resource potential and dominant groundwater flow type.

Regionally important aquifers are those in which the network of fractures, fissures and joints, through which groundwater flows, is well connected and widely dispersed, resulting in a relatively even distribution of highly permeable zones. There is good aquifer storage and groundwater flow paths can be up to several kilometres in length. There is likely to be substantial groundwater discharge to surface waters (‘baseflow’) and large (>2,000 m3/d), dependable springs may be associated with these aquifers.

Groundwater vulnerability is classified as moderate across almost all of Ballybeg/Lanespark/Derryvella Bog, with the exception being the southeastern area of Ballybeg. This area is mapped as high due to the presence of rock or karst near the ground surface in a small, localised area approx. 250m south of the Ballybeg boundary. Subsoil permeability across the bog is mapped as being moderate by the GSI with an estimated recharge rate of 21-22mm/year across the bog.

Groundwater vulnerability for the area surrounding Ballybeg/Lanespark/Derryvella Bog ranges from moderate to extreme vulnerability in places. Groundwater Vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities. Groundwater vulnerability maps are based on the type and thicknesses of subsoils (sands, gravels, glacial tills (or boulder clays), peat, lake and alluvial silts and clays), and the presence of karst features. Groundwater is most at risk where the subsoils are absent or thin and, in areas of karstic limestone, where surface streams sink underground at swallow holes. These data indicate there is generally low risk of any groundwater contamination occurring at this site. Groundwater Vulnerability is typically used to indicate the susceptibility to groundwater pollution.

3.6 Emissions to surface-water and watercourses

The bog has 7 treated surface water outlets (SW10, SW11, SW12, SW13, SW14, SW15, and SW16) from previously active peat extraction catchment, all of which discharge to the Breagagh River (IE_SE_16B030200 Breagagh (Tipperary)_010)), the Black River (IE_SE_16B010100 Black (Twomileborris)_010)) and the North Glengoole River (IE_SE_16N280780 North Glengoole_010). The Breagagh River and the North Glengoole River are classed as Poor water quality status, with the Black River being classed as Moderate water quality status (Ecological Status or Potential SW 2016-2021) – Water Framework Directive.

The locations of silt ponds and associated surface water emission points, and those being monitored and sampled as part of the PCAS scheme are detailed on the attached water quality map (*BNM-DR-26-07-13: General Drainage Map*).

There is a robust monitoring program to track and verify any changes in baseline water quality conditions pre and post decommissioning and rehabilitation so that the success or otherwise can be tracked and verified for the National Parks & Wildlife Service, Environmental Protection Agency, and Local Authority Water Program, amongst a range of stakeholders.

Peat extraction is identified as a pressure in the third cycle of the River Basin Management Plan (Water Action Plan for Ireland). The main emission limit value (ELV) associated with these bogs is 35mg/l suspended solids, with trigger levels for ammonia of 3.6 mg/l and COD 100mg/l.

An analysis of the results over a number of years of the IPC licence environmental monitoring of some of the discharges from these bogs indicates that results were under the Emission Limit Value for Suspended Solids 99% of this period, with a similar level of compliance for COD and under the trigger level for Ammonia. Ammonia averaged 1.07mg/l and ranged from 0.006 to 19.5mg/l mg/l with Suspended Solids ranging from <2 to 50 mg/l and averaging 0.006 to 19.5mg/l

Table 3-1 Decommissioning and Rehabilitation Programme Water Quality Monitoring.

Bog	SW	Monitoring	SS	Colour	COD	pH	TS	TP	Ammonia
Lanespark	SW 15	Q1 06	26	178	101	7.4	50	0.05	3.32
Lanespark	SW 15	Q2 06	5	251	83	7.4	224	0.05	3.9
Lanespark	SW 15	Q3 06	5	67	37	7.9	314	0.05	3.06
Lanespark	SW 15	Q4 06	36	160	99	7.5	216	0.32	0.63
Lanespark	SW 15	Q1 07	50	220	104	7	142	0.1	1.52
Lanespark	SW 15	Q2 07	7	92	85	7.8	284	0.05	3.33
Lanespark	SW 15	Q3 07	18	333	114	7.2	232	0.05	2.27
Lanespark	SW 15	Q4 07	4	159	66	7.5	184	0.05	1.62
Lanespark	SW 15	Q1 08	40	130	110	7.5	192	0.06	1.21
Lanespark	SW 15	Q2 08	23	74	74	7.9	332	0.07	3.14
Lanespark	SW 15	Q3 08	34	384	130	7.3	163	0.04	1.91
Lanespark	SW 15	Q4 08	4	218	68	7.6	178	0.07	0.74
Lanespark	SW 15	Q1 09	4	223	60	6.7	111	0.04	0.56
Lanespark	SW 15	Q2 09	4	159	59	7.5	211	0.04	1.95
Lanespark	SW 15	Q3 09	7	326	111	7.5	170	0.04	1.7
Lanespark	SW 15	Q4 09	6	109	34	7.4	406	0.05	1.2
Lanespark	SW 15	Q1 10	5	157	43	7.4	240	0.05	3.36
Lanespark	SW 15	Q2 10	30	71	34	7.8	496	0.05	3.7
Lanespark	SW 15	Q3 10	7	89	42	7.6	294	0.05	2.61
Lanespark	SW 15	Q4 10	5	164	50	7.4	204	0.05	2.96
Lanespark	SW 15	Q1 11	5	285	65	7.2	164	0.05	2.1
Lanespark	SW 15	Q2 11	10	109	65	7.6	212	0.05	3.48
Lanespark	SW 15	Q3 11	5	27	10	8	768	0.11	0.64
Lanespark	SW 15	Q4 11	25	192	97	7.1	132	0.07	0.84
Lanespark	SW 15	Q1 12	21	193	34	7.5	214	<.05	2.68
Lanespark	SW 15	Q2 12	5	82	50	7.8	258	<.05	2.32
Lanespark	SW 15	Q3 12	7	331	67	6.9	134	<.05	1.2
Lanespark	SW 15	Q4 12	26	267	118	6.7	174	<.05	1
Ballybeg	SW 11	Q3 13	5	57	40	7.7	391	0.07	0.18
Lanespark	SW 10	Q3 13	5	177	91	7.6	272	0.05	0.07
Ballybeg	SW 12	Q3 14	<5	150	65	7.5	364	<0.05	0.04
Lanespark	SW 14	Q3 14	6	35	<10	7.8	452	<0.05	0.02
Lanespark	SW 15	Q3 14	<5	81	18	7.6	290	<0.05	4.5
Ballybeg	SW 11	Q1 15	<5	122	37	7.8	296	0.07	0.64
Lanespark	SW 10	Q1 15	<5	142	47	7.4	286	<0.05	1.9
Lanespark	SW 16	Q1 15	<5	85	30	7.8	352	<0.05	4.1
Ballybeg	SW 11	Q3 17	5	226	75	7.4	232	0.05	0.78
Ballybeg	SW 12	Q3 17	5	133	73	7.5	382	0.26	0.18
Ballybeg	SW 13	Q3 17	5	136	71	7.5	372	0.4	0.78
Lanespark	SW 10	Q3 17	6	75	25	7.7	302	0.05	0.02
Lanespark	SW 14	Q3 17	37	137	115	7.6	388	0.2	0.57
Ballybeg	SW 12	Q1 18	5	136	53	7.4	272	0.11	0.21
Ballybeg	SW 13	Q1 18	5	147	53	7.3	316	0.09	0.31
Lanespark	SW 15	Q1 18	5	107	36	7.3	178	0.05	0.35

Bog	SW	Monitoring	SS	Colour	COD	pH	TS	TP	Ammonia
Lanespark	SW 16	Q1 18	5	131	38	7.2	182	0.05	0.36
Ballybeg	SW 11	Q3 20	<2	239	57	7.1	175	<0.05	0.457
Ballybeg	SW 12	Q3 20	<2	237	55	7.6	184	<0.05	0.414
Ballybeg	SW 13	Q3 20	5	242	58	7.8	196	<0.01	0.403
Lanespark	SW 14	Q3 20	3	245	55	7.7	200	<0.01	0.127
Lanespark	SW 15	Q3 20	2	234	54	7.8	176	<0.01	0.471
Lanespark	SW 16	Q3 20	2	237	59	7.8	175	<0.01	0.447
Ballybeg	SW 11	Q4 20	6	250	79	7.5	270	0.07	0.204
Ballybeg	SW 12	Q4 20	3	290	68	7.2	251	<0.05	0.151
Ballybeg	SW 13	Q4 20	5	295	70	7.3	255	<0.01	0.196
Lanespark	SW 14	Q4 20	2	173	75	7.6	304	<0.01	0.395
Lanespark	SW 15	Q4 20	3	176	76	7.6	315	<0.01	0.316
Lanespark	SW 16	Q4 20	4	248	78	7.5	253	<0.01	0.151
Ballybeg	SW 11	Q1 21	<2	233	74	7.8	295	<0.05	0.269
Ballybeg	SW 12	Q1 21	<2	232	71	7.8	288	<0.05	0.272
Ballybeg	SW 13	Q1 21	<2	219	75	7.4	352	<0.01	0.308
Lanespark	SW 14	Q1 21	4	235	74	7.8	281	<0.01	0.293
Lanespark	SW 15	Q1 21	<2	219	72	7.3	331	<0.01	0.302
Lanespark	SW 16	Q1 21	<2	221	76	7.3	287	<0.01	0.31
Ballybeg	SW 11	Q3 21	6	106	13	7	388	<0.05	0
Ballybeg	SW 12	Q3 21	6	114	21	8	306	<0.05	0
Ballybeg	SW 13	Q3 21	8	106	15	7	372	<0.05	0
Lanespark	SW 14	Q3 21	8	120	16	7	275	<0.05	2
Lanespark	SW 15	Q3 21	<2	112	19	7	363	<0.05	0
Lanespark	SW 16	Q3 21	8	116	15	7	343	0	2
Ballybeg	SW 11	Q1 22	4	177	65	7	393	0	0
Ballybeg	SW 12	Q1 22	2	183	59	7	243	<0.05	0
Ballybeg	SW 13	Q1 22	<2	130	58	8	420	<0.05	0
Lanespark	SW 14	Q1 22	<2	179	57	7	390	0	0
Lanespark	SW 15	Q1 22	6	177	60	7	381	0	0
Lanespark	SW 16	Q1 22	3	190	58	7	260	<0.05	0
Ballybeg	SW 11	Q3 23	2	357	84	7	87	<0.05	0.135
Ballybeg	SW 12	Q3 23	6	329	81	7.5	454	0.26	0.258
Ballybeg	SW 13	Q3 23	10	396	77	7.3	310	<0.05	0.557
Lanespark	SW 14	Q3 23	15	340	80	7.2	569	0.07	0.379
Lanespark	SW 15	Q3 23	<2	119	39	7.7	468	<0.05	0.026
Lanespark	SW 16	Q3 23	4	306	81	7.2	341	<0.05	1.31
Ballybeg	SW 11	Q4 23	<2	309	75	7.1	224	<0.05	0.076
Ballybeg	SW 12	Q4 23	2	322	75	7.4	371	0.12	0.052
Ballybeg	SW 13	Q4 23	3	441	98	7.1	378	<0.05	0.198
Lanespark	SW 15	Q4 23	<2	439	126	6.9	268	<0.05	0.338
Lanespark	SW 16	Q4 23	<2	496	114	7.1	219	0.06	0.688
Ballybeg	SW 11	Q1 24	3	231	56	7.2	217	<0.05	0.169
Ballybeg	SW 12	Q1 24	4	194	42	7.4	335	0.08	0.03
Ballybeg	SW 13	Q1 24	4	356	76	7	245	<0.05	0.214

Bog	SW	Monitoring	SS	Colour	COD	pH	TS	TP	Ammonia
Lanespark	SW 14	Q1 24	<2	269	66	7.2	419	<0.05	0.283
Lanespark	SW 15	Q1 24	<2	145	43	7.5	202	<0.05	0.055
Lanespark	SW 16	Q1 24	18	76	14	7.9	416	0.07	0.045
Ballybeg	SW 11	Q2 24	<2	256	90	7.3	202	<0.05	0.102
Ballybeg	SW 12	Q2 24	<2	256	92	7.1	325	0.1	0.023
Ballybeg	SW 13	Q2 24	<2	442	116	7.1	207	<0.05	0.088
Lanespark	SW 14	Q2 24	2	350	76	7.2	217	<0.05	0.162
Lanespark	SW 15	Q2 24	<2	335	74	7.5	139	<0.05	0.697
Lanespark	SW 16	Q2 24	<2	141	40	7.7	270	<0.05	0.012
Lanespark	SW 14	Q3 24	13	174	41	6.9	839	<0.05	2.59
Lanespark	SW 15	Q3 24	3	165	37	7.4	327	<0.05	19.5
Lanespark	SW 16	Q3 24	3	54.9	10	7.8	388	<0.05	0.029
Ballybeg	SW 11	Q4 24	<2	234	74	7.2	257	<0.05	0.111
Ballybeg	SW 12	Q4 24	4	133	49	7.6	292	0.05	0.043
Ballybeg	SW 13	Q4 24	3	167	51	7.5	335	<0.05	0.595
Lanespark	SW 14	Q4 24	3	300	87	7.6	345	0.05	0.006
Lanespark	SW 15	Q4 24	<2	210	62	7.4	246	<0.05	1.55
Lanespark	SW 16	Q4 24	2	56.6	28	7.8	367	<0.05	0.028

Rehabilitation of cutaway peatland is closely linked with control of emissions. One of the criteria for successful rehabilitation is stabilisation through re-vegetation, which will stabilise all substrates and in turn remove the need for further silt control measures. This site is already vegetated in some areas. Re-wetted peat also aids the primary objective of stabilizing peat, as when peat is re-wetted it is not vulnerable to wind erosion. Re-wetted peat and the development of wet peatland habitats can also act as sinks for silt and mobile peat, and increases additional retention time for solids, and the peatland vegetation can quickly stabilise this material within blocked drains on site (by acting like constructed wetlands).

Water quality of water discharges from restored peatlands normally improves as a result of bog restoration measures and the restoration of natural peatland processes (Bonn *et al*., 20017). Bog restoration is also expected to improve water attenuation of the site as the drains are blocked, slowing water movement and water release from the site. Restored peatlands help slow the release of water and aid the natural regulation of floods downstream (Minayeva *et al*., 2017). The draft National River Basin Management Plan (NRBMP) 2022-2027 (DHPCLG, 2022) is the key national plan for Ireland to achieve the objectives of the Water Framework Directive (WFD). The NRBMP outlines how key actions such as the Bord na Móna peatland rehabilitation is expected to have a positive impact on water quality and help the NRBMP deliver its objectives in relation to the WFD.

Water will still discharge from designated emission points when rehabilitation at Ballybeg/Lanespark/Derryvella Bog has been completed. This discharge will have improving water quality and there will be increased wetland attenuation, meaning slower release of water. This is expected to have a positive impact on status of downstream water bodies. While water quality improvements assist in meeting water frameworks directive ambitions and targets, they can also improve drinking water sources in applicable catchments with drained peatlands and the potential for associated reduction in treatment requirements at drinking water treatment facilities.

Decommissioning and Rehabilitation Programme Water Quality Monitoring.

The licence obligation of quarterly sampling regime on a selected number of ponds to be sampled over a 3-year cycle would not be sufficient to be able to appropriately track the changing water chemistry that will occur as part of this enhanced rehabilitation programme, so this sampling regime will occur monthly.

To assist in monitoring surface water quality from this bog, it was agreed to increase the existing licence monitoring requirements of the IPC Licence, to sampling for the same parameters every month.

This new sampling programme commenced in July 2023 and is enabling a baseline to be established, with sampling to progress during the scheduled works, and for a period of up to 2 years post rehabilitation. Depending on the period required to confirm that the main two parameters, suspended solids, and ammonia as remaining compliant with the licence emission and trigger limit values and there is an improving trajectory in these two parameters i.e., reduction in concentration, the monitoring programme and intensity will be periodically reviewed and amended.

Initial quarterly results are included in Appendix XIII. These results cover the period from July 2023 to December 2024 and are from some of the surface water outlets from the sections of bog to be rehabilitated in 2025. Peat extraction ceased in these bogs in 2017 and as expected some of the key water quality parameters that can impact water quality from peat extraction activities, remain on a relatively static trajectory, with suspended solids indicating a level trend from all outlets during the period, all well below any limits of concern. During this same period there was a slight downward trend in Ammonia for emission points, with all other parameters fluctuating slightly, most likely influenced by normal weather patterns, including rainfall.

Monthly Ammonia concentrations from emission points from July 2023 to December 2024 averaged 0.4550mg/l and ranged from 0.006 to 2.59mg/l. Results for Suspended Solids for the same period ranged from <2 to 18 mg/l and averaged 6.31mg/l.

In the preparation of this monitoring programme, Bord na Mona have been providing the Local Authority Water Programme (LAWPRO) with details of the surface water emissions points associated with this bog. LAWPRO have in turn provided details of their monitoring programme and these are included in the Water Quality Map.

This is necessary to ensure that there is alignment with the WFD monitoring programme and that where possible, the monitoring programme will enable any improvements in water quality or establishing trends to be quantified against any available WFD monitoring data. It will also enable the periodic sharing of data which will inform the monitoring reports, success criteria and enable LAWPRO under the Water Framework Directive to track any changes in pressures and be aware of changes in water chemistry.

Monitoring results will be maintained, trended every six months and reported on each year and as required, as part of the requirement to report on Condition 10.1 of the IPC Licence on Bog Rehabilitation in the Annual Environmental Report, and will be provided to LAWPRO and the EPA as required to inform progress and national monitoring requirements under the WFD.

These results will also be available in April each year as a requirement of the Annual Environmental Report at www.epa.ie.

The parameters to include as per condition 6.2 of the IPC Licence include monthly monitoring for pH, Suspended Solids, Total Solids, Total Phosphorus, Total Ammonia, Colour & COD. In addition, DOC has been included as a parameter to try and identify any changes in carbon in the surface water, and where required by LAWPRO, to assist in investigating other changes in water chemistry, the series of parameters can be reviewed and amended.

Success criteria:

The key water quality success criteria associated with this enhanced rehabilitation are as follows:

- That there is a stabilizing/improving concentration of suspended solids and ammonia in discharges from Bord na Móna sites, associated with the measures undertaken to stabilize the peat surface by the blocking of the internal drainage system and the maximized rewetting of the peat surface.
- Receiving water bodies have been classified under the River Basin Management Plan and this classification includes waters that are At Risk from peatlands and peat extraction. The success criteria will be that any At Risk classification will see improvements in the associated pressures from this peatland or if remaining At Risk, that there is an improving trajectory in the pressure from this peatland.

As the monthly monitoring program at Ballybeg/Lanespark/Derryvella Bog continues in 2025 and during the rehabilitation works planned for 2025 further trending will be produced to verify any ongoing trends.

3.7 Fugitive Emissions to air

None.

The bog is no longer in industrial peat production. Rehabilitation of the cutaway peatland will seek to re-wet the dry peat where possible and re-vegetate all areas (whether wet or dry). Collectively, ceasing industrial peat production, re-wetting and re-vegetating will minimise any risk of emission to air from dust.

3.8 Carbon emissions

Irish peatlands are a huge carbon store, containing more than 75% of the national soil organic carbon (Renou-Wilson *et al.* 2012). Peatland drainage and extraction transforms a natural peatland which acts as a modest carbon sink (taking in 0.1 to 1.1 t of carbon as CO2-C /ha/yr) into a cutaway ecosystem which is a large source of carbon dioxide (releasing 1.3 to 2.2 t of carbon as CO2-C /ha/yr) based on Tier 1 Emission factors (Evans *et al*. 2017). Renou-Wilson *et al.* (2018) reported losses of between 0.81 – 1.51 CO2-C /ha/yr from drained peatlands located in Ireland.

Re-wetting of dry peatlands will increase methane emissions (Gunther *et al*. 2020) as a consequence of the anoxic conditions within the peat body that provide a suitable environment for the microbial breakdown of plant litter and root exudates. Tanneberger *et al.* (2021) describes how peatland management has to choose between CO2 emissions from drained peatlands or increased methane (CH4) emissions from rewetted industrial peatlands. However, when radiative effects and atmospheric lifetimes of both GHG gases are considered and modelled, postponing rewetting increases the long-term warming effect of continued CO2 emissions (Gunther *et al*. 2020). This means the increase in methane due to rewetting of dry peatlands is still negated by the CO2 emissions reductions. Further, Wilson *et al.* (2022) confirmed the benefit of rapid rewetting to achieve strong carbon reductions and potentially altering the warming dynamics from warming to cooling depending upon the climate scenario.

It is expected that Ballybeg/Lanespark/Derryvella Bog will become a reduced carbon source following rehabilitation. The potential of any cutaway site to develop as a carbon sink in the longer-term depends on the success of the rehabilitation measures, the extent of development of *Sphagnum*-rich or other peat-forming habitats, the balance of carbon fluxes from different cutaway habitats and future climatic conditions. Much of this bog is expected to develop wetland habitats on shallow peat with open water, reed swamp and fen habitats

with alkaline emission factors and a smaller proportion will develop as regenerating wet deep peat vegetation on deep peat areas. Birch woodland and heather dominated vegetation is expected to develop on the drier mounds and along peripheral headlands.

3.9 Current ecological rating

(Following NRA (2009) Evaluation Criteria)

The majority of the former production areas at Ballybeg Bog and Derryvella Bog are deemed to be of **Local Importance (lower value)** due to the dominance of bare peat. Pioneer and semi-natural habitats such as raised bog, scrub and pioneer fen are rated higher and are deemed to be of **Local Importance (higher value)**.

4. CONSULTATION

4.1 Consultation to date

Consultation seeks to engage an audience of relevant stakeholders at both a national and local level. National stakeholders have been identified from varied bog restoration and rehabilitation efforts undertaken by Bord na Móna over the past 40 years, with particular emphasis on engagement with stakeholders during their Biodiversity Action Plan programme, since 2010. National Stakeholders includes relevant government departments and agencies, relevant semi-state bodies, NGOs and other environmentally-focused groups with a national remit.

There has been ongoing consultation about the proposed wind farm development, rehabilitation, biodiversity and other general issues at Ballybeg/Lanespark/Derryvella Bog in relation to the proposed Littleton Wind Farm (Bord na Móna Wind Farm | Littleton Wind Farm). Specific consultation relating to the wind farm development is not listed here, although there has been detailed consultation with stakeholders in relation to these issues and overlap with rehabilitation and biodiversity.

There has been ongoing consultation about rehabilitation, biodiversity and other general issues over the years about Littleton bog group, including Ballybeg/Lanespark/Derryvella Bog, with various stakeholders in relation to:

- General consultation with range of stakeholders at annual Bord na Móna Biodiversity Action Plan review days 2010-2018.
- Open consultation with range of stakeholders at annual BAP review days 2010-2018.
- Consultation with the North Tipperary Heritage Forum during the period 2010-2015.
- General consultation at a local community event in Littleton in Dec 2016.
- General consultation with Tipperary County Council and other stakeholders in relation to the Littleton Labyrinth Project Feasibility Study.
- Ongoing engagement with Lisheen Mine.
- Archaeological Liaison Committee (National Museum of Ireland & Dept of Culture Heritage and the Gaeltacht).
- Midlands & East Regional WFD Operational Committee (River Basin Management Plans).
- Ongoing consultation with Coillte – proposed Coillte/BnM Midlands Native Woodland Project.
- Consultation with Tipperary Climate Action Officer and Biodiversity Officer during Baunmore site visit (April 2024).
- Ongoing consultation with Slieve Ardagh Rural Development Group.
- General consultation with Tipperary County Council and other stakeholders in relation to the Midlands Network Trail.
- Ongoing engagement with Slieve Ardagh Rural Recreation regarding Loch Doire Bhile.

There was specific consultation and engagement about rehabilitation of the Littleton Bog group, including Ballybeg/Lanespark/Derryvella Bog, with various stakeholders during the period 2018-2021:

- Lisheen Mine.
- Irish Peatland Conservation Council.
- NPWS (site visits).
- Tipperary County Council (2018).
- Tipperary Heritage Forum.
- Kilkenny County Council.

- Consultation with members of the local community.
- Consultation with local community groups.
- Slieve Ardagh Rural Development.
- National University of Galway.
- Limerick Institute of Technology.
- Irish Wildlife Trust.
- Environmental Protection Agency.
- Birdwatch Ireland.
- Birdwatch Ireland Tipperary Branch.
- Forest Service.
- Coillte.

To inform the original Plan (Phase 1 Rehabilitation), both national and local stakeholders, including neighbours whose land adjoins Ballybeg/Lanespark/Derryvella Bog and local representatives of national bodies (such as Regional National Parks and Wildlife Service staff) and relevant offices in County Councils (such as the Heritage or Environmental Offices) were contacted. Any identified local interest groups were informed of the opportunity to engage with this rehabilitation plan and were invited to submit their comments or observations in relation to the proposed rehabilitation (Phase 1) at Ballybeg/Lanespark/Derryvella Bog or the programme in general (see Appendix XI).

All correspondence was acknowledged and reviewed and evaluated against the rehabilitation measures proposed.

4.2 Issues raised by Consultees

Some issues were raised by consultees during the consultation process for both the current and previous drafts of the rehabilitation plan for Ballybeg/Lanespark/Derryvella Bog and these are summarised below. A number of general submissions in respect of previous PCAS consultation are also referenced where applicable.

4.2.1 Consultation

During the initial commencement of PCAS, a number of consultees including: the Irish Farmers Association (IFA), the Irish Creamery Milk Suppliers Association (ICMSA) and Trinity College Dublin raised concerns regarding the duration and scope of consultation period. Stakeholders suggested that the consultation period should be extended to allow all potential stakeholders to make submissions where required.

4.2.2 Assessments of rehabilitation

Queries on pre-rehabilitation assessments were raised by NPWS and the National Museum of Ireland relating to the finalisation of several bog rehab plans in 2021 in relation to Appropriate Assessment, Environmental Impact Assessment and Strategic Environmental Assessment.

4.2.3 Restoration scope

NPWS welcomed the restoration and rehabilitation measures proposed for the Littleton Bog Group in 2018, particularly where it could result in the development of Annex I active raised bog or would significantly aid Ireland in meeting its commitments under the EU Habitats Directive.

NPWS (pre-PCAS, 2018) suggested that BnM consider more fully the potential for forward-planning during production phases of its operation so that the topography of the commercial fields could be engineered so as to best facilitate rewetting of the sites. Consideration should be given to reprofiling works within the Littleton Bog Group.

NPWS (pre-PCAS, 2018) highlighted the potential for more intensive rehabilitation during initial consultation and the potential for larger project opportunities focusing on GHG emission reduction creation of peat-forming habitats, biodiversity enhancement, other ecosystem services enhancement/restoration. The use of bunding at several sites was discussed.

Birdwatch Ireland (pre-PCAS, 2018) welcomed the proposed restoration/rehabilitation of the Littleton Bog Group and highlighted need to take consideration of bird nesting season when carrying out works, particularly for Lapwing and Curlew.

Tipperary County Council (pre-PCAS, 2018) also suggested that peatland water levels and flow regimes should be restored to as close to the natural reference conditions as possible.

The Irish Peatland Conservation Council (pre-PCAS, 2018) expressed concerns that *Sphagnum* inoculation was not part of the rehabilitation/restoration measures being applied at Ballysorrel Bog.

IPCC (pre-PCAS, 2018) requested clarity around the scope of sites included in the Littleton Rehabilitation Programme and recommended that priority be given to raised bog restoration, where possible. IPCC were concerned about the fact that milled peat extraction was projected to continue at Killeen Bog (in 2018, subsequently ceased in 2021). The IPCC were also unclear about the aims and objectives for sites with biodiversity interest. The IPCC recommended the use of contouring as a methodology to improve re-wetting outcomes.

Restoration/rehabilitation of marginal habitats was raised by the IPCC and Butterfly Conservation Ireland (BCI) relating to the finalisation of several bog rehab plans in 2021 and 2022 as worthy of consideration within the rehabilitation measures to support carbon sequestration and biodiversity objectives.

4.2.4 Monitoring

Further details on monitoring of ecological metrics, and how and where reporting on this monitoring would take place, was raised by the IPCC, University College Dublin and Trinity College researchers in their respective submissions relating to the finalisation of several bog rehab plans in 2021. Uisce Éireann (formerly Irish Water) reiterated the requirement of a strong monitoring program with respect to water quality during and post rehabilitation.

The IPCC (pre-PCAS, 2018) highlighted that monitoring of changes to water-levels as a result of rehabilitation could be improved using piezometers and queries the frequency of ecotope mapping.

NPWS (pre-PCAS, 2018) recommended that ongoing research into the interaction between rehabilitation measures and carbon emissions is prioritized so as to better inform future rehabilitation plans.

NPWS (pre-PCAS, 2018) had some difficulty interpreting maps due to their complexity and the size of the legend.

4.2.5 Flooding, drainage or other impacts on adjacent land.

The Irish Farmers Association (IFA), The Department of Agriculture Food and the Marine, individual local residents and ICMSA queried likely impacts relating to the finalisation of several bog rehabilitation plans in 2021 and 2022. They raised concerns based on the proposed re-wetting in relation to flooding on adjoining lands and, specifically,

with regards to the maintenance of drains. In previous submissions, the IFA also raised the issue of Health and Safety in relation to raising water levels as well as possible impacts on land and property prices.

Several individuals who owed adjacent land to bogs within the Littleton Bog Group expressed concerns about the potential impacts of re-wetting to their land (pre-PCAS, 2018).

4.2.6 Amenity

Several individuals and organisations expressed interest in the development of amenity and greenways through the Littleton Bog Group (pre-PCAS, 2018).

IPCC highlighted a bog area at the north of Littleton Bog that had been used for educational purposes in the past.

Several consultees including various politicians have requested information regarding the development of amenities on BnM bogs since the beginning of consultation by BnM relating to the Peatlands Climate Action Scheme.

4.2.7 Water Quality

A number of consultees have contacted BnM to express their concerns regarding the potential impact of PCAS related activities on water quality within waterbodies that are hydrologically connected to BnM bogs. *Uisce Eireann* have expressed their support for PCAS in general and have also requested information regarding the potential hydrological impacts of PCAS.

Tipperary County Council (Pre-PCAS, 2018) highlighted the need to avoid any unnecessary deterioration in the quality and quantity of ground and surface waters.

4.2.8 Future management

NPWS (pre-PCAS, 2018) highlighted the potential for future nature conservation designations for several bogs in the Littleton Bog Group (Ballysorrell and Knockahaw). Queries about future nature conservation designations were also submitted by IPCC, discussed with IWT and with Birdwatch Ireland Tipperary Branch.

Birdwatch Ireland, Tipperary Branch (Pre-PCAS, 2018) suggested further management of sites for to improve habitat for breeding wetland birds.

The Irish Farmers Association (IFA) (2021-2022) expressed concerns regarding the future ownership of the BnM bogs subject to rehabilitation, in submissions made on earlier PCAS plans. They expressed a desire for contingency planning for potential future ownership of designated bogs so as to ensure no negative impacts arise on adjacent properties from any new ownership.

4.2.9 Other issues

Other issues (raised by IPCC) during the finalisation of several bog rehab plans in 2021, 2022 and in 2023 included after use of the bog and turf cutting on the margins of the bog (outside of the area owned by BnM). The IPCC have also requested information regarding the resilience of rehabilitation measures to climate change induced climatic alterations.

Archaeological end of life survey of all the bogs were requested by National Museum of Ireland and National Monuments Unit during the early stages of PCAS. The National Museum of Ireland also requested that due diligence be taken during works to protect any archaeologically significant findings or areas. They also reiterated the importance of peatlands for the preservation of archaeology and requested they be consulted as part of any EIA undertaken.

A local landowner (pre-PCAS, 2017) with a holding adjacent to a Littleton Bog made some enquires about the return of land originally CPOed by Bord na Móna.

University of Galway (pre-PCAS 2017) were interested in developing an INTEREG Project on peatland sites and were discussing the inclusion of several BnM sites in this proposed project. (This subsequently became the CarePeat INTEREG Project and Cavemount Bog Co. Offaly was included in the project, which is now completed).

Limerick Institute of Technology (LIT) were interested in developing a project on peatlands and paludiculture and were discussing the potential availability of land within the Littleton Bog Group. This proposal ultimately did not develop into a project on BnM lands.

An individual highlighted the presence of several rare Bee Orchid varieties along the BnM railway at Longfordpass.

For a complete summary of submissions received and replies, see Appendix XI.

4.3 Bord na Móna response to issues raised during consultation

4.3.1 Consultation

BnM carried out extensive consultation and engagement with all interested parties during 2018-2021. BnM are carrying out additional consultation as part of the process of updating the Phase 2 rehabilitation plan for Ballybeg/Lanespark/Derryvella. This is ongoing with a dedicated Community Liaison Officer communicating with affected and interested parties. A website has been developed to make information available. This will be continually updated. Some PCAS Bogs have been used as demonstration sites so that interested stakeholders can come to organised visits and observe the measures on the ground.

4.3.2 Assessments of rehabilitation

Appropriate Assessment screening will be undertaken on all the bogs as part of PCAS. This will be undertaken by external consultants for Ballybeg/Lanespark/Derryvella Bog.

Implementation of rehabilitation measures including machine access across the bog will be carried out in conjunction with BnM Ecology Department. Seasonal and other restrictions will be put in place to mitigate against any impacts on biodiversity.

An Archaeological Impact Assessment (AIA) has been undertaken on Ballybeg/Lanespark/Derryvella Bog (Appendix XII). The aim for known archaeology on these bogs is to accomplish preservation in situ and we are taking steps to identify and avoid all known archaeology. BnM aim to achieve this through including all known archaeology in the planning process of rehabilitation works and implementing and exclusion or buffer zone around these features. These measures should sufficiently protect any archaeology in these areas, during any ground works in the final plan. It is anticipated that any archaeology will benefit from the ultimate remit of the rehabilitation, in that water tables will be raised thereby preserving in-situ. There is also an identified procedure for managing reports of stray finds that may arise during rehabilitation. There is continuing consultation and engagement with the National Museum of Ireland and the National Monuments Unit.

4.3.3 Restoration scope

Consultees during the Phase 1 rehabilitation (2018-2021) including NPWS and the IPCC suggested the use of more intensive rehabilitation measures such as contouring and bunding. These ultimately were beyond the scope of the rehabilitation budget allocated to these sites by BnM at the time (2018-2021). The PCAS is an opportunity to

carry out some of these suggested measures (e.g. bunding, recontouring) through the Littleton Bog Group as part of Phase 2 rehabilitation.

As part of PCAS, all restoration/rehabilitation options have been developed to support climate action and biodiversity objectives. Other issues such as existing amenity, social impacts, industrial history, archaeology were not part of the direct scope of PCAS but were considered when developing the rehabilitation plan. After-use of the bog is outside the scope of PCAS. Rehabilitation will lead to the development of a stable diverse re-wetted cutaway landscape that will have added benefits for amenity in the future but will not rule out other after-uses such as amenity.

Sphagnum inoculation is one measure that was initially suggested by IPCC (in 2018) for use at Ballysorrel to support raised bog restoration. This measure was ruled out initially by Bord na Móna due to its relatively high cost, lack of resources and other logistical issues such as lack of suitable local *Sphagnum* donor sites. Since then, BnM has developed the Peatlands and People LIFE Project (Home | Ireland's Climate Action Catalyst | Peatlands & People) and one of the main objectives of this project on BnM land is to inoculate approx. 800 ha of suitable residual deep peat with *Sphagnum* plugs to speed up the trajectory of development of *Sphagnum*-rich embryonic bog vegetation. So far, 250 ha has been inoculated across midlands bogs. The future selection of sites within the Littleton Bog Group for *Sphagnum* inoculation will be dependent on availability of resources for planting. Site visits to Ballysorrell (2021-2023) has also shown that *Sphagnum* present on site is recolonising and spreading quickly in response to the re-wetting in 2018.

4.3.4 Monitoring

As part of the PCAS, a monitoring and verification plan has been developed to support climate action and biodiversity objectives. This will include stratified monitoring of bog condition, habitats and biodiversity at several different scales. It is proposed to monitor the improvement of some biodiversity ecosystem services. The appearance of key species such as *Sphagnum* moss will be monitored during walk-over surveys and general monitoring visits. It is not proposed to carry out any additional monitoring of biodiversity ecosystem services at this site. Biodiversity monitoring for PCAS planned for a stratified approach with different targeted monitoring at different sites based on the site characteristics.

It is the expectation of BnM that rehabilitation measures should positively impact the water quality in receiving water bodies through enhancing the water attenuation across rehabilitated sites. The robust water monitoring programme implemented as part of PCAS will be used to assess water quality leaving rehabilitated sites at designated points.

An overview of the Water Quality Monitoring plan was provided to Uisce Eireann, and confirmation given that water flow and dissolved organic carbon (DOC) is being monitored.

BnM also advised that decommissioning of silt ponds will only be carried out when the EPA are satisfied that adequate stabilisation of the bog has been achieved and silt ponds are no longer required. This decommissioning will be determined by water quality results and EPA approval.

It was also confirmed that rehabilitation of bogs in the same catchment is likely to result in beneficial impacts on water quality in the catchment. This will be captured by the results from EPA monitoring stations in the vicinity of the bogs.

4.3.5 Flooding, drainage or other impacts on adjacent land.

During Phase 1 of the rehabilitation across Littleton Bogs, individual landowners who expressed concerns were met on site. No boundary drains were blocked and, in several instances, (Baunmore and Ballybeg) some internal drainage was modified to allow water draining from external lands to flow through these sites unhindered.

It is the intention of BnM that the re-wetting of the bogs will be carried out in such a manner that does not impact on third party lands. Where it is deemed that blocking of a shared drain would cause any adjoining lands to be adversely affected, this will be avoided, and alterations made to the rehabilitation plan. In general, drains around the margins of the bog will not be blocked.

External consultants have been appointed to carry a hydrological assessment to identify any potential impacts to neighbouring lands and to mitigate against any such impacts. There is no potential for direct impacts on arterial drainage downstream.

It is intended that rehabilitation measures will not significantly alter the existing topographical catchments and that the spine of the drainage networks, those which the upstream catchments drain through, will be retained by BnM.

4.3.6 Amenity

Bord na Móna and Tipperary County Council carried out a feasibility study of the potential for amenity development across the Littleton Bog Group called Littleton Labyrinth in 2018-2020. The first phase of this amenity has been completed and a greenway has been constructed at Killeen Bog to Loch Doire Bhile. A further extension (Phase 2) is proposed at Ballybeg and Derryvella Bog. There is potential for future extensions to this greenway network at Derryville Bog in the future. The proposed rehabilitation measures will not constrain any future greenway development.

Creating amenity developments such as walking tracks is not included within the direct scope of PCAS. However, PCAS rehabilitation will enable and support potential amenity future amenity developments.

4.3.7 Water Quality

PCAS rehabilitation is expected to positively impact the water quality of surrounding water bodies through enhancing water attenuation across rehabilitated sites. The robust water quality monitoring programme implemented as part of PCAS will be used to assess the water quality leaving rehabilitated sites at designated points.

4.3.8 Future management

This rehabilitation plan is not intended to plan out future management of these sites. Known or planned after-use (renewable energy, way-leave, Littleton Labyrinth greenway feasibility) has been incorporated, where possible, in the rehabilitation plan. Peatland rehabilitation is not intended to constrain future land-uses, where they are compatible with this environment.

BnM will continue to manage their land bank into the future. As industrial peat production has now ceased on BnM lands and rehabilitation measures carried out, a regular drainage maintenance programme will not be required or carried out as would have been the case in the past. However, if issues arise with the BnM internal drainage system that affects upstream or downstream landowners, then these issues will be addressed by BnM.

BnM considers issues regarding estate security, fire risk, invasive species and water pollution of utmost importance. BnM intends to maintain security and manage fire risk over the entirety of the estate. In this regard,

PCAS activities, should have no detrimental impact on these issues. Regarding water pollution, BnM is regulated by the EPA and as such adheres to the strict water pollution measures laid out by the same.

The formal designation of sites for conservation is a matter for NPWS. BnM are happy to continue engaging on issues of conservation designations as part of the National Peatland Strategy and other initiatives.

4.3.9 Other issues

The National Museum of Ireland (NMI) and the National Monuments Service (NMS) were included in the stakeholder consultation process. Where available at the time of the submission of the rehabilitation packages to NPWS, the Archaeological Impact Assessment (AIA) is included. Where it is still in preparation, it will subsequently be provided. Both bodies acknowledge the AIA is a desk-based process and associated outputs designed to ensure any known archaeology is identified and protected during the implementation process, and the Project Archaeologist's recommendations regarding buffering and ongoing vigilance and reporting of any stray finds to NMI.

It is the intention of BnM to keep secure the estate and ensure that any anti-social behaviour that occurs within the estate is reported and dealt with by the appropriate authorities.

BnM will consider future opportunities for biodiversity enhancement, subject to availability of resources and funding, where possible.

4.3.10 Concluding statement

No specific issues were raised during consultation that required significant changes to the substance of the rehabilitation plan.

The PCAS has the potential to deliver some of the rehabilitation measures initially suggested by stakeholders but not included within Phase 1 rehabilitation.

Marginal drains will not be blocked to avoid impacts on adjacent lands or lands under the ownership of third parties or turf-banks. This does not change the overall rehabilitation goals and outcomes and can be integrated with the other rehabilitation measures to allow cutaway re-wetting.

BnM intend to continue management of this site into the future and issues such as security and trespass will be addressed on an ongoing basis in association with other stakeholders.

BnM intends to maintain a "No Shooting" policy on Ballybeg/Lanespark/Derryvella Bog.

5. REHABILITATION GOALS AND OUTCOMES

The rehabilitation goals and outcomes outline what Bord na Móna want to achieve by implementing the rehabilitation (Phase 1 and Phase 2). These include:

- Meeting conditions of IPC Licence.
- Stabilisation or reduction in water quality parameters of water discharging from the site (e.g. suspended solids).
- Reducing pressure on receiving waterbodies that have been classified as *At Risk* from peatlands and from peat extraction, via stabilization or improving water-quality from this bog, and therefore, reducing pressures.
- Optimising hydrological conditions and trajectories of natural colonisation and pioneer habitat development for **climate action benefits as part of PCAS**.
- Optimising hydrological conditions for the development of reed swamp and fen on shallow more alkaline peat and other subsoils, or *Sphagnum*-rich regenerating wet deep peat vegetation communities on deep residual peat, where present.
- Supporting current and potential future infrastructure, amenity, and other land-uses. Integrating rehabilitation measures with current amenity infrastructure on site. It is not proposed to carry out any rehabilitation actions to change or negatively affect any proposed infrastructure.
- Supporting potential future native woodland development. It is not proposed to carry out any rehabilitation actions to change or negatively affect the proposed Coillte/BnM Midlands Native Woodland Project.
- The main goal and outcome of this updated plan is the successful rehabilitation (environmental stabilisation) of peatlands used for industrial peat production at the bog in a manner that is acceptable to both external stakeholders and to Bord na Móna and which optimise climate action and other ecosystem service benefits.

The rehabilitation goals and outcomes take account of the following issues.

- Bord na Móna have carried out rehabilitation at Ballybeg/Lanespark/Derryvella Bog between 2018-2021 (Phase 1 rehabilitation). Significant drain-blocking and re-wetting was carried out during this phase.
- It will take some time for stable naturally functioning habitats to fully develop at Ballybeg/Lanespark/Derryvella Bog. This will happen over a longer timeframe than the implementation of this rehabilitation plan.
- Re-wetting residual peat will initially maintain and enhance the carbon storage capacity of the bog. There is scientific consensus that restoration of hydrology in damaged bog can improve carbon storage, water storage and attenuation and help support biodiversity both on the site and in the catchment (See Section 3.8). This will reduce carbon emissions from the site from a larger carbon source to a smaller carbon source.
- It is not expected that the cutover bog in the former milled peat production area has the potential to develop active raised bog (ARB) analogous to the priority EU Habitats Directive Annex I habitat within the foreseeable future (c.50 years). Furthermore, the majority of the bog is shallow peat and only a small proportion of the bog has potential to develop *Sphagnum*-rich habitats in this timeframe. Nevertheless, re-wetting across the entire bog, as part of the Scheme, will improve habitat conditions of the whole bog. Other peatland habitats will develop in a wider mosaic that reflects underlying environmental conditions.

- Rehabilitating former industrial peat production bog will also in the longer-term support other ecosystem services such as such the development of new habitat to support biodiversity and local attenuation of water flows from the bog.
- WFD status in receiving water bodies can be affected by peatlands and peat extraction but is also affected by other sources such as agriculture. In addition, receiving water bodies that are assessed as *At Risk* from peatlands and from peat extraction are likely to have several contributary sources of impacts (private peat extraction and Bord na Móna). Reducing pressures due to former peat extraction activities at Ballybeg/Lanespark/Derryvella Bog will contribute to stabilising or improving water quality status of receiving water bodies in general. Ultimately, improving the WFD status of the receiving water body will depend on reducing pressure from a range of different sources, including peatlands in general (private and Bord na Móna).
- Re-wetting in general will benefit the future preservation of most known and unknown archaeological features. An Archaeological Impact Assessment (AIA) is to be carried out under the PCAS scheme.
- Bord na Móna are planning to develop a potential renewable energy project at Lanespark Bog as part of the proposed Littleton Wind Farm, which will overlap Lanespark Bog, Littleton Bog and a small part of Longfordpass (Bord na Móna Wind Farm | Littleton Wind Farm). This renewable energy project is in pre-planning. No Phase 2 rehabilitation is being considered for Lanespark Bog. The proposed phase 2 rehabilitation at Ballybeg and Derryvella Bogs will have no impact on Lanespark Bog.

6. SCOPE OF REHABILITATION

The principal scope of this rehabilitation plan is to rehabilitate the bog. This is defined by:

- The area of Ballybeg and Derryvella Bog within the PCAS Phase 2rehabilitation footprint.
- EPA IPC Licence - Ref. P0-499-01. As part of Condition 10.2 of this license, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area.
- The Scheme is designed to exceed the stabilisation requirements as defined by the IPC Licence. This scheme is designed to enhance the ecosystem services of Ballybeg and Derryvella Bogs, in particular, optimising climate action benefits. The proposed interventions will mean that environmental stabilization is achieved (meaning IPC obligations are met) and, in addition, significant other ecosystem service benefits particularly for climate action will be accrued.
- The local environmental conditions of Ballybeg and Derryvella Bogs mean that a combination of dry cutaway measures, (Fertiliser treatment), targeted drain-blocking, wetland outfall management and deep peat measures are the most suitable rehabilitation approach for shallow peat areas (Phase 2 rehabilitation).
- Bord na Móna have defined the key goal and outcome of rehabilitation at Ballybeg and Derryvella as environmental stabilisation of the site via optimising climate action benefits, where possible. The re-wetting of residual peat in the cutaway will be optimised, setting the site on a trajectory towards the development of wetlands/Reed Swamp and fen on shallow more alkaline peat and other subsoils, and the development of peat-forming communities on areas of residual deep peat, where possible.
- Rehabilitation of Ballybeg and-Derryvella Bogs will support multiple national strategies of climate action, biodiversity action and other key environmental strategies such was the Water Framework Directive.
- The time frame for the delivery of the planned rehabilitation will be undertaken according to available resources and appropriate constraints.

6.1 Key constraints

- **Bog conditions.** Rehabilitation outcomes of sites are constrained by the environmental characteristics of these particular areas. For example, there is potential for raised bog restoration at some sites where there has not been significant industrial peat extraction, and the peat body is largely intact (deep peat sites that are drained). At other bogs, such as Ballybeg/Lanespark/Derryvella, most of the peat mass has been removed, the environmental characteristics of these areas have therefore changed radically (peat depths, hydrology, water chemistry, substrate type, nutrient status, etc.) and there will therefore be different habitat outcomes (regenerating *sphagnum*-rich deep peat vegetation, wetlands, fen, heathland, grassland and Birch woodland).
- The majority of Ballybeg/Lanespark/Derryvella Bog is cutaway with deep peat reserves and some shallow peat. The areas of residual deeper peat are likely to develop more typical bog vegetation communities in time. Wetland habitats (fen, wetland, reed swamp, wet woodland) and dry cutaway habitats (birch woodland, scrub and heath) are the most likely habitats to develop on shallower peat. The bog has a gravity-based regime.
- **Surrounding landscape and neighbours.** Another key constraint is the interaction between the Bord na Móna sites and the surrounding landscape. Care has to be taken that no active rehabilitation management is carried out that could negatively and knowingly impact on surrounding land. This includes any hydrological management on neighbouring farmland, amenity areas, and Lanespark bog, wich is

proposed for inclusion in the Littleton Wind Farm. It is anticipated that the rehabilitation work will not have any flooding impacts on adjacent land.

- **Archaeology**. The discovery of monuments or archaeological objects during peatland rehabilitation may potentially constrain the rehabilitation measures proposed for a particular area. The rehabilitation will optimise hydrological conditions for the protection of exposed archaeological structures, their retention in situ and preservation into the future. Any newly discovered archaeology may require rehabilitation measures to be reviewed and adapted. An Archaeological Impact Assessment (Appendix XII) will be carried out to mitigate against any impact on archaeology that may be found at Ballybeg/Lanespark/Derryvella Bog. Should any previously unknown archaeological material be uncovered during the rehabilitation works, it will be avoided and reported to the Bord na Móna Archaeological Liaison Officer and the National Museum of Ireland.
- **Public Rights of Way**. Where a public right of way or similar burden exists on Bord na Móna property, consideration will be given to ensuring that these remain intact where possible. In some instances, depending upon previous land uses and management, alternative solutions may be required. These will be explored in consultation with local communities and statutory bodies during the consultation work associated with the decommissioning and rehabilitation work described here.
- **Potential land-use.** Bord na Móna and SSE are currently developing a renewable energy project called Littleton Wind Farm, which will overlap Lanespark Bog, Littleton Bog and a small part of Longfordpass (Bord na Móna Wind Farm | Littleton Wind Farm). This project is in pre-planning. No Phase 2 rehabilitation is being considered for Lanespark Bog.
- **Lough Doire Bhile Amenity Development.** Part of the cutaway at Derryvella Bog (western lobe) was developed as Lough Doire Bhile amenity area (between 1999-2001) and is now leased to the Slieve Ardagh Rural Development community group. The Loch Dhoire Bhile loop, a 2.4 km walking trail, has also been developed in this area in recent years. Lough Doire Bhile Wildlife Reserve and amenity area are mapped as constraints on the rehabilitation plan.
- **Littleton Labyrinth** is an amenity project that was developed in partnership with Tipperary County Council. An amenity walking/cycling track has been along the headland/former rail line corridors along the northwestern margins of Derryvella Bog, linking to the Loch Doire Bhile amenity area, as part of the Littleton Labyrinth Greenway in 2024. This amenity track is constrained from the rehabilitation plan. The proposed rehabilitation measures will not overlap with these features and there is no constraint to rehabilitation.
- **Future Amenity development.** Bord na Móna are planning the development of an additional amenity trail, along the eastern and southern headlands of Derryvella Bog and the eastern and northern headlands of Ballybeg, as part of the Midlands Network Trail, designed to link to the Littleton Labyrinth greenway. The amenity development will consist of shared cycle and walkways, associated signage and fencing. The planned amenity route has been mapped as a constraint on rehabilitation maps. This project has been submitted for planning permission (February 2025).
- **Coillte/BnM Midlands Native Woodland Project.** Ballybeg Bog is proposed to be included in the Coillte/BnM Midlands Native Woodland Project (Midlands Native Woodland - Coillte). The main objective of this proposed project is to develop and enhance native woodland in areas of cutaway that would remain naturally dry, developing woodland habitat that would naturally complement wetland and peatland habitats already developing across these sites. This proposed project is currently being considered for consent by the Forest Service. Areas proposed to be included in Native Woodland Project have also been mapped as constrained land in the rehabilitation plan.

- **Bushcraft Site.** The southern extent of Derryvella Bog is proposed to be used as a Bushcraft Site and has been identified as constrained land.
- **Other constraints.** Coillte forestry, local roads, agricultural land and areas under grazing license occur around the margins and have been mapped as constraints on the rehabilitation plan.

6.2 Key Assumptions

- It is assumed that Bord na Móna will have all resources required to deliver this project.
- It is expected that weather conditions will be within normal limits over the rehabilitation plan timeframe. Long periods of wet weather have the capacity to significantly affect ground conditions and constrain drain blocking and other ground activities.

6.3 Key Exclusions

The scope of this rehabilitation plan does not cover:

- The longer-term development of stable naturally functioning habitats at Ballybeg/Lanespark/Derryvella Bog. The plan covers the short-term rehabilitation **actions** and **an additional monitoring and after-care programme** to monitor the rehabilitation and to respond to any needs.
- This plan is not intended to be an after-use or future land-use plan for Ballybeg/Lanespark/Derryvella Bog.
- The longer-term management of this site, potentially as a nature conservation site, or for amenity, or for other uses in the future.

7. CRITERIA FOR SUCCESSFUL REHABILITATION

This section outlines what criteria will be used to indicate successful rehabilitation and what critical success factors are needed to achieve successful rehabilitation. All criteria used to indicate successful rehabilitation will be measured to validate the achievement of the rehabilitation goals and outcomes and validate the completion of the rehabilitation.

The key objective of this enhanced rehabilitation plan is **environmental stabilisation** and the stabilisation of any emissions from the site that related to the former industrial peat extraction activities.

Rehabilitation is generally defined by Bord na Móna as:

- stabilisation of bare peat areas via targeted active management (e.g. drain-blocking/re-wetting) slowing movement of water across the site and encouraging natural colonisation; and
- mitigation of key emissions (e.g. potential run-off of suspended solids).

In addition, Bord na Móna wish to optimise climate action and other ecosystem service benefits via enhanced rehabilitation measures.

7.1 Criteria for successful rehabilitation to meet EPA IPC licence conditions:

- Rewetting of residual peat in the former area of industrial peat production to offset potential silt run off and to encourage and accelerate development of vegetation cover via natural colonisation and reducing the area of bare exposed peat. See Table 7.1 for a summary of the criteria for successful rehabilitation and associated monitoring. The target will be the delivery of measures, and this will be measured by an aerial survey after rehabilitation is completed.
- That there is a stabilizing/improving concentration of suspended solids and ammonia in discharges from Bord na Móna sites, associated with the measures undertaken to stabilize the peat surface by the blocking of the internal drainage system and the maximized rewetting of the peat surface. This will be demonstrated by developing a stable or downward trajectory of water quality indicators (suspended solids and ammonia) towards what would be typical of a re-wetted cutaway bog. This will be measured via water quality monitoring (suspended solids and ammonia) for at least 2 years after the rehabilitation has been completed.
- Receiving water bodies have been classified under the River Basin Management Plan and this classification includes waters that are *At Risk* from peatlands and peat extraction. The success criteria will be that the *At Risk* classification will see improvements in the associated pressures from this peatland or if remaining *At Risk*, that there is an improving trajectory in the pressure from this peatland.

With regard to predicting and estimating likely trends that might materialize or could be considered as a target, monitoring of surface water ammonia emissions from Longfordpass bog in Littleton over 3 years, post cessation of peat extraction with ongoing rehabilitation, were considered. These indicate a downward trend in Ammonia concentrations (Figure 7.1).

Similarly monitoring of surface water ammonia emissions from a Corlea bog in Littleton over the past 4 yrs. post cessation of peat extraction with ongoing rehabilitation, indicate downward trends.

As the monthly monitoring program at Ballybeg/Lanespark/Derryvella Bog continues in 2024/2025 during the rehabilitation measures planned for 2025, and data from the 2024 monitoring program is compiled, further analysis will be completed to identify any ongoing trends.

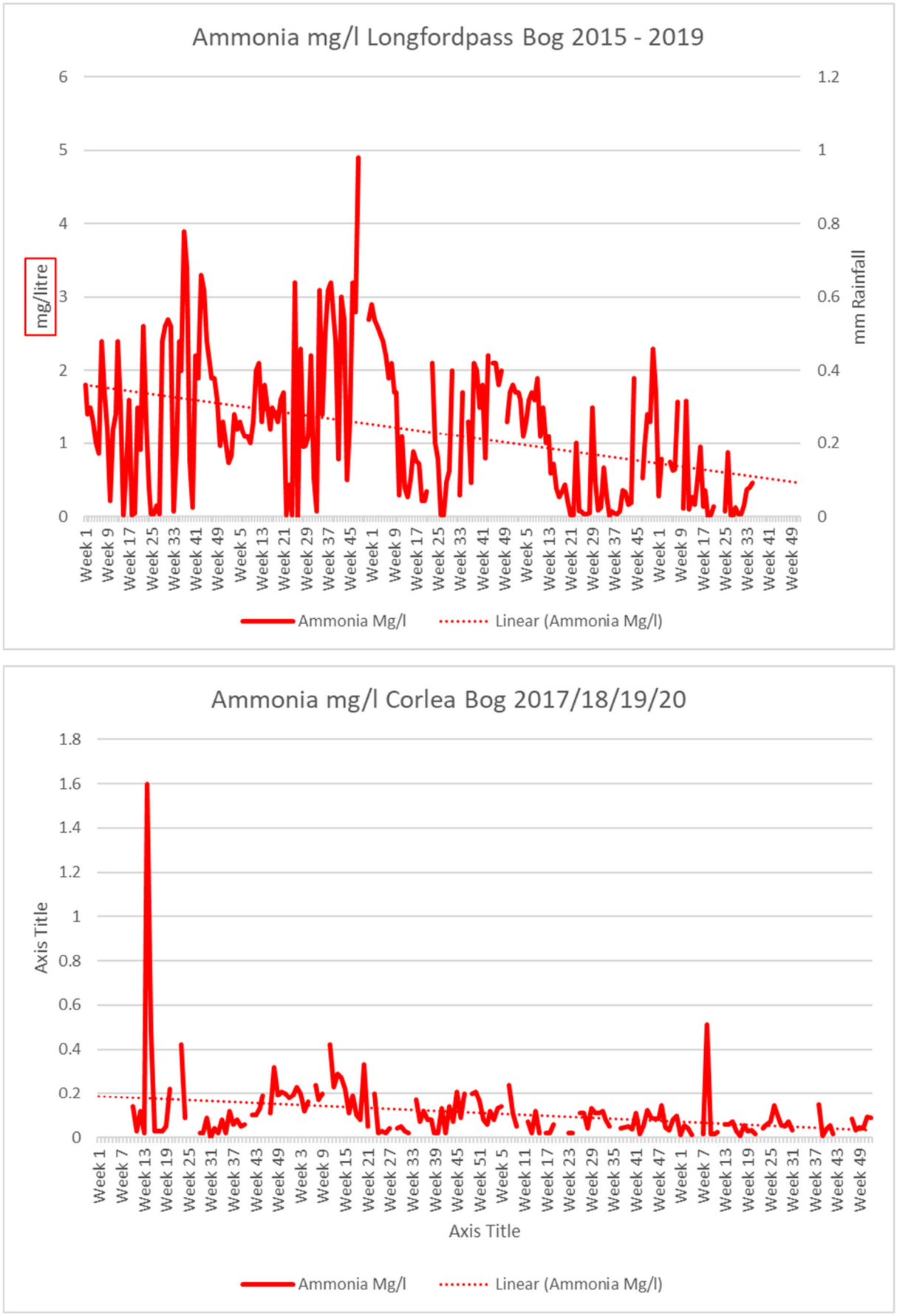


Figure 7.1. Ammonia levels over the period 2015-2019 at Longfordpass and the period 2017-2020 at Corlea.

Additional criteria for successful rehabilitation to optimise climate action and other ecosystem service benefits:

- Optimising the extent of suitable hydrological conditions to optimise climate action and other ecosystem service benefits (optimising and maximising residual peat re-wetting). This will be measured by an aerial survey after rehabilitation has been completed.
- Accelerating the trajectory of the bog towards becoming a reduced carbon source/carbon sink. This will be measured through habitat mapping and the development of cutaway bog condition assessment. This cutaway bog condition assessment will include assessment of environmental and ecological indicators such as vegetation cover, vegetation communities, presence of key species, *Sphagnum* cover, bare peat cover and water levels (similar to ecotope mapping). Baseline monitoring will be carried after rehabilitation is completed (during the scheme). It is proposed that sites can be monitored against this baseline in the future.
- Reduction in carbon emissions. This will be estimated via a combination of habitat condition assessment and application of appropriate carbon emission factors derived from other sites. Baseline monitoring (habitat condition) will be carried after rehabilitation is completed (during the scheme). It is proposed that sites can be monitored against this baseline in the future.
- Setting the site on a trajectory towards establishment of a mosaic of compatible habitats including *Sphagnum*-rich regenerating wet deep peat vegetation communities, wetland, fen, reed swamp, heath, scrub, poor fen, and birch woodland, where conditions are suitable. Some of these habitats have already in part established as pioneer vegetation/wetlands. It will take some time for stable naturally functioning habitats to fully develop at Ballybeg/Lanespark/Derryvella Bog. This will be demonstrated and measured via aerial photography, habitat mapping and cutaway/habitat condition assessment. Baseline monitoring will be carried after rehabilitation is completed (during the scheme). It is proposed that sites can be monitored against this baseline in the future.
- Improvement in biodiversity and ecosystem services. This will be demonstrated by metrics outlined in Section 9.1 that can be used to measure changes in ecosystem services (e.g. water quality parameters, development of pioneer habitats, breeding bird monitoring). This will be measured by collecting a range of scientific data that can then quickly be adapted and into metrics that can be used to measure changes in various ecosystem services. Baseline monitoring will be carried after rehabilitation is completed (during the scheme). It is proposed that sites can be monitored against this baseline in the future.

Table 7-1 Summary of Success criteria, targets, how various success criteria will be measured and expected timeframes.

Criteria type	Criteria	Target	Measured by	Expected Timeframe
IPC validation	Rewetting in the former area of industrial peat production	Delivery of rehabilitation measures Reduction in bare peat.	Aerial photography after rehabilitation has been completed – to demonstrate measures (drain-blocking) Establishment of a baseline for future monitoring of bare peat, vegetation establishment and habitat condition.	2025-2027
IPC validation	Key water quality parameters Ammonia, Phosphorous, Suspended solids, pH and conductivity	Reduction or stabilisation of key water quality parameters associated with this bog	Water quality monitoring for a period after rehabilitation has been completed	2025-2027
IPC validation	Reducing pressure from peat production on the local water body catchment (WFD)	Where this section of the water body, that this bog drains to, has not been identified as under pressure from peat extraction, that the intervening EPA monitoring programme associated with its Programme of Measures for this water body, confirms that its classification remains at not being at risk from peat extraction associated with activities at this bog.	EPA WFD monitoring programme	WFD schedule
Climate action verification	Optimising the extent of suitable hydrological conditions to optimise climate action	Optimal extent of suitable hydrological conditions	Aerial photography and Habitat mapping to map extent of suitable hydrological conditions. Baseline monitoring to be carried out during the scheme when rehabilitation is complete. Sites can be re-monitored in the future and	2025-2027

Criteria type	Criteria	Target	Measured by	Expected Timeframe
			compared against this baseline.	
Climate action verification	Reduction in carbon emissions.	Reduction in carbon emissions	Carbon emissions – estimated using a bog condition assessment and appropriate carbon emission factors.	2025-2027
Climate action verification	Setting the site on a trajectory towards establishment of a mosaic of compatible habitats	Establishment of compatible cutaway habitats	Habitat map, Cutaway bog condition map Baseline monitoring to be carried out during the scheme when rehabilitation is complete. Sites can be re-monitored in the future and compared against this baseline.	2025-2027

Meeting climate action verification criteria and monitoring of these criteria after the scheme has been completed is dependent on support from the Climate Action Fund or other sources of funding. Note that monitoring and verification of the overall scheme will be stratified – not all these criteria will be measured at each individual site. Baseline monitoring to be carried out during the scheme when rehabilitation is complete. Sites can be re-monitored in the future and compared against this baseline.

7.2. Critical success factors needed to achieve successful rehabilitation as outlined in the plan

The achievement of successful rehabilitation as outlined in the plan requires:

- **Funding to pay for resources required to deliver the planned rehabilitation (Bord na Móna and external).** Bord na Móna maintains a provision on its balance sheet to pay for these future costs. Bord na Móna is fully committed to meeting its obligations relating to rehabilitation and decommissioning under the Integrated Pollution Control Licence. It is expected that additional costs of rehabilitation will be supported by Government through the Climate Action Fund and Ireland's National Recovery and Resilience Plan.
- **Bord na Móna to have sufficient resources (staff and training) to deliver the planned rehabilitation with required associated skills and competencies.**
- **Bord na Móna to have sufficient resources (suitable machinery) and staff to maintain this machinery.**
- **Weather conditions to be within normal limits over the rehabilitation plan timeframe.** Long periods of wet weather have the capacity to significantly affect ground conditions and constrain the delivery of rehabilitation. The potential impact of wet weather on ground conditions can be reduced by appropriate planning and management. Bord na Móna have significant experience of managing these issues through 70 years of working in these peatland environments.

- **Rehabilitation measures to be effective.** The rehabilitation measures proposed in this plan are based on 40 years of Bord na Móna experience of peatland management and best practice applied internationally in peatland management. Measures proposed in this plan have already been shown to be affective at other sites. Bord na Móna will apply a flexible and adaptable approach to the more innovative rehabilitation measures proposed in this plan**.** If measures are not initially effective, Bord na Móna will review any requirement for additional practical rehabilitation.
- **Natural colonisation of vegetation to develop semi-natural habitats at a rate within the normal limits.** The development of naturally functioning semi-natural habitats on degraded bog takes time. It may take 30-50 years for active raised bog vegetation to re-develop on suitable cutaway that was previously bare peat. However, Bord na Móna experience has demonstrated the effectiveness of these type of measures for re-wetting bog and creating carbon sinks (Renou-Wilson *et al*. 2018).
- Rehabilitation measures have been designed to accelerate and work with natural colonisation and other natural processes. Bord na Móna experience of rehabilitation has shown that re-wetting improves conditions for natural colonisation and that natural colonisation is accelerated where the environmental conditions are most suitable. Rehabilitation measures have been designed to modify the conditions of areas within sites where conditions are less suitable for natural colonisation (modifying hydrology, topography, nutrient status or availability of potential seed sources).
- **Monitoring to be robust and effective.** Rehabilitation Monitoring will be established to validate the success of rehabilitation as required by Condition 10 of the IPC Licence and to verify the benefits of the proposed measures to optimise climate action. This will focus on a collecting a range of scientific data that can then quickly be adapted and into metrics that can be used to measure changes in various ecosystem services.

8. REHABILITATION ACTIONS AND TIME FRAME

Peatland rehabilitation requires detailed planning and the use of data from desktop surveys and field surveys. This data in association with topographical and hydrological modelling will be important in planning the future peatland landscapes and planning the use of the most appropriate rehabilitation methodologies to maximise climate action benefits. Hydrological modelling indicates those areas that are likely to re-wet when drains are blocked, based on the current topography, and areas where water levels may have to be modified, where needed. Enhanced rehabilitation measures will look to optimise hydrological conditions for re-wetting peat in other areas. This planning is also essential for matching the most sustainable rehabilitation methodology to the most suitable cutaway environment to maximise the benefits of the resource outlay (maximising cost/benefit).

A number of illustrative figures have been produced to inform Rehab Planning and Design, including Aerial Photography, Peat Depths, LiDAR Surface Maps, and Depression Analysis modelling; these are included in the accompanying Mapbook as the drawings referenced below:

BNM-DR-26-07-RP-22: Aerial Imagery 2021

BNM-DR-26-07-RP-04: Peat Depths

BNM-DR-26-07-RP-03: LiDAR Map

BNM-DR-26-07-RP-09: Depression Analysis

The rehabilitation actions themselves will be a combination of PCAS measures to re-wet peat. The distribution of these measures is provisionally outlined in drawing titled *BNM-DR-26-07-RP-05: Enhanced Rehabilitation Measures* in the accompanying Mapbook (note that the actual distribution of these measures may be subject to change in response to stakeholder consultation and refinement of the enhanced rehabilitation measures.)

Drain-blocking was already carried out as part of Phase 1 rehabilitation.

Proposed Phase 2 rehabilitation measures (Table 8.1) for Ballybeg/Lanespark/Derryvella Bog will include:

- Deep Peat measures including intensive drain blocking (max 7/100 m), field re-profiling, creation of shallow depressions on elevated deep peat and management of water levels with overflow pipes and blocking of outfalls and managing overflows.
- Wetland measures will be used across the former production area of Derryvella and the central section of Ballybeg that have been subject to phase 1 rehabilitation. This has increased the height of the water table and several areas of deep, enclosed basins with ponded water have formed. Some additional berms are proposed in these areas. Measures will also include managing outfalls, managing water levels with overflow pipes and targeted blocking of outfalls within the bogs.
- Targeted drain blocking (AW2 measures) is proposed in cutover that has now developed woodland and scrub around the margins of the former production area. This will optimise hydrological conditions/rewet the residual peat.
- Targeted fertiliser application to accelerate vegetation establishment on areas of bare peat on headlands and high fields, and within certain areas of dry cutaway. Areas where vegetation has established do not need fertiliser application.
- Initial hydrological modelling indicates low lying parts of the site will develop a mosaic of wetland habitats with the potential for some deeper water. Hydrological management will look to optimise summer water levels to maximise the development of wetland vegetation (by looking to set water depths at < 0.5 m, where possible. Water-levels will be adjusted at outfalls and by adjusting piped drainage.

Table 8.1: Phase 2 rehabilitation measures at Ballybeg/Lanespark/Derryvella Bog.

Type*	Rehab Code	Phase 2 Rehabilitation Measures	Extent (Ha)
Dry Cutaway	DCT1	Blocking outfalls and managing water levels with overflow pipes.	2.3
	DCT2	Regular drain blocking (3/100m), modifying outfalls and managing water levels with overflow pipes and targeted fertiliser treatment.	3.6
Wetland	WLT2	Turn off or reduce pumping to re-wet cutaway, blocking outfalls and managing water levels with overflow pipes, targeted blocking of outfalls within a site.	63.2
	WLT4	More intensive drain blocking (max 7/100 m), modifying outfalls and managing overflows, transplanting Reeds and other rhizomes.	2.5
Deep Peat	DPT2	More intensive drain blocking (max 7/100 m) and modifying outfalls and managing overflows.	1.0
	DPT7	More intensive drain blocking (max 7/100 m), + field reprofiling, creation of shallow depressions on elevated deep peat + blocking outfalls and managing overflows.	12.8
Marginal land	MLT1	No work required.	15.5
Additional Work	AW2	Targeted Drain Blocking.	24.7
Silt ponds	Silt pond	Silt ponds.	0.5
Constraint	Constraint	Other Constraints (proposed Littleton Wind Farm, Amenity trails, Lough Doire Bhile, Bushcraft site, Coillte/BnM Midlands Native Woodland Project, Littleton Labyrinth).	348.2
Total			474.3

* The types of rehab and areas of rehab may change in response to stakeholder consultation and refinement of the enhanced rehabilitation measures.

8.1 Completed and ongoing

- Previous rehabilitation was carried out in Ballybeg, Lanespark and Derryvella in 2018-2021 (Phase 1 rehabilitation), see Figure *BNM-DR-26-07-30: Previous Rehabilitation* in the accompanying mapbook. Measures included wide-spread drain-blocking, berms, and hydrological management. A pump in Lanespark Bog was decommissioned. There was some fertiliser treatment in Derryvella Bog.
- A significant part of the site has already re-vegetated, with significant cover of pioneer vegetation developing a mosaic of typical cutaway peatland and wetland habitats. The 2000 aerial photo shows that this side of the site was in peat extraction, with some emerging gravel mounds and ridges. By 2006 some areas were cutaway and peat extraction had stopped on a phased basis. Now there is a mosaic of pioneer habitats and the area has also been re-wetted, with wetlands developing in basins.

- Natural re-colonisation of the cutaway so far has been effective. Bare peat areas within the cutaway are reducing as vegetation develops and consolidates. Areas of bare peat treated with fertiliser in Derryvella have also revegetated quite well.

8.2 Short-term planning actions (0-1 years)

- Seek formal approval of the enhanced plan, noting the alternative standard plan should funding from the Scheme not materialise from the EPA.
- Agree an *ex ante* budget of eligible costs (based on the approved enhanced plan) with the Scheme regulator.
- Develop a detailed site plan with engineering drawings outlining how the various rehabilitation methodologies will be applied to Ballybeg/Lanespark/Derryvella Bog. This will take account of peat depths, topography, drainage, and hydrological modelling (see map for an indicative view of the application of different rehabilitation methodologies).
- A drainage management assessment of the proposed enhanced rehabilitation measures will be carried out and any issues identified resolved and the rehabilitation plan adapted.
- A review of known archaeology and an archaeological impact appraisal of the proposed rehabilitation will be carried out. The results of this assessment will be incorporated into the rehabilitation plan to minimise known archaeological disturbance, where possible.
- A review of issues that may constrain rehabilitation such as known rights of way and existing land agreements is to be carried out.
- An ecological appraisal of the potential impacts of the planned rehabilitation on the presence of sensitive ground-nesting bird breeding species (e.g. breeding waders) is to be carried out. The scheduling of rehabilitation operations will be adapted, where required.
- Ensure all activities comply with the environmental protection requirements of the IPC Licence.
- Carry out Appropriate Assessment of the Rehabilitation Plan.
- Track implementation and enforcement of the relevant IPC Licence conditions, the mitigation measures (AA) and other environmental control measures during the implementation of the rehabilitation plan.

8.3 Short-term practical actions (0-2 years)

- Carry out proposed measures as per the Phase 2 rehabilitation. This will include targeted drain-blocking, along with fertiliser application targeting bare peat areas of headlands, high fields and other areas (where required) and hydrological management. All rehabilitation measures will be carried out with regard to best practice environmental control measures (Appendix IV).
- Monitor the success of rehabilitation measures.
- Carry out the proposed monitoring, as outlined.
- Silt ponds will be monitored during this period and there will be continued maintenance and cleaning to prevent potential run-off of suspended solids from the site during the rehabilitation phase.
- Submit an ex-post report to the Scheme regulator to verify the eligible measures to be carried out in year 1 of the Scheme, and an ex-ante estimate for year 2 of the Scheme; and so on for each year of the Scheme.

8.4 Long-term (>3 years)

- Evaluate success of short-term rehabilitation measures outlined above and remediate where necessary.
- Delivery of a monitoring, aftercare and maintenance programme (See section 10.2 below).
- Decommissioning of silt-ponds will be assessed and carried out, where required.
- Reporting to the EPA will continue until the IPC Licence is surrendered.

8.5 Timeframe

- **2025**: Short-term planning actions.
- **2025-2026**: Short-term delivery actions.
- **2026**: Long term delivery actions. Evaluate success of short-term rehabilitation measures outlined above and remediate where necessary.
- **2028**: Decommission silt-ponds, if necessary.

8.6 Budget and costing

Bord na Móna (BnM) appreciates the Minister's intention to support Bord na Móna in developing a package of measures, 'the Scheme', for enhanced decommissioning, rehabilitation and restoration of cutaway peatlands referred to as, the Peatlands Climate Action Scheme'. *However, only the additional costs associated with the additional and enhanced rehabilitation, i.e., measures which go beyond the existing standard mandatory decommissioning and rehabilitation requirements arising from Condition 10 will be eligible for support.*

The enhanced decommissioning, rehabilitation and restoration of the peatlands funded by the Scheme will deliver benefits across climate action (GHG mitigation through reduced carbon emissions and acceleration towards carbon sequestration), enrich the State's natural capital, increase eco-system services, strengthen biodiversity, improve water quality and storage attenuation as well as developing the amenity potential of the peatlands.

Bord na Móna maintains a provision on its balance sheet to pay for the future costs of **standard** rehabilitation and decommissioning. This is updated every year - for more information see the Bord na Móna Annual Report (Bord na Móna, 2024). Bord na Móna is fully committed to meeting its obligations relating to rehabilitation and decommissioning under the Integrated Pollution Control Licence.

At this time, a 'standard' rehabilitation provision (sufficient to discharge the requirement of Condition 10 in the licence) has been allocated to the site based on the area of different cutaway types across the site (See Appendix I).

9. AFTERCARE AND MAINTENANCE

9.1 Programme for monitoring, aftercare and maintenance

This programme for monitoring, aftercare and maintenance has been designed to meet the Conditions of the IPC Licence. This is defined as:

- There will be **initial quarterly monitoring assessments** of the site to determine the general status of the site, the condition of the silt ponds, assess the condition of the rehabilitation work, monitoring of any potential impacts on neighbours land, general land security, boundary management, dumping and littering.
- The number of these site visits will reduce after 2 years to bi-annually and then after 5 years to annual visits.
- These monitoring visits will also consider any requirements for further practical rehabilitation measures.
- The **baseline condition of the site will be established** post-rehabilitation implementation by using an aerial survey to take an up to date aerial photo, when rehabilitation is completed. This will be used to verify completion of rehabilitation measures. The extent of bare peat will be assessed using this baseline data, and habitat maps will be updated, if needed. It is proposed that sites can be monitored against this baseline in the future.
- **Water quality monitoring** at the bog will be established. The main objective of this water quality monitoring will be to establish a baseline and then monitor the impact of peatland rehabilitation on water quality from the bog.
- In order to assist in monitoring surface water quality from this bog, it is planned to increase the existing licence monitoring requirements to sampling for the same parameters to every month during the scheduled activities and for a period up to two years post rehabilitation, depending on the period required to confirm that the main two parameters, suspended solids and ammonia are remaining compliant with the licence emission and trigger limit values and there is an improving trajectory in these two parameters i.e. reduction in concentration.
- Enhanced water quality monitoring will aim to include up to 70% of a bogs drainage catchments.
- Monitoring results will be maintained, trended and reported on each year as part of the requirement to report on Condition 10.1 of the IPC Licence on Bog Rehabilitation in the Annual Environmental Report, which will be available in April each year at www.epa.ie.
- The parameters to be included (as per condition 6.2 of the IPC Licence) include monthly monitoring for pH, Suspended Solids, Total Solids, Total Phosphorus, Total Ammonia, Colour, and COD and DOC.
- This monthly sampling regime on a selected number of silt ponds will be carried out over a two-year cycle. The original (licence) requirement was for a quarterly sampling regime, but this has been increased to a monthly regime to appropriately track the changing water chemistry that will occur as part of this enhanced rehabilitation. In addition, DOC will be included as a parameter to try and identify any changes in carbon in the surface water.
- If, after two years, key criteria for successful rehabilitation are being achieved and key targets are being met, then the water quality monitoring will be reviewed, with consideration of potential ongoing research on site. The water quality data, the aerial surveys and the habitat mapping will be collated and will be submitted to the EPA as part of the final validation report.
- If, after two years, key criteria for successful rehabilitation have **not** been achieved and key targets have **not** been met, then the rehabilitation measures and status of the site will be evaluated and enhanced, where required. This evaluation may indicate no requirement for additional enhancement of

rehabilitation measures but may demonstrate that more time is required before key criteria for rehabilitation has been achieved. Monitoring of water quality will then also continue for another period to be defined.

- Where other uses are proposed for the site that are compatible the provision of biodiversity and ecosystem services, these will be assessed by Bord na Móna in consultation with interested parties. Other after-uses can be proposed for licensed areas and must go through the required assessment process and planning procedures.

Additional monitoring measures are also proposed to monitor ecosystem service benefits that have been derived by enhanced rehabilitation. These proposed monitoring measures will be funded by the proposed Climate Action Fund Scheme or additional other funding. Monitoring of climate action and other ecosystem service benefits will be designed to take account of the requirements of monitoring benefits of the overall Scheme and will be stratified; that is not all monitoring will be carried out in each site. These are defined as:

- Vegetation and habitat monitoring after rehabilitation is completed using a cutaway bog condition assessment. This assessment will include assessment of on environmental and ecological indicators such as vegetation cover, vegetation communities, presence of key species, *Sphagnum* cover, bare peat cover and water levels. It is proposed that sites can be monitored against this baseline in the future.
- The condition of the bog can be assessed using the condition assessment and suitable Greenhouse Gas (GHG) emission factors can be assigned to different habitats. GHG emission factors have been determined for various peatland habitats in Ireland (Wilson *et al*., 2015) and are constantly being refined with more and more research. BnM is actively supporting research into GHG fluxes in different rehabilitated peatland habitats. This means that potential GHG emissions can be estimated from the site, as the site continues along its trajectory towards a naturally functioning peatland ecosystem.

9.2 Rehabilitation plan validation and licence surrender – report as required under condition 10.4

IPC Licence Condition 10.4. *A final validation report to include a certificate of completion for the Rehabilitation Plan, for all or part of the site as necessary, shall be submitted to the Agency within six months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.*

Reporting to the EPA will continue until the IPC Licence is surrendered. The bog will be included in the full licence surrender process as per the Guidance to Licensees on Surrender, Cessation and Closure of Licensed Sites EPA, 2012, when:

- The planned rehabilitation has been completed.
- The key criteria for successful rehabilitation have been achieved and key targets have been met.
- Water quality monitoring demonstrates that water quality of discharge is stabilising or improving; and
- The site has been environmentally stabilised.

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APPENDIX I: STANDARD PEATLAND REHABILITATION THAT HAS ALREADY BEEN COMPLETED TO MEET CONDITIONS OF THE IPC LICENCE

A standard peatland rehabilitation has already been completed to meet conditions of the IPC Licence.

Bord na Móna operates under IPC Licence issued and administered by the EPA to extract peat within the Littleton Bog Group (Ref. PO-499-01). As part of Condition 10.2 of this licence, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area.

This document seeks to address the requirements of Condition 10.2 of IPC Licence Ref. PO-499-01:

> "*The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area.*"

Ballybeg/Lanespark/Derryvella Bog was used to supply fuel peat to the Littleton Briquette Factory, Killeen, Thurles, Co. Tipperary. Ballybeg/Lanespark/Derryvella Bog was in industrial peat production from 1970's to 2017. In 2017, Bord na Móna announced the closure of the Littleton Briquette factory and the cessation of industrial peat production in a number of cutaway bogs within the Littleton Bog Group, including Ballybeg/Lanespark/Derryvella Bog. Peatland rehabilitation was carried out in 2018-2021 with extensive drain-blocking and hydrological management (Phase 1 rehabilitation). This standard peatland rehabilitation plan is outlined here to **demonstrate rehabilitation that was completed** between 2018-2021.

Bord na Móna covered the costs that have accrued from these standard decommissioning and rehabilitation activities, as part of its original obligations. The existing costs associated with both the removal of potentially polluting materials and the environmental stabilisation of the peatlands resides with Bord na Móna. However, the expenditure necessary to deliver the additional and enhanced decommissioning, rehabilitation and restoration (EDRRS/PCAS) proposed for 2025 and the benefits that flow from these measures and interventions/improvements will be eligible for funding by the EU through Ireland's National Recovery and Resilience Plan.

Scope of rehabilitation

The principal scope of this rehabilitation plan is to rehabilitate the bog. This is defined by:

- The area of Ballybeg/Lanespark/Derryvella Bog.
- EPA IPC Licence - Ref. P0-499-01. As part of Condition 10.2 of this license, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area. Ballybeg/Lanespark/Derryvella Bog is part of the Littleton Bog Group.
- The current condition of Ballybeg/Lanespark/Derryvella Bog.
- The key objective of rehabilitation, as defined by this licence, is **environmental stabilisation** of the bog.
- To minimise potential impacts on neighbouring land. Boundary drains around Ballybeg/Lanespark/Derryvella Bog will be left unblocked as blocking boundary drains could affect adjacent land.
- Land-use.

Rehabilitation goals and outcomes

The key rehabilitation goal and outcome for Ballybeg/Lanespark/Derryvella Bog is environmental stabilisation of the site via wetland creation. This is defined as:

- Carrying out drain blocking to re-wet peat and slow runoff.
- Stabilising potential emissions from the site (e.g. suspended solids).
- Environmental stabilisation.

The outcome is setting the site on a trajectory towards establishment of natural habitats.

Criteria for successful rehabilitation:

- Rewetting of residual peat and shallow cutaway in the former area of industrial peat production to offset potential silt run off and to encourage development of vegetation cover via natural colonisation and reducing the area of bare exposed peat.
- That there is a stabilising/improving concentration of suspended solids and ammonia associated with the measures undertaken to stabilise the peat surface by the blocking of the internal drainage system and the maximised rewetting of the peat surface. This will be demonstrated by developing a stable or downward trajectory of water quality indicators (suspended solids and ammonia) towards what would be typical of a re-wetted cutaway bog. This will be measured via water quality monitoring (suspended solids and ammonia).
- Receiving water bodies have been classified under the River Basin Management Plan and this classification includes waters that are 'At Risk' from peatlands and peat extraction. The success criteria will be that the 'At Risk' classification will see improvements in the associated pressures from this peatland or if remaining At Risk, that there is an improving trajectory in the pressure from this peatland.

Rehabilitation targets

- Demonstrating the delivery of the rehabilitation through site visits and through updated aerial photography (indicating presence of peat blockages and re-wetting). This will be demonstrated by a post rehab aerial survey.
- Stabilising potential emissions from the site (e.g. suspended solids). The key target will be developing a stable or downward trajectory of water quality indicators (suspended solids and ammonia) towards what would be typical of a re-wetted cutaway bog. This will be demonstrated by water quality monitoring results.

Rehabilitation measures:

- Blocking field drains in drier sections of the former industrial production area to create regular peat blockages (three blockages per 100 m) along each field drain.
- Re-alignment of piped drainage; and management of water levels to create/enhance existing wetlands.
- Decommissioning of a pump in Lanespark Bog.
- Fertiliser application over high fields and headlands in Derryvella Bog.
- No measures are planned for the majority of surrounding marginal peatland habitats.
- Silt ponds will continue to be maintained during the rehabilitation and decommissioning phase.
- Evaluate success of short-term rehabilitation measures and enhance where necessary.

- Decommissioning of silt-ponds will be assessed and carried out, where required.

Timeframe:

- 2018-2021. 1st phase of rehabilitation. Removal of milled peat stock. Field drain blocking.
- 2018-2019. 1st phase of rehabilitation. Field drain blocking across the bog. Removal of the pump.
- 2021. Application of fertiliser along the headland.
- >2027: Decommission silt-ponds, if necessary.

Table AP-1. Rehabilitation measures and target area.

Type	Code	Description	Area (Ha)
Dry cutaway	DCT1	Blocking outfalls and managing water levels with overflow pipes	5.9
Deep peat	DPT1	Regular drain blocking (3/100 m) + blocking outfalls and managing water levels with overflow pipes	13.8
Wetland	WLT1	Turn off or reduce pumping to re-wet cutaway + blocking outfalls and managing water levels with overflow pipes	65.7
Additional Works	AW	Targeted drain blocking	27.4
Marginal Land	MLT1	No work required	15.5
Other	Silt Pond	Silt ponds	0.5
Other	Constraint		348.2
Total			474.3

See Drawing number *BNM-DR-26-07-RP-20 Ballybeg/Lanespark/Derryvella Bog: Standard Rehab Measures* included in the accompanying Mapbook which illustrates the standard rehab measures to be applied.

Monitoring, after-care and maintenance

- There will be initial quarterly monitoring assessments of the site to determine the general status of the site, the condition of the silt-ponds, assess the condition of the rehabilitation work, assess the progress of natural colonisation, monitoring of any potential impacts on neighbouring land and general land security. The number of site visits will reduce after 2 years to bi-annually. These site visits will assess the need to additional rehabilitation.
- Water quality monitoring will be established.
- Monitoring results will be maintained, trended and reported on each year as part of the requirement to report on Condition 10.1 of the IPC Licence on Bog Rehabilitation in the Annual Environmental Report, which will be available in April each year at www.epa.ie.
- The parameters to be included (as per condition 6.2 of the IPC Licence) include monthly monitoring for pH, Flow, Suspended Solids, Total Solids, Total Phosphorus, Total Ammonia, Colour, and COD.
- This sampling regime on a selected number of silt ponds will be carried out over a two-year cycle. The original (licence) requirement was for a quarterly sampling regime.

- Where other uses are proposed for the site, these will be assessed by Bord na Móna in consultation with interested parties. Other after-uses can be proposed for licensed areas and must go through the required assessment and planning procedures.

Validation and IPC Licence surrender

Reporting to the EPA will continue until the IPC Licence is surrendered. The bog will be included in the full licence surrender process as per the Guidance to Licensees on Surrender, Cessation and Closure of Licensed Sites (EPA, 2012) when:

- The planned rehabilitation has been completed;
- Water quality monitoring demonstrates that water quality of discharge is stabilising or improving; and
- The site has been environmentally stabilised.

APPENDIX II: BOG GROUP CONTEXT

The Littleton Bog Group IPC Licenced area has been in industrial peat production for several decades. There are 11 defined bog units covering a total area of 4,421 ha. Each bog area further comprises a range of habitats from bare milled peat former production areas to re-colonising cutaway to workshops areas and transport infrastructure. Industrial peat extraction from these sites mainly supplied briquettes, horticulture and commercial turf for domestic use.

Industrial peat extraction in the Littleton Bog Group ceased in 2017. Some remnant small stockpiles which were harvested within the Bog Group prior to 2017 remain on the bogs. Some rehabilitation has already been undertaken at some of the Littleton bogs, including Carrickhill, Templetuohy, Bawnmore, Inch, Ballybeg, Derryvella and Killeen Bogs.

The rehabilitation plan for the Littleton Bog Group encompasses all areas involved in industrial peat production including former industrial production areas and associated facilities.

A breakdown of the component bog areas for the Littleton Bog Group IPC Licence Ref. P0-499-01 is outlined in Table Ap-2. Industrial peat production history varies across the Littleton bog group, so there is a wide range of peat depths at present.

Table Ap-2: Littleton Bog Group names, area and indicative status

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
Carrickhill	170 ha	Cutover Bog Industrial peat production started in the 1970's and ceased in 2017. There is residual deep peat across much of this site. Carrickhill had a partially pumped drainage system.	Carrickhill Bog formerly supplied peat to the Littleton briquette factory. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities. The pump was decommissioned in 2018. Drain blocking was carried out in 2018. A fertiliser treatment on part of the headland was carried out in 2021. The majority of the site is still mostly bare peat. Carrickhill is proposed for the Coillte/BnM Midlands Native Woodland Project. 28 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service.	2017	Draft 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025
Templetuohy	737 ha	Cutover Bog	Templetuohy Bog formerly was developed to supply fuel sod peat	2017	Draft 2018

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
		Industrial peat production commenced at Templetuohy Bog in 1940's. Areas began to develop as cutaway during the 1980s as peat extraction ceased on a phased basis. Industrial peat extraction finally ceased in 2017. This bog has a partially pumped drainage system. Part of the site has developed pioneer cutaway habitats. Areas re-developed for peat extraction in 2015-17 are now revegetating quickly. Areas that were used for peat extraction upto 2017 are a mosaic of re-wetted bare peat and pioneer communities.	and also supplied peat to the Littleton briquette factory. Bord na Móna have constructed a 40MW Wind Farm with 14 turbines and road network on cutaway at Templetuohy bog called Bruckana Wind Farm. This wind farm is operational. Pumping is still operational across this site to support the wind farm infrastructure.		Phase 1 Rehab measures implemented 2018-2021 Updated 2025
Derryville	250 ha	Cutover Bog Industrial peat production commenced at Derryville Bog in 1970's. Areas began to develop as cutaway during the 2000s as peat extraction ceased on a phased basis. Peat extraction finally ceased in 2017. This bog has a partially pumped drainage system.	Derryville Bog formerly supplied peat to the Littleton briquette factory. Part of the site has been developed for conifer forestry and is leased to Coillte. Part of the site was sold to Lisheen Mine and removed from the IPC Licence in the 2000s. Much of the former production area on site is developing pioneer cutaway vegetation communities, the remainder of the site is bare peat and developing wetland. Pumping continued at Derryville until 2022. Pumping has now ceased, and measures have been implemented in 2024 to manage water levels across the site and to decommission the pump.	2017	Updated 2025

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
Bawnmore	531 ha	Revegetating cutover bog. Industrial peat production commenced at Baunmore Bog in 1970's. Areas began to develop as cutaway during the 2000s as peat extraction ceased on a phased basis. Peat extraction finally ceased in 2017. Much of the site is now developing a mosaic of woodland, peatland and wetland habitats. Baunmore had a partially pumped drainage regime.	Bawnmore Bog formerly supplied peat to the Littleton briquette factory. Much of the site is developing pioneer cutaway habitats and the site has significant biodiversity value. Pumping ceased in 2018. Part of the access is used for log biomass storage (for Edenderry Power). Bawnmore is proposed for the Coillte/BnM Midlands Native Woodland Project. 39 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service.	2017	Updated 2025
Ballysorrel	196 ha	Drained raised bog – This site was initially drained for peat extraction. It was developed for peat production in the 1970s, but milled peat harvesting only occurred over a short 2 year timeframe. The site was then left as a peat reserve to be re-developed in the future. Restoration/drain blocking carried out in in 2018.	Much of the site was bare peat in the early 2000s. The site has since re-vegetated naturally (in a drier situation) since then and is now responding quickly to the recent re-wetting. Much of the high bog has re-colonised with Heather-dominated vegetation. Small hummocks of *Sphagnum* capillifolium and S. subnitens are present. *Sphagnum* spp. are also present in some low-lying areas that are permanently waterlogged and are spreading.	2017	Final 2019
Inch	120 ha	Cutover Bog Industrial peat production since 1970s. Finally ceased in 2017. Inch had a partially pumped drainage regime.	Inch Bog formerly supplied peat to the Littleton briquette factory. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities with deep peat areas slow to colonise and remaining mostly bare peat. Pumping ceased in 2018. Inch is proposed for the Coillte/BnM Midlands Native Woodland Project. 19 ha is proposed for planting at this site.	2017	Updated 2025

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
			This proposed project is currently being considered for consent by the Forest Service.		
Longford Pass (Popes Bog)	214 ha	Cutaway Bog Peat production at Longfordpass bog commenced in the 1940's and finally ceased in 2017. Peat extraction ceased and cutaway habitats began to develop on a phased basis. Longfordpass has a partially pumped drainage system.	Longford Pass Bog initially was developed as a sod turf production site. It then formerly supplied peat to the Littleton briquette factory. The site was bisected by the construction of the N8 Motorway in 2000s. A small area between the new motorway and R639 (old main road) was leased and developed for farmland in 2018. Longford Pass is part of the proposed Littleton Wind Farm Project. This project is currently in pre-planning. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities with deep peat areas slower to colonise. Pumping continued at the site until 2022, when the pumping failed. Since then, measures have been carried out to manage water-levels.	2017	Draft 2018
Ballybeg, Lanespark and Derryvilla	474 ha	Cutaway Bog Industrial peat production since 1970s and finally ceased in 2017. Peat extraction ceased and cutaway habitats developed on a phased basis during this period. .	Ballybeg, Lanespark and Derryvilla initially were developed for sod turf production, and then formerly supplied peat to the Littleton briquette factory. Part of the site has been developed for conifer forestry and is leased to Coillte. Part of Lanespark/Derryvilla (Loch Doire Bhile) was developed as fishing lake and an amenity site in 1999-2002. This site is leased to Slieve Ardagh Rural Development. Lanespark is part of the proposed Littleton Wind Farm Project. This project is currently in pre-planning.	2017	Draft 2018 Ballybeg & Derryvella Updated 2025

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
			A greenway was constructed across the site as part of the Littleton Labyrinth Project in 2024, connecting the historical site of Derrynaflan to Loch Doire Bhile amenity, via Lanespark. Additional greenway is proposed to extend amenity through Derryvilla and Ballybeg as part of Failte Ireland. Midlands Trail project. This is currently in pre-planning. Ballybeg and Lanespark are proposed for the Coillte/BnM Midlands Native Woodland Project. 21 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service .		
Killeen	632 ha	Industrial peat production commenced at Killeen Bog in 1980s. Industrial peat extraction finally ceased in 2021.	Killeen bog formerly supplied peat to the Littleton briquette factory and the horticultural market. Re-wetting was carried out across the site in 2021. Some areas of shallow peat cutaway on site are developing pioneer cutaway vegetation communities with deep peat areas slower to colonise since the site was re-wetted. A greenway was constructed across the site as part of the Littleton Labyrinth Project in 2024, connecting the historical site of Derrynaflan to Loch Doire Bhile amenity, via Lanespark. Killeen is proposed for the Coillte/BnM Midlands Native Woodland Project. 31 ha is proposed for planting at this site. This proposed project is currently being considered for consent by the Forest Service .	2017	Draft 2018 Phase 1 Rehab measures implemented 2018-2021 Updated 2025

Bog Name	Area (ha)	Stage of development	Land-Use and History	Peat Production Cessation	Rehab Plan Status
Littleton	1,020 ha	Cutaway Bog Littleton is a relatively old industrial peat production bog. Large-scale industrial peat production began in the 1940's where sod peat was produced for fuel. Sod peat production was mechanised during the 1950's. Milled peat production began in the 1970's and milled peat was supplied to the Briquette factory (constructed in 1981) at Lanespark. Peat extraction ceased and cutaway habitats developed on a phased basis since the 1890s and some well-established cutaway habitats have developed. Industrial peat extraction finally ceased in 2018. Littleton has a partially pumped drainage system.	Littleton Bog formerly supplied sod peat before supplying peat to the Littleton briquette factory. Older cutaway has already extensively colonised with pioneer cutaway, wetland and scrub habitats. Part of the site has been developed for conifer forestry and is leased to Coillte. A small area (10 ha) was used as a pilot biomass project and Eucalyptus was planted in 2018. Littleton is part of the proposed Littleton Wind Farm Project. This project is currently in pre-planning. Some pumps in Littleton Bog have been decommissioned and some have been retained and are still operational.	2017	Draft 2018

See Drawing number *BNM-DR-26-07-RP-24: Bog Group,* included in the accompanying Mapbook which illustrates the location of Ballybeg/Lanespark/Derryvella Bog and the Littleton Bog Group in context to the surrounding area.

APPENDIX III: ECOLOGICAL SURVEY REPORT

The ecological survey reports for Ballybeg/Lanespark/Derryvella Bog are presented as two standalone reports below. The areas of Lough Doire Bhile and Lanespark Bog have been constrained out of the PCAS rehabilitation extent; therefore the ecological reports for these areas are not included here.

Derryvella Bog

Ecological Survey Report

Note: This report outlines an ecological survey of the bog. This report should not be taken as a management plan for the site as other land-uses may still be considered. Information within this report may inform the development of other land-uses and identify areas with particular biodiversity value. The report outlines potential options for biodiversity management after industrial peat production has ceased.

Bog Name:	**Derryvella (Lanespark)**	**Area (ha):**	123.3 ha
Works Name:	Littleton	**County:**	Tipperary
Recorder(s):	MMC	**Survey Date(s):**	28/08/2012

Habitats present (in order of dominance)

The most common habitats present at this site include:

- Bare peat (Codes refer BnM classification of pioneer habitats of former peat production areas. See Appendix II).
- Pioneer poor fen dominated by Soft Rush (pJeff) and or Bog Cotton (pEang)
- Pioneer Purple Moorgrass-dominated communities (gMol) (around margins and in mosaic)
- Exposed gravel (Gr)
- Birch scrub (oBir, cBir) (generally in mosaic with other cutaway habitats)
- Pioneer dry heath (developing on some stock-piles and high fields)

- Scrub (WS1) (Codes refer to Heritage Council habitat classification, Fossitt 2000), See Appendix II)
- Birch woodland (WN7)
- Improved grassland (GA1)

Description of site

Derryvella Bog is located in Co. Tipperary, 5 km south-east of Littleton Village. Derryvella is part of the Littleton Bog group and is located north of the former Littleton/Lanespark briquette factory, and to the east of the Lough Doire Bhile amenity area and biodiversity area. A branch of the BnM railway network connects Derryvella and Lanespark.

Derryvella is a relatively small bog and is a sub-section of the larger Ballybeg/Lanespark/Derryvella bog unit. Former peat fields are orientated north to south. The bog property extends north to a local road that marks the northern boundary. The BnM railway extends along the southern margin of the site. The majority of the bog was formerly developed for peat production and the marginal zones within the BnM property line are rather narrow and dominated by scrub on old high bog. Improved grassland in adjacent farmland extends up to the BnM bog margin along the west side of the bog. There is some recent conifer forestry planted along the eastern margin of the site.

Up until 2017/2018, the majority of the bog was managed for milled peat production and is dominated by bare peat as a result. The narrower southern end of the site has been out of industrial peat production for several years. A ridge of glacial till extends under the peat layer and is exposed in parts. A new deep outfall has been recently dug through this ridge to help drain former production areas to the north. There is some light vegetation over this mound of glacial sub-soil and in the small area of peat trapped to the south of the mound that is now out of production. Purple Moorgrass and Soft Rush dominate the vegetation over the mound with some scattered Heather. However, it has been disturbed recently by the construction of the outfall. There is still significant bare substrate cover with exposed gravel. There is some Gorse scrub developed to the west of the mound and outfall on an old high field that is no longer in use. To the south and on remnant peat there is typical colonisation of pioneer Poor Fen with Soft Rush and Bog Cotton. There is also some scattered Birch scrub but again there is also significant bare peat cover still present. A small sub-basin has developed in this area between the margin of the bog and the mound and the lowest section is wetter and being vegetated by Bog Cotton. There is also a small sub-basin to the east of the mound where there was water lying at the time of the survey. Both Bog Cotton and Bottle Sedge were present in this section.

Other sections that are vegetated include an old stock-pile that has been colonised with Heather and Purple Moorgrass. The south-east margin of the former production bog is situated along a channelized stream and there is a verge of grazed grassland (GS2) developed along this drain on spoil taken from the drain. Purple Moorgrass dominates the marginal vegetation along the western margin of the former production bog.

Designated areas on site (cSAC, NHA, pNHA, SPA other)

None

Adjacent habitats and land-use

The surrounding area is largely dominated by farmland, with improved agricultural grassland (GA1) and some wet grassland (GS4) that extends to the majority of the margins around the bog. Conifer Plantation has been developed along the eastern margin of the bog.

Watercourses (major water features on/off site)

- Derryvella is located within the River Suir catchment.
- Derryvella has a single catchment. The bog drains south towards the new outfall and on to a drain that flows east along the northern margin of Lough Doire Bhile amenity area and biodiversity area. The catchment is treated by a silt-pond that is located to the west of Lough Doire Bhile, where it then drains into the Black River.
- The Black River drains west towards the River Suir. It flows along the south-east and southern margins of the bog.

Peat type and sub-soils

Dark fen peat is exposed over most of this site.

The bog is underlain by mixed glacial till.

Fauna biodiversity

Birds

Several bird species were noted on the site during the survey.

- Blackbird, Wren, Meadow Pipit, Grey Crow (4), Kestrel, Wood Pigeon and Swallow.

Mammals

Signs of several mammal species were noted on the site during the survey.

- Rabbit were sighted along south-west margin and there are frequent signs of grazing.

- Fox droppings and Hare droppings were noted around the site.

Other species

- Butterfly species noted on the site included Large White and Meadow Brown.

Ballybeg Bog

Ecological Survey Report

Note: This report outlines an ecological survey of the bog. This report should not be taken as a management plan for the site as other land-uses may still be considered. Information within this report may inform the development of other land-uses and identify areas with particular biodiversity value. The report outlines potential options for biodiversity management after industrial peat production has ceased.

Bog Name:	**Ballybeg (Lanespark)**	**Area (ha):**	123.3 ha
Works Name:	Littleton	**County:**	Tipperary
Recorder(s):	MMC	**Survey Date(s):**	20/09/2012 11/2017

Habitats present (in order of dominance)

The most common habitats present at this site include:

- Bare peat (Codes refer BnM classification of pioneer habitats of production bog. See Appendix II).
- Birch scrub (oBir, cBir) (generally in mosaic with other cutaway habitats)
- Pioneer dry heath (generally in mosaic with Birch scrub and Purple Moorgrass-dominated grassland)
- Pioneer poor fen dominated by Soft Rush (pJeff)
- Pioneer Purple Moorgrass-dominated communities (gMol) (around margins and in mosaic)
- Open water (OW)
- Bog timber
- Scrub (WS1) (Codes refer to Heritage Council habitat classification, Fossitt 2000), See Appendix II)
- Birch woodland (WN7)
- Improved grassland (GA1)
- Raised bog (PB1)
- Treeline (WS2)

Description of site

Ballybeg Bog is located in Co. Tipperary, 1 km south-east of Littleton Village. Ballybeg is part of the Littleton Bog group and is located adjacent to Lanespark and the former briquette factory. There is a branch of the railway connecting Ballybeg and Lanespark.

Ballybeg is a small bog and has a dog-leg shape with a narrower eastern portion. Peat fields are orientated south-east to north-west. The bog property extends south to a local road that accesses the former Lanespark Briquette Factory. Another local road crosses the travel path to the east the bog that links Ballybeg and Lanespark. The BnM railway extends along this travel path and along the southern margins of the east half of the bog, with a branch along the eastern margin.

The majority of the bog was managed for milled peat production and is dominated by bare peat. There are only several tiny sections beginning to develop pioneer cutaway habitats. A low mound is beginning to be exposed at the east end of the site with gravel appeared with some vegetation along the edges of the drains. A small part of the north-west corner was wet at the time of the survey and colonised by species associated with pioneer poor fen habitats (i.e. Soft Rush (*Juncus effusus*) and Bulbous Rush (*Juncus bulbosus*). The majority of this former production area is considered to comprise relatively deep peat with some exposed lighter peat present also. In contrast, the eastern half of the bog has a relatively thin layer of peat remaining. The southern part of the site appears to have more potential for wet peatland habitat development with a basin developed around the main outfall.

A small section at the southern end has been out of production for some time (cutaway) (prior to the 2017 decision to close Littleton Briquette Factory). Silt-ponds have been developed adjacent to the road and grassland (likely grazed) has developed between the silt-ponds. Several fields to the north have been out of industrial peat production for some time or had limited production. They are developing dense Birch scrub/woodland with a mosaic of lighter Birch scrub and pioneer dry heath in sections. Purple Moor-grass (*Molinia caerulea*) and Common Cotton-grass and Hare's-tail Cotton-grass (*Eriophorum angustifolium* and *Eriophorum vaginatum*) are also prominent around the margin of this section and in some parts of the fields where the drainage is impeded. The majority of this section is vegetated.

Several fields along the western part of the northern margin have also developed dry heath and Birch/Gorse scrub mosaics. There has been limited industrial peat production along these fields (fields are relatively high). There are also some sections of bare peat with occasional stands of Ling Heather (*Calluna vulgaris*) re-colonising this area. An area within this section has been developed for the creation of silt-ponds.

Similar vegetation is found in the eastern part of the northern margin. This area is in a localised basin. A dense mosaic of dry Heath, Purple Moorgrass-dominated grassland and Birch scrub form the main part of the mosaic. The marginal areas tend to be Heather dominated. Some sections are wetter and contain more frequent Soft Rush-dominated poor fen with the Birch scrub. The majority of this area is completely vegetated. Several portions of fields adjacent to the milled peat production area have been out of production for a shorter amount of time and are developing Soft Rush-dominated poor fen vegetation with some emergent Birch scrub.

Part of the western production bog margin seems to have been planted with broad-leaved saplings, including Alder), to help form a screen between the bog and an adjacent farmyard. A tall Grey Popular-dominated tree-line is present along the travel path entrance into the bog.

Designated areas on site (cSAC, NHA, pNHA, SPA other)

None

Adjacent habitats and land-use

The surrounding area is largely dominated by farmland, with improved agricultural grassland (GA1) and some wet grassland (GS4) that extends to the majority of the margins around the bog.

Watercourses (major water features on/off site)

- Ballybeg is located within the River Suir catchment.
- Ballybeg is separated into three separate catchments. The northern half of the bog is divided into two separate catchments that both drain north to silt-ponds on the margins of the site. Both ponds drain north towards the Black River via drains.

- The southern catchment drains south through silt-ponds to the Ballyley River. Both rivers drain west towards the River Suir.

Peat type and sub-soils

Dark fen peat is exposed over most of this site. Lighter *Sphagnum*-type peat is also exposed in places where there is deeper peat.

The bog is underlain by mixed glacial till.

Fauna biodiversity

Birds

Several bird species were noted on the site during the survey.

- Blackbird, Mistle Thrush (4), Wren, Robin and Rook (2).

Mammals

Signs of several mammal species were noted on the site during the survey.

- Rabbit were sighted along the railway.
- Fox droppings and Hare droppings were noted around the site.

Other species

N/A

ADDENDUM 1- APPROPRIATE ASSESSMENT REPORT FINDINGS

Bord na Móna operates under IPC Licence issued and administered by the EPA to extract peat within the Littleton bog group (Ref. P0409-01). As part of Condition 10.2 of this license, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area. Ballybeg/Lanespark/Derryvella Bog is located in Co. Tipperary, 1 km south-east of Littleton Village and approximately 7 km southeast of Thurles. The bog unit consists of three closely linked bogs. This addendum outlines the findings of the Appropriate Assessment reporting carried out in respect of proposed PCAS activities at Ballybeg/Lanespark/Derryvella Bog.

An Appropriate Assessment Report[6] was commissioned by Bord na Móna to inform whether the proposed PCAS activities at Ballybeg/Lanespark/Derryvella Bog Bog had the potential to result in Likely Significant Effects on European Sites.

The concluding statement of this report reads as follows:

> *'In light of this conclusion, it is the considered opinion of ROD, as the author of this AA Screening Report, that the competent authority, BnM, may find in completing its AA Screening in respect of the Ballybeg-Lanespark-Derryvella Bog Decommissioning and Rehabilitation Plan, that the project, either individually or in combination with other plans and projects, is not likely to have a significant effect on any European site, in view of best scientific knowledge and the Conservation Objectives of the sites concerned. Therefore, it is the recommendation of the author of this AA Screening Report that the competent authority may determine that AA is not required in respect of the project'.*

Therefore, following screening, Appropriate Assessment is not required for the project as it is not directly connected with or necessary to the management of any European Site(s) and as it can be concluded, on the basis of objective information, that the project, individually or in combination with other plans or projects is not likely to have a significant effect on any European Site(s).

[6] ROD (2025). Ballybeg/Lanespark/Derryvella Bog Bog Decommissioning and Rehabilitation Plan 2025, Screening for Appropriate Assessment.

APPENDIX IV: ENVIRONMENTAL CONTROL MEASURES TO BE APPLIED TO BOG REHABILITATION

- Bog restoration/rehabilitation measures will be restricted to within the footprint of the proposed rehabilitation area.
- The proposed rehabilitation will have due regard to noise limits and hours of operation (i.e. dusk and dawn) to minimise any potential disturbance on resident and local fauna that utilise the site and immediate environs.
- All plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations (SI 359/1996).
- The proposed activities will be restricted to daylight hours and there will be no requirement for artificial lighting.
- Silt ponds will be inspected and maintained as per the IPC Licence.
- During periods of heavy precipitation and run-off, activities will be halted.
- Measures will be carried out using a suitably sized machine and, in all circumstances, excavation depths and volumes will be minimised where possible.
- All machines will be regularly checked and maintained prior to arrival at the site to prevent hydrocarbon leakage.
- Hoses and valves will be checked regularly for signs of wear and will be closed and securely locked when not in use.
- Fuelling and lubrication of equipment shall only be carried out in designated areas away from surface water drainage features and ecologically sensitive areas.
- Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or re-cycling.
- Vehicles will never be left unattended during refuelling.
- No direct discharges to waters will be made. No washings from vehicles, plant or equipment will be carried out on site.
- All plant refuelling will take place using mobile fuel bowsers. Only dedicated trained and competent personnel will carry out refuelling operations.
- Mobile storage such as fuel bowsers will be bunded to 110% capacity to prevent spills. Tanks for bowsers and generators shall be double skinned. When not in use, all valves and fuel trigger guns from fuel storage containers will be locked. All pumps using fuel or containing oil will be locally and securely bunded where there is the possibility of discharge to waters.
- Potential impacts caused by spillages etc. during rehabilitation will be reduced by keeping spill kits and other appropriate equipment on-site.
- Site activities will be carried out in accordance with 'best practice'. In order to ensure compliance and implementation of 'best practice', these measures will be communicated to relevant Bord na Móna staff and updated as required.

APPENDIX V: BIOSECURITY

The potential for importation or introduction of non-native plant species (such as Japanese Knotweed, Himalayan Balsam, etc.) during future rehabilitation management, such as drain-blocking using excavators, has the potential to result in the establishment of invasive species within the site. Section 49 of the European Communities (Birds and Natural Habitats) Regulations 2011 prohibits the introduction and dispersal of invasive alien species (particularly plant species) listed on Part 1 (third column) of the 'Third Schedule'.

This section aims to reduce the risk from, and impacts of, invasive species and protecting biodiversity on lands under Bord na Móna ownership. Rehabilitation and decommissioning in the bog will have due regard to the relevant biosecurity measures outlined below:

- Records of problematic invasive species within the various bog units will be marked out with signs to highlight areas of infestation to personnel.
- All plant machinery will be restricted from disturbing known colonies of invasive species.
- All plant machinery will avoid unnecessary crossings to adjoining lands.
- Good site hygiene will be employed to prevent the introduction and spread of problematic invasive alien plant species (i.e. Japanese Knotweed (*Fallopia japonica*), Himalayan Balsam (*Impatiens glandulifera*), Himalayan Knotweed (*Persicaria wallichii*), etc.) by thoroughly washing vehicles prior to entering the area.

The biosecurity measures outlined above are in line with best practice guidelines issued by the National Roads Authority (NRA, 2010) – The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads and broadly based on the Environment Agency's (2013) – The Knotweed Code of Practice: Managing Japanese Knotweed on Development Sites (Version 3, amended in 2013).

In addition to the above, Best Practice measures around the prevention and spread of Crayfish plague[7] will be adhered with throughout all rehabilitation measures and activities.

[7] https://www.biodiversityireland.ie/projects/invasive-species/crayfish-plague/

APPENDIX VI: POLICY AND REGULATORY FRAMEWORK

Bord na Móna Plc is a publicly owned company, originally established in 1934 to develop some of Ireland's extensive peat resources for the purposes of economic development and to support energy security. In the decades since its establishment the company has employed tens of thousands of people in its fuel, energy, and horticultural growing media businesses. For much of its history the company's support of important national policy aims has been enabled and encouraged in a variety of ways by Government.

Today, Bord na Móna is undertaking a number of highly significant actions in support of climate policy. These actions involve a radical transformation and decarbonisation of nearly the entire Bord na Móna business. This transformation will be driven by unlocking the full potential of our land and creating significant value for Ireland and the Midlands in particular.

Bord na Móna is an integral part of the economic, social, and environmental fabric of Ireland and Irish life. As a key employer in the Midlands, the company is conscious that its obligations go beyond purely commercial and environmental – there is also a social responsibility to employees and the communities served by Bord na Móna. It is the company's role and absolute priority to ensure that its long-term strategy delivers on all of these important areas in a robust and balanced way.

There are a wide range of policies, plans, legislation and land designations that inform the development of this Bord na Móna peatland rehabilitation plan. Bord na Móna have also developed and operate various policies and strategies that also inform the development of this rehabilitation plan.

1 EPA IPC Licence

Bord na Móna operates under IPC Licence issued and administered by the EPA to extract peat within the Littleton bog group (Ref. PO-499-01). As part of Condition 10.2 of this license, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area. The bog is part of the Littleton group. This regulatory requirement is the main driver of the development of this rehabilitation plan.

2 The Peatlands Climate Action Scheme (PCAS)

Bord na Móna (BnM) understand that it is the Minister's (DECC) intention to impose an obligation on Bord na Móna to develop a programme of measures, 'the Scheme', for the enhanced decommissioning, rehabilitation and restoration of boglands previously used to supply peat for electricity generation within the State. The enhanced decommissioning, rehabilitation and restoration of the peatlands funded by the Scheme (PCAS) will deliver benefits across climate action (GHG mitigation through reduced carbon emissions and acceleration towards carbon sequestration), enrich the State's natural capital, increase eco-system services, strengthen biodiversity, improve water quality and storage attenuation as well as developing the amenity potential of the peatlands.

It is envisaged that Bord na Móna carry out an enhanced decommissioning, rehabilitation and restoration, under the Scheme (PCAS), and supported by the Climate Action Fund and Ireland's National Recovery and Resilience Plan across a footprint of 33,000 ha. This scheme will significantly go beyond what is required to meet rehabilitation and decommissioning obligations under existing EPA IPC licence conditions. Interventions and measures supported by the Scheme will ensure that environmental stabilisation is achieved (meaning IPC obligations are met), and importantly, significant additional benefits, particularly relating to climate action and other ecosystem services, will also be delivered. However, only the additional costs associated with the additional

and enhanced rehabilitation, i.e., those activities which go beyond the existing decommissioning and rehabilitation requirements arising from Condition 10 will be eligible for support under the Scheme.

The proposed enhanced rehabilitation detailed in this document, are predicated on the understanding that the element of the activities, over and above the 'standard' rehabilitation necessary to comply with pre-existing Condition 10 IPC Licence requirements, will be deemed eligible costs by the Scheme regulator and funded by the Climate Action Fund and Ireland's National Recovery and Resilience Plan.

For the avoidance of doubt, should the Scheme and the associated statutory obligation on Bord na Móna not materialise, Bord na Móna will not carry out the enhanced decommissioning, rehabilitation and restoration measures described in this plan. Bord na Móna will instead plan to complete an adapted standard decommissioning and rehabilitation measures required under Condition 10 and outlined in Appendix I.

3 National Climate Policy

The National Policy Position establishes the fundamental national objective of achieving a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050. It sets out:

- the context for the objective;
- clarifies the level of GHG mitigation ambition envisaged; and
- establishes the process to pursue and achieve the overall objective.

The evolution of climate policy in Ireland will be an iterative process based on the adoption by government of a series of national plans over the period to 2050. GHG mitigation and adaptation to the impacts of climate change are to be addressed in parallel national plans – respectively through the National Climate Action Plan. The plans will be continually updated, as well as being reviewed on a structured basis at appropriate intervals and, at a minimum, every five years. This will include early identification and ongoing updating of possible transition pathways to 2050 to inform sectoral strategic choices.

Bord na Móna is following a decarbonisation programme aimed at reducing the carbon emissions from its activities. Industrial peat production has now ceased, and several other decarbonisation measures are being implemented. The company aims to further develop renewable energy and resource recovery markets with a key objective of reducing the carbon intensity of all products. In addition, the carbon emission mitigation benefits associated with the post-peat extraction rehabilitated peatland following re-wetting, revegetation and colonisation of significant areas with native woodland will make a significant contribution to achieving the State's carbon emission reduction targets.

4 National Peatlands Strategy

The National Peatlands Strategy (2015) contains a comprehensive list of actions, necessary to ensure that Ireland's peatlands are preserved, nurtured and become living assets within the communities that live beside them. It sets out a cross-governmental approach to managing issues that relate to peatlands, including compliance with EU environmental law, climate change, forestry, flood control, energy, nature conservation, planning, and agriculture. The Strategy has been developed in partnership between relevant Government Departments/State bodies and key stakeholders through the Peatlands Council.

The strategy recognises that Ireland's peatlands will continue to contribute to a wide variety of human needs and to be put to many uses. It aims to ensure that Ireland's peatlands are sustainably managed so that their benefits

can be enjoyed responsibly. It aims to inform appropriate regulatory systems to facilitate good decision making in support of responsible use. It also aims to inform the provision of appropriate incentives, financial supports and disincentives where required. The strategy attempts to strike an appropriate balance between different needs, including local stakeholders like turf-cutters and semi-state bodies such as Bord na Móna.

In line with a National Peatlands Strategy recommendation, a Peatlands Strategy Implementation Group (PSIG), was established, assisted in the finalisation of the Strategy, is overseeing subsequent implementation and will report to Government on an annual basis on the implementation of the actions and principles contained within the Strategy.

Bord na Móna is a key stakeholder in the National Peatlands Strategy and the Peatlands Strategy Implementation Group. The strategy recognises the potential for some Bord na Móna sites to be restored and to contribute to the national SAC and NHA network of protected raised bog sites. The strategy (agreed in 2015) also recognises the various different values of cutaway bog and developed six key principles (with Bord na Móna) for the after-use of cutaway bog.

- Bord na Móna will continue to assess and evaluate the potential of the company's land bank, using a land use review system. The assessment will help prepare a set of evidence-based management plans for the various areas of peatland. These plans will also inform its cutaway bog rehabilitation.
- The policy of Bord na Móna is not to open up any undrained new bogs for peat production.
- Lands identified by Bord na Móna as having high biodiversity value and/or priority habitats will be reserved for these purposes as the principal future land use.
- Generally, Bord na Móna cutaway bogs that flood naturally will be permitted to flood unless there is a clear environmental and/or economic case to maintain pumped drainage.
- In deciding on the most appropriate afteruse of cutaway peatlands, consideration shall be given to encouraging, where possible, the return to a natural functioning peatland ecosystem.
- This will require re-wetting of the cutaway peatlands which may lead in time to the restoration of the peatland ecosystem.
- Environmentally, socially and economically viable options should be analysed to plan the future use of industrial cutaway peatlands, in conjunction with limiting factors as outlined in Bord na Móna's Strategic Framework for the Future Use of Peatlands.

The National Peatlands Strategy highlights the importance and value of developing peatland rehabilitation plans for Bord na Móna cutaway sites and implementing this peatland rehabilitation. Some of these principles have now been superseded by the company's decision to cease industrial peat extraction. The National Peatlands Strategy is currently being reviewed by Government.

5 National River Basin Management Plan 2022-2027 (Water Framework Directive)

The River Basin Management Plan for Ireland 2022-2027 (DHLGH 2024) is the key national plan for Ireland to achieve the objectives of the Water Framework Directive (WFD). In broad terms, the objectives of the WFD are (1) to prevent the deterioration of water bodies and to protect, enhance and restore them with the aim of achieving at least good status and (2) to achieve compliance with the requirements for designated protected areas.

The NRBMP 2022-2027 outlined how peat extraction can be a potentially significant pressure on various water quality parameters. Peatland rehabilitation of Bord na Móna cutaway (in addition to other measures) was part of

the WFD (2022-2027) programme of measures. The NRBMP 2022-2027 takes account of the fact that Bord na Móna was in the process of phasing out the extraction of peat for energy production, that it set a target to rehabilitate 9,000 ha of cutaway bogs (covering 25 peatlands) by 2021 (in 2018) and will look to implement best-available mitigation measures to further reduce water quality impacts caused by peat extraction while the phasing-out process is taking place. This NRBMP 2022-2027 rehabilitation target was superseded by the acceleration of the Bord na Móna de-carbonisation programme and the Scheme (PCAS).

The development of site rehabilitation plans and the delivery of peatland rehabilitation by Bord na Móna was expected to have a positive impact on water quality and will help the NRBMP 2022-2027 deliver its objectives in relation to the Water Framework Directive and is one of the five key principal actions.

The NRBMP 2022-2027 describes how the number of waterbodies impacted by peat, industry and forestry have decreased by 10, 10 and 5 waterbodies, respectively since the second cycle. Impacts on water quality and river habitat arising from peat and peat extraction and associated drainage include the release of ammonium and fine-grained suspended sediments, and physical alteration of aquatic habitats. Drainage of peatlands also results in changes to the hydromorphological condition of rivers.

The NRBMP 2022-2027 outlines how maintaining and restoring Irish bogs will lead to a decrease in waterborne carbon leaching to levels comparable with intact bogs as well as reducing losses of peat silt and ammonia. Vegetation on the surface of the peat can also slow the flow of water over the land surface. Based on the EPA's most recent reports, peat extraction and drainage is impacting on 106 water bodies across the country, with peat the single pressure on 28 of these water bodies. However, compared to the data in the second-cycle plan, the number of water bodies impacted by peat has decreased.

The cessation of industrial peat extraction by Bord na Móna in 2021 was expected to have a significant positive impact on water quality of receiving water courses by reducing the impact of peat extraction as a key pressure on particular water courses. This is now being supported by the results and conclusions of the draft NRBMP 2022-2027.

6 4th National Biodiversity Action Plan 2023-2030

Ireland's 4th National Biodiversity Action Plan (NBAP) sets the national biodiversity agenda for the period 2023-2030 and aims to deliver the transformative changes required to the ways in which we value and protect nature. The 4th NBAP has been developed with the support, advice and input of the interdepartmental Biodiversity Working Group and the independent Biodiversity Forum. Ireland's 2nd National Biodiversity Conference was held to gather insights and recommendations for the development of the NBAP and a public consultation process was held to provide further opportunities to engage with the Plan.

The 4th NBAP strives for a "whole of government, whole of society" approach to the governance and conservation of biodiversity. The aim is to ensure that every citizen, community, business, local authority, semi-state and state agency has an awareness of biodiversity and its importance, and of the implications of its loss, while also understanding how they can act to address the biodiversity emergency as part of a renewed national effort to "act for nature".

The delivery of rehabilitation via PCAS is expected to significantly contribute in the future to actions and targets of the 4th National Biodiversity Action Plan 2023-2030, particularly in relation to peatland restoration, nature restoration and creation of new habitats such as wetlands and woodlands.

7 EU Nature Restoration Law

The EU Nature Restoration Law is a key element of the EU Biodiversity Strategy, which sets binding targets to restore degraded ecosystems, in particular those with the most potential to capture and store carbon and to prevent and reduce the impact of natural disasters. The regulation combines an overarching restoration objective for the long-term recovery of nature in the EU's land and sea areas with binding restoration targets for specific habitats and species. These measures should cover at least 20% of the EU's land and sea areas by 2030, and ultimately all ecosystems in need of restoration by 2050.

This regulation has now been adapted and it is expected that all Member States will be required to produce a National Restoration Plan within two years of adoption. This will be led by the National Parks and Wildlife Service and will comprise a broad and deep public participation process, informed by robust ecological and socio-economic impact assessments. Bord na Móna are working with NPWS to identify bog restoration and other re-wetted cutaway sites that can contribute towards Irelands targets for the Nature Restoration Law.

8 National conservation designations

Bord na Móna operates in a wider landscape that also includes a network of European and National nature conservation sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs), National Heritage Areas (NHAs, pNHAs) and National Nature Reserves). Bord na Móna will take account of this network of conservation objectives and their conservation objectives when developing these rehabilitation plans. It is expected that peatland rehabilitation will, in general, benefit the conservation objectives of this network of nature conservation sites.

9 National Raised Bog Special Area of Conservation Management Plan 2017-2022.

The National Raised Bog Special Area of Conservation Management Plan 2017-2022 sets out a roadmap for the long-term management, restoration and conservation of protected raised bogs in Ireland. The Plan strikes an appropriate balance between the need to conserve and restore Ireland's raised bog network as part of Ireland's commitments towards the EU Habitats Directive, and the needs of stakeholders and gives recognition to the important role that communities have to play in the conservation and restoration of raised bogs. The National Raised Bog Special Areas of Conservation (SACs) Management Plan 2017-2022 is part of the measures being implemented in response to the on-going infringement action against Ireland in relation to the implementation of the EU Habitats Directive, with regard to the regulation of turf cutting on the Special Areas of Conservation (SACs). The then Minister for Arts, Heritage and the Gaeltacht, also published a **Review of Raised Bog Natural Heritage Area Network** in 2014.

Bord na Móna has played a key role in the development of the National Raised Bog Special Area of Conservation Management Plan 2017-2022 and the Review of the Raised Bog Natural Heritage Area Network. Several Bord na Móna sites were assessed by the National Parks and Wildlife Service as part of the above Plan and Review and there is an expectation that several Bord na Móna sites will be designated as SACs and NHAs in the future. This will reinforce the network of protected raised bog sites and replace in part sites that will be de-designated as they have been deemed to be significantly damaged and are deemed to have no raised bog restoration prospects. PCAS is expected to restore several sites that will contribute to The National Raised Bog Special Areas of Conservation (SACs) Management Plan 2017-2022 targets in relation to the restoration of raised bog habitat.

Bord na Móna has also responded to the needs of the NRBMP and provided several sites to the government for the relocation of turf-cutters from SACs. This is part of a suite of ongoing bog conservation measures in the NRBMP to manage turf-cutting in protected sites. Bord na Móna and the National Parks and Wildlife Service continues to engage regarding the ongoing relocation of turf-cutters from protected raised bog sites.

10 All-Ireland Pollinator Plan 2021-2025

The All-Ireland Pollinator Plan 2021-2025 outlines key objectives and actions to protect and support pollinating insects and the habitats they rely on. A Bord na Móna specific action in this plan includes the adoption of pollinator-friendly management within the Bord na Móna network of sites. One action to help achieve this objective is habitat rehabilitation and restoration, where possible, of pollinator-friendly habitats, including peatland habitats.

11 Land-use planning policies

As Bord na Móna operates in many counties across Ireland, it is important to note the respective development plans in these counties. Many of the existing development plans recognise the potential that exists in the after-use of cutover/cutaway peatlands. Bord na Móna seeks to work with all of the relevant local authorities to ensure that the most appropriate after-uses are reflected in local planning policy. The following areas of consistent importance are of both direct and indirect relevance to Bord na Móna: heritage, tourism, biodiversity/conservation, landscape, renewable energy, and economy/enterprise.

12 National Archaeology Code of Practice

Bord na Móna operates under an agreed Code of Practice regarding archaeology with the Department of Arts, Heritage and the Gaeltacht and the National Museum of Ireland which provides a framework to enable the Company to progress peat extraction whilst carrying out archaeological mitigation. (https://www.archaeology.ie/sites/default/files/media/publications/cop-bord-na-mona-en.pdf

The Code replaced a set of Principles agreed with the Department of Arts, Heritage and the Gaeltacht in the 1990s. Under the Code Bord na Móna, the Minister and Director work together to ensure that appropriate archaeological mitigation is carried out in advance of peat extraction.

- BNM must ensure that any monuments or archaeological objects discovered during peat extraction are protected in an appropriate manner by following the Archaeological Protection Procedures.
- BNM must ensure that any newly discovered monuments on Bord na Móna lands are reported in a timely manner to the National Monuments Service of the Department of Arts, Heritage and the Gaeltacht.
- BNM must ensure that any archaeological objects discovered on Bord na Móna lands are reported immediately to the Duty Officer of the National Museum of Ireland.
- Bord na Móna will adhere to the Archaeology Code of Practice relating to management of any archaeological finds that may arise during cutaway peatland rehabilitation and decommissioning.

13 Bord na Móna Biodiversity Action Plan 2016-2021

Rehabilitation of industrial peatlands is a key objective of the Bord na Móna Biodiversity Action Plan 2016-2021. This action plan outlines the main objectives and actions around biodiversity on Bord na Móna lands. The Bord na Móna Biodiversity Action Plan also outlines key International and European policy in relation to biodiversity. This includes the **United Nations Convention on Biodiversity 2011-2020 (CBD)** and **European Biodiversity Strategy to 2020**. Further details of these policies and Bord na Móna s responses can be found in the Bord na Móna Biodiversity Action Plan (Bord na Móna, 2016). Both policy documents highlight targets such as reducing pressure on biodiversity, promoting sustainability, habitat restoration and benefits of ecosystem services.

One example of a key CBD target is:

- *"Restore at least 15% of degraded areas through conservation and restoration activities."*

The EUs headline target for progress by 2020 is to:

- *"halt the loss of biodiversity and the degradation of ecosystems in the EU by 2020, restore them as far as feasible, while stepping up the EU contribution to averting global biodiversity loss."*

This rehabilitation plan is aligned to the CBD target and the EU Biodiversity Strategy target and will help Ireland meet its commitment to these international Biodiversity polices.

14 Bord na Móna commitments

Bord na Móna made the commitment in 2009 not to develop any new peatland sites for industrial peat production. The company has continued to work with different stakeholders.

In line with Bord na Móna's accelerated decarbonisation programme, the company made a further commitment to a significantly larger rehabilitation target. This was reflected in our plans to rehabilitate a further 20,000 hectares of cutaway and cutover bog to wetland and woodland mosaics by 2025. In addition, we planned to restore a further 1,000 hectares of raised bog habitat by 2025. These initial targets have been achieved.

The company announced the cessation of industrial peat production in 2021 and that it would rehabilitate a target of 33,000 ha between 2021-2026 . Rehabilitation measures will continue to be carried out with the focus on re-wetting and rehabilitation of cutover and cutaway areas in line with national policies (such as the National Peatland Strategy, the National Biodiversity Action Plan, The Nature Restoration Law, the Climate Action Plan, the Water Framework Directive, etc.) and rehabilitation guidelines set down by the Environmental Protection Agency. Bord na Móna has now transitioned to a Climate Solutions company with a key commercial and development focus being the delivery of renewable energy to support Ireland's Climate Action Plan. In general, Bord na Móna will seek to balance and optimise commercial, social, and environmental value of its bogs, and develop integrated land-uses, while taking account of the need for sustainability and their biodiversity value.

These commitments outline the importance of peatland rehabilitation to Bord na Móna. The company will continue to demonstrate environmental responsibility and continue to deliver on these commitments in relation to peatland rehabilitation and in relation to the future management of these lands to maximise their benefits, particularly their ecosystem service benefits, along with the sustainable development of a portion of the land bank for other uses, such as renewable energy.

APPENDIX VII: DECOMMISSIONING

1. Condition 10 Decommissioning

Decommissioning is a requirement of the applicable Integrated Pollution Control Licence issued by the Environmental Protection Agency. This condition 10.1 requires the following:

10.1 Following termination of use or involvement of all or part of the site in the licensed activity, the licensee shall:

10.1.1 Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

The main success criteria pertaining to successfully complying with this condition is ensuring that no environmental liability remains from this infrastructure and material and that the bog can be deemed suitable for surrender of the licence under section 95 of the EPA Acts. This is achieved by Bord na Móna identifying and quantifying any mechanical and infrastructural resources that were installed in the bog to enable the development and production operation at the site. This list is then refined to identify any items that would be deemed as possibly resulting in environmental pollution, should they not be removed.

Typically, these items/infrastructures would be any remaining, unconsolidated plant, equipment and attachments, waste materials, unused raw materials such as land drainage pipes, remaining peat stockpiles, stock pile covering, pumps, septic tanks and fuel tanks.

In relation to this bog, the list and tasks would be as follows:

Item	Description	Ballybeg/Lanespark/Derryvella Decommissioning Plan
1	Clean-up of remaining or unconsolidated waste or materials located in Bogs, Yards, Buildings and Offices	Clean-up of Bog
2	Cleaning Silt Ponds	Cleaning Silt Ponds
3	Decommissioning Peat Stockpiles	Peat Stockpile Management
4	Decommissioning or Removal of Buildings and Compounds	Decommissioning or Removal of Buildings and Compounds
5	Decommissioning Fuel Tanks and associated facilities	Where relevant
6	Decommissioning and Removal of Bog Pump Sites	Where relevant
7	Decommissioning or Removal of Septic Tanks	Where relevant

In addition, condition 7 of the licence requires these now defined waste items to be disposed of or recovered as follows:

7.1 Disposal or recovery of waste shall take place only as specified in *Schedule 2(i) Hazardous Wastes for Disposal/Recovery* and *Schedule 2(ii) Other Wastes for Disposal/Recovery* of this licence and in accordance with the appropriate National and European legislation and protocols. No other waste shall be disposed of/recovered either on-site or off-site without prior notice to, and prior written agreement of, the Agency.

7.2 Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as agreed by the Agency, and only transported from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the environment.

7.3 A full record, which shall be open to inspection by authorized persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall as a minimum contain details of the following:

7.3.1 The names of the agent and transporter of the waste.

7.3.2 The name of the persons responsible for the ultimate disposal/recovery of the

waste.

7.3.3 The ultimate destination of the waste.

7.3.4 Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site.

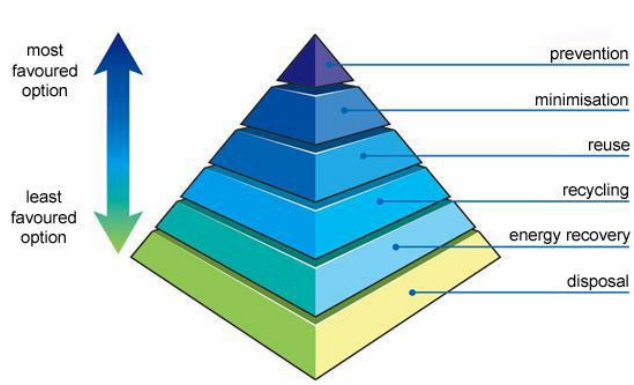
7.3.5 The tonnages and EWC Code for the waste materials listed in *Schedule 2(i) Hazardous Wastes for Disposal/Recovery* and *Schedule 2(ii) Other Wastes for Disposal/Recovery* sent off-site for disposal/recovery.

7.3.6 Details of any rejected consignments.

A copy of this Waste Management record shall be submitted to the Agency as part of the AER for the site.

As required by the licence, these waste items will be removed for recycling or disposal, using external contractors with the required waste collection permits, approved under 7.2, with waste records maintained as required under 7.3.

Where possible, Bord na Móna will utilize the appropriate waste hierarchy to identify waste that can reused or recycled ahead of disposal.



The validation of the success of condition 10.1 is carried out through an Independent Closure Audit (ICA), followed by and EPA Exit Audit (EA) and the eventual partial or full surrender of the licence.

2. Enhanced Decommissioning.

The remaining infrastructure does not constitute a risk to the environment and would not be a requirement of condition 10 of the licence. The removal of these are deemed as enhanced measures. These may enhance the future after use of the bog for amenity value, security against access for illegal and unsocial activities and general State and community benefit. In relation to this bog, this would include the infrastructure defined below:

Item	Enhanced Decommissioning Type	Ballybeg/Lanespark/Derryvella Decommissioning Plan
1	Removal of Railway Lines	Removal of Railway Lines
2	Decommissioning Bridges and Underpasses	Where Applicable
3	Decommissioning Railway Level Crossing	Where Applicable
4	Restricting Access (bogs and silt ponds)	Restricting Access to Bog
5	Removal of High Voltage Power Lines	Where Applicable

APPENDIX VIII: GLOSSARY

Cutaway Bog: A Bord na Móna site generally becomes cutaway when it is economically unviable to continue industrial peat extraction or when the majority of peat has been removed.

Deep peat cutover bog. Deep peat cutover bog is defined as former raised bogs that have been in industrial peat production, where production has ceased but the residual peat depth is typically in excess of 2m. *Sphagnum* mosses are key species of raised bogs and the majority of the peat mass is formed from these mosses. *Sphagnum* species and other raised bog species are a key part of raised bog habitat function and prefer more acidic, nutrient poor, water-logged conditions. Typical raised bog *Sphagnum* mosses and other bog species do not thrive with the more typical alkaline water chemistry of cutaway bog but do grow well in these more acidic conditions where peat has been re-wetted. There is potential to re-develop *Sphagnum*-rich plant communities in these conditions if the peat can be re-wetted. This brings the opportunity of re-developing *Sphagnum*-rich vegetation communities that are considered Carbon sinks or peat-forming habitats and restoring the carbon sequestration function of these sites.

Dry cutaway bog: Cutaway bog is categorised as dry cutaway where it is not practical or feasible to re-wet these areas completely. It is inevitable that some areas of cutaway will remain relatively dry due to the heterogenous topography of the cutaway, as well as requirements for continued drainage on site for identified after-uses, or off site in relation to neighbouring lands or other infrastructure. Ridges and mounds of glacial deposits can become exposed during peat extraction and form a heterogenous topographical mosaic separated by basins. Dry cutaway may have very thin or no residual peat where ridges and mounds have been exposed. The exposed sub-soils are a mix of glacial gravels, muds and tills that can be quite free-draining. Dry cutaway may also have deeper residual peat, but in a location (i.e. at the margin) where the peat cannot be re-wetted due to boundary constraints. Dry cutaway may also develop in situations where there a relatively steep slope that inhibits re-wetting. The majority of dry cutaway will develop towards grassland, heath, scrub and dry woodland habitats.

Enhanced decommissioning: This is defined as decommissioning carried out under the Scheme, which is proposed to be externally funded.

Enhanced rehabilitation: This is defined as rehabilitation carried out under Scheme, which is proposed to be externally funded. It is proposed by Government that Bord na Móna be obligated to carry out enhanced decommissioning, rehabilitation and restoration on peatlands. This Scheme will significantly go beyond what is required to meet rehabilitation and decommissioning obligations under existing EPA IPC licence conditions. Interventions and activities supported by the Scheme will ensure that environmental stabilisation is achieved (meaning IPC obligations are met), and importantly, significant additional benefits, particularly relating to climate action and other ecosystem services, will also be delivered. However, only the costs associated with the additional, enhanced and accelerated measures, i.e., those interventions which go beyond the existing decommissioning and rehabilitation requirements arising from Condition 10 will be eligible for support under the Scheme.

Environmental stabilisation: The key objective of peatland rehabilitation is environmental stabilisation. This means developing habitats and vegetation back onto the bare peat, slowing water movement across the bog, minimising effects to downstream waterbodies and meeting the conditions of the IPC Licence. This is achieved by a combination of re-wetting, where possible, and natural colonisation of the former cutaway, with or without intervention**.** Habitats will develop that reflect the underlying environmental conditions. Other after-use development may also serve to act as environmental stabilisation.

Marginal land. Marginal land is defined as land around the margin of the industrial peat production area. This margin generally contains a range of habitats including scrub, birch woodland, cutover bog and raised bog remnants. It has a variety of land-uses including turf-cutting (private turbary). The Scheme will consider potential rehabilitation and restoration actions (e.g. drain blocking) within marginal land zones, where appropriate.

Rehabilitation: Rehabilitation is defined in general by Bord na Móna as environmental stabilisation of the former cutaway. This is generally achieved via re-wetting, where possible, and natural colonisation of the former cutaway, with or without intervention. It is not possible to restore raised bog habitats on BnM cutaway in general in the short-term. In general, most of the peat mass has been removed from many BnM cutaway sites and the environmental characteristics of these areas have therefore changed radically (peat depths, hydrology, water chemistry, substrate type, nutrient status. This means there will therefore be different habitat outcomes (wetlands, fen, heathland, grassland and Birch woodland). Other after-use development may also serve to act as rehabilitation.

Restoration: Ecological restoration is defined as the process of re-establishing to the extent possible the structure, function and integrity of indigenous ecosystems and the sustaining habitats they provide" (SER, 2004). Defined in this way, restoration encompasses the repair of ecosystems (Whisenant, 1999) and the **improvement of ecological conditions in damaged wildlands** through the **reinstatement of ecological processes**. In general, Bord na Móna cutaway peatlands cannot be restored back to raised bog in a reasonable timeframe as their environmental conditions has changed so radically (with the removal of the acrotelm – the living layer and much of the peat mass). However, they can be returned to a **trajectory** towards a naturally functioning peatland system (Renou-Wilson, 2012). **Raised bog restoration** is an objective of some BnM sites where there is residual natural raised bog vegetation and where the majority of the peat is still intact.

Standard rehabilitation: This is defined as rehabilitation that is designed to meet the conditions of the EPA IPC Licence. The key objective of rehabilitation is environmental stabilisation. This is achieved by a combination of re-wetting, where possible, and natural colonisation of the former cutaway, with or without intervention**.** Other after-use development may also serve to act as rehabilitation.

Standard decommissioning: This is defined as decommissioning that is designed to meet the conditions of the EPA IPC Licence. This is defined as to render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

Wetland cutaway bog. Wetland cutaway bog is defined as former raised bogs that have been in industrial peat production, where production has ceased and the majority of peat has been cutaway, and where this cutaway has the potential to be re-wetted. A significant number of Bord na Móna sites have pumped drainage and these sites are likely to develop a mosaic of wetland habitats when pumping in reduced or stopped. The water chemistry of wetland cutaway frequently is strongly influenced by the more alkaline sub-soils that have been exposed during peat production. This means that pioneer vegetation is more typical of fen and wetland, rather than raised bog. Wetland cutaway will have a broad range of hydrological conditions depending on the local topography. In some cases, these wetlands may form deep water (> 0.5 m) whilst other areas may have the water table at or just below the surface of the ground.

APPENDIX IX: EXTRACTIVE WASTE MANAGEMENT PLAN

(Minimisation, treatment, recovery and disposal)

Objective:
The objective of this generic plan is to comply with the requirements of regulation 5 of the Waste Management (Management of Waste from Extractive Industries) Regulations, and to prevent or reduce waste production and its harmfulness.

Scope:
This plan covers IPPC Licence's Ref PO-499-01, Littleton Group of Bogs located in Counties Kilkenny and Tipperary.

1.0 Extractive Waste:
Waste classified as extractive waste from peat extraction operations arise from three operations associated with this activity.

1.1 Silt Pond excavations and maintenance.
All peat extraction activities in the Littleton bog group are serviced by silt lagoons/ponds. During the excavation of these silt ponds, pre IPPC Licensing in 1999 and since licensing, the excavated material is stored adjacent to the silt pond, where it either remains in situ ores levelled out. As required by condition 6.6, these silt lagoons are cleaned twice per annum or more often if inspections dictate. These silt cleanings are also deposited on the same location, adjacent to the silt pond, where they may be levelled periodically to allow room for subsequent cleanings. These mounds of silt pond excavation material and cleanings are generally no higher that 2-3 metres.

1.2 Bog Timbers:
During peat extraction operations, bog timbers often arise in the bog surface and are required to be cleared. These timbers consist of bog pine, oak and some yew. Some of these timbers, such as the oak and yew are removed for use in the wood craft industry, with the remaining bog pine stockpiled in locations at the opposite end of each bog, where it generally becomes a habitat for flora and fauna. These piles of timber are generally no higher than 1-2 metres.

2.0 PO-499-01 IPPC Licence Extractive Waste Conditions

2.1 Condition 7.5 Extractive Waste Management
The licensee shall draw up a Waste Management Plan (to be known as an Extractive Waste Management Plan) for the minimisation, treatment, recovery and disposal of extractive waste. This Plan shall meet the requirements of regulation 5 of the Waste Management (Management of Waste from the Extractive Industries) Regulations,2009. The Plan shall be submitted for agreement by the Agency by the 31st of December 2012. The Plan shall be reviewed at least once every five years thereafter in a manner agreeable to the Agency and amended in the event of substantial changes to the operation of a waste facility or to the waste deposited. Any amendments shall be notified to the Agency.
All extractive waste shall be managed in accordance with the Extractive Waste Management Plan. A report on the implementation of the Extractive Waste Management Plan shall be provided in the AER.

2.2 Condition 7.6 Waste Facility

(i) No new waste facility may be developed or an existing waste facility modified unless agreed by the Agency.
(ii) The licensee shall ensure that all existing waste facilities are managed and maintained to ensure their physical stability and to prevent pollution or contamination of soil, air, surface water or groundwater.
(iii) The licensee shall ensure that all new waste facilities are constructed, managed and maintained to ensure their physical stability and to prevent pollution or contamination of soil, air, surface water or groundwater.
(iv) Operational measures shall be continuously employed to prevent damage to waste facilities from personnel, plant or equipment.
(v) The licensee shall establish and maintain a system for regular monitoring and inspection of waste facilities.
(vi) All records of monitoring and inspection of waste facilities, as required under the licence, shall be maintained on-site in order to ensure the appropriate handover of information in the event of a change of operator or relevant personnel.

2.3 Condition 7.7 Excavation Voids

7.7.1 Unless otherwise agreed by the Agency, only extractive waste shall be placed in excavation voids.
7.7.2 When placing extractive waste into excavation voids for rehabilitation and construction purposes, the licensee shall, in accordance with regulation 10 of the Waste Management (Management of Waste from the Extractive Industries) Regulations, 2009, and the Extractive Waste Management Plan:

- Secure the stability of the waste
- Put in place measures to prevent pollution of soil, surface water and ground water.
- Carry out monitoring of the extractive waste and excavation void.

Condition 7.5. Extractive Waste Management Plan. 5 (1)

3.0 Minimisation.

3.1 Silt pond excavation material and cleanings.

IPPC Licence conditions require all production areas to be serviced by an appropriately designed silt pond based on storage volume and retention time. Condition 6.6 requires all ponds to be cleaned bi-annually and more often if inspections dictate, so the only opportunity for minimisation of same is through Standard Operating Procedures. These are required under condition 2.2.2 (i) regarding minimisation of suspended solids, and are in-place to minimise the generation of silt, which in-turn will minimise the generation of silt pond waste.

3.2 Power Station Screenings.

These screenings cannot be minimised as they are a consequence of peat production, stones, timbers and oversize peat materials are naturally occurring on the bog, and are required to be removed prior to processing.

3.3 Bog Timbers.

Bog timbers are also naturally occurring materials within a bog and are required to be removed prior for production. The volume of these bog timbers varies from bog to bog and as such their minimisation is not controllable or quantifiable.

4.0 Treatment

4.1 Silt pond excavation material and cleanings.

The silt pond excavation material and silt cleanings do not require any treatment for its end use which will be either backfilling these silt pond voids as per condition 7.7.1 above as part of the Bog Rehabilitation Plan, or reincorporated into the surrounding peatlands.

4.2 Power Station Screenings.
The factory screenings are permitted to be returned to the bog as they were naturally occurring materials from the bog, and as such do not require any treatment to serve this purpose.

4.3 Bog Timbers
As per 1.3 above, these timbers are stockpiled at two locations in each bog, as per the attached list of sites and become habitats for various flora and fauna.

5.0 Recovery
5.1 Silt pond excavation material and cleanings.
Condition 2.2.2 (vi) requires the reuse of silt pond waste to be examined. This was undertaken in 2006, the outcome of which was that this waste peat silt material, as a fuel, was contaminated with sub-soils, rendering it unsuitable for combustion. In addition, volumes are small compared to overall peat production volumes.

5.2 Power Station Screenings.
Given the nature of these screenings as outlined in 1.2 above, there is no further use identified and they are permitted to be disposed of back to the bog.

5.3 Bog Timbers
Investigations into processing these materials into smaller fractions for potential heating purposes did not yield any viable results. In addition, these older stockpiles are now classified as habitats and as such would not be considered for reuse as a fuel.

6.0 Disposal
6.1 Silt pond excavation material and cleanings.
Schedule 3 (ii) permits the disposal of silt pond cleanings (Lagoon Sediments) to the bog and these locations, adjacent to the silt pond site, are presented in the attached spreadsheet, with associated grid coordinates.

6.2 Power Station Screenings.
Schedule 3 (ii) permits the disposal of screenings (Peat Screenings) to the bog at designated locations agreed under Condition 7.4, and these locations, are presented in the attached spreadsheet, with associated grid coordinates.

6.3 Bog Timbers
These naturally occurring bog timbers are stockpiled at locations in each bog, grid coordinates attached.

7.0 Extractive Waste Management Plan

5 (2a)(i)
The vast majority of peat extraction bogs were all designed and drained for production prior to the 1960's and as such the production fields layout cannot' be altered. Under our Cleaner Reduction Procedures, various design

changes have been implemented to the production machines and process to reduce lost peat which eventually is captured in the silt ponds and requires removal as waste peat silt. This along with training and ongoing research and development will continuously reduce waste peat and subsequently waste silt pond cleanings. Bog timbers are present naturally in various volumes and quantities in different bogs and as peat production involves stripping peat in layers, the exposure, generation and removal of these timbers is unavoidable. Work has been undertaken recently into project looking at grinding of these bog timbers in situ using a timber miller, and if this project becomes viable it will contribute to the reduction of bog timbers.

5 (2a)(ii)

Given the nature and expanse of peat bogs, the stockpiling and storage of these waste materials do not present a visual, storage or stability problem. As required under Condition 10 of the IPPC Licence, the silt pond excavations and screenings will be utilised to backfill the silt pond voids once the bogs have finished and stabilised in accordance with out Bog Rehabilitation Plan. Storage of these wastes in the interim, open to the elements does not present a change on the nature of these wastes that will threaten the environment or prevent their reuse during the bog rehabilitation process.

5 (2a)(iii)

Under Condition 10 of the IPPC Licence, all silt ponds will be decommissioned once the bog surface has stabilised, in agreement with the Agency. This will involve the removal of weirs and flow controls, returning the silt pond back to its original drain or removing the silt pond from the drainage system. Both of these activities will involve placing the silt pond extraction and cleaning material back into the excavation void.

5 (2a)(iv)

The peat bogs do not contain any topsoil, so this is not required.

5 (2a)(v)

Peat mineral resources do not undergo any treatment.

5 (2b)

These three extractive waste are all being reused and recovered back to their original extraction points and have not undergone any physical, chemical, or biological change.

5 (2c)(i, ii & iii)

These three extractive wastes, stored on the bog for reuse or recovery during the bog rehabilitation phase, do not require any management or monitoring during the operation of these bogs. Silt pond excavations and cleanings are stored adjacent to the silt pond and quickly revegetated and stabilise, the screenings are graded back into the bog at the agreed locations upon disposal and the bog timbers do not prevent any water or airborne danger to the environment.

5 (3)

The three extractive wastes arising from peat extraction operations at this site are classified wastes from mineral non-metalliferous excavation, with an EWC code of 0101 02. The materials are not classified as hazardous under Directive 91/689/EEC20, and do not contain substances or preparations classified as dangerous under Directives 67/548/EEC5 or 1999/45/EC6 above a certain threshold.

The peat excavations and cleanings are stored in locations and in a manner that they could not collapse, and are remote in their nature. The stockpiles are located adjacent to silt ponds that are cleaned regularly and as such these stockpiles are managed and levelled to facilitate further cleanings.
Therefore the material stored at these waste facilities would not be considered to be a Category A waste facility.

Classification in accordance Annex II.

Waste Material	Description	Classification	Chemical Process treatment	Deposition description	Transport System
Silt Pond Excavations and cleanings	Peat and mineral soils associated with peatlands. Stored for reuse during bog rehabilitation, with no displacement of overburden	01 01 02	None	Excavated from silt ponds by excavator and deposited adjacent to the silt pond.	Excavator
Peat Screenings	Stones, timbers and oversized peat particles, reincorporated into low areas, agreed with the Agency, and stabilized under normal natural bog conditions	01 01 02	None	Removed by screen at the factory and transported by tractor and trailer to the designated and agreed locations	Tractor and trailer.
Bog Timbers	Pine, Oak and Yew species, stored at locations in each bog. Not subject to any stability issues due to exposure to atmospheric/meteorological conditions.	01 01 02	None	Removed from the bog surface by excavator and transported by tractor and trailer to the agreed locations	Tractor and Trailer

Description of operations.
Silt pond excavations arise from the requirement to have silt ponds treating all peat extraction sites. Silt pond cleanings arise from the removal of peat silt from silt ponds as required under IPPC Licence. Bog timbers arise from preparation of the bogs surface for peat production. Estimated quantities of materials are below:

Closure plan. (Bog Rehabilitation Plan).
Condition 10.1 – 10.3 of the IPPC Licence requires the following:

- 10.1 Following termination of use or involvement of all or part of the site in the licensed activity, the licensee shall:
- 10.1.1 Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.
- 10.1.2 Implement the agreed cutaway bog rehabilitation plan (refer Condition 10.2).

10.2 Cutaway Bog Rehabilitation Plan:

- 10.2.1 The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area. This plan shall be submitted to the Agency for agreement within eighteen months of the date of grant of this licence.
- 10.2.2 The plan shall be reviewed every two years and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the written agreement of the Agency.

10.3 The Rehabilitation Plan shall include as a minimum, the following:

- 10.3.1 A scope statement for the plan; to include outcome of consultations with relevant Agencies, Authorities and affected parties (to be identified by the licensee).
- 10.3.2 The criteria which define the successful rehabilitation of the activity or part thereof, which ensures minimum impact to the environment.
- 10.3.3 A programme to achieve the stated criteria.
- 10.3.4 Where relevant, a test programme to demonstrate the successful implementation of the rehabilitation plan.
- 10.3.5 A programme for aftercare and maintenance.

10.4 A final validation report to include a certificate of completion for the Rehabilitation Plan, for all or part of the site as necessary, shall be submitted to the Agency within six months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment. This plan including maps and ecological classifications are available on file at the Allen Clonsast IPPC Licence Coordinators office.

The location in relation to the silt pond excavations and cleanings are adjacent to the silt ponds, which are considered under the Shannon River Basin Management Plan in accordance with the requirements of Directive 2000/60/EC.

Screenings and bog timbers are all naturally occurring elements of peatland and there placement back to the bog in smaller concentrated designated waste facilities does not constitute a risk to the prevention of water compliance.

The lands under where these materials are deposited are peatlands and are un-effected by the placing of this material.

Review.

This plan will be reviewed every five years, the first review to take place in September 2017. This review will entail an inspection of these waste facilities to ensure their placing, management, maintenance and stability comply with the requirements of the Extractive Waste Management requirements and condition 7.5, 7.6 and 7.7 of the Littleton IPPC Licence PO-499-01.

APPENDIX X: MITIGATION MEASURES FOR THE APPLICATION OF FERTILISER

- Any fertiliser used will be Rock Phosphate and will not be applied in the following conditions:
    1. The land is waterlogged;
    2. The land is flooded, or it is likely to flood;
    3. The land is frozen, or covered with snow;
    4. Heavy rain is forecast within 48 hours (forecasts will be checked from Met Éireann).
    5. The ground slopes steeply and there is a risk of water pollution, when factors such as surface run-off pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account.
- No fertiliser will be spread on land within 2 metres of a surface watercourse.
- Buffer zones in respect of waterbodies, as specified on https://www.epa.ie/about/faq/name,57156,en.html, will be adhered with at all times with regard to fertiliser application. Reproduced as follows:

Water body / Feature	Buffer zone
Any water supply source providing 100m^3 or more of water per day, or serving 500 or more people	200 metres (or as little as 30 metres where a local authority allows)
Any water supply source providing 10m^3 or more of water per day, or serving 50 or more people	100 metres (or as little as 30 metres where a local authority allows)
Any other water supply for human consumption	25 metres (or as little as 30 metres where a local authority allows)
Lake shoreline	20 metres
Exposed cavernous or karstified limestone features (such as swallow holes or collapse features)	15 metres
Any surface watercourse where the slope towards the watercourse exceeds 10%	10 metres
Any other surface waters	5 metres*

APPENDIX XI: CONSULTATION SUMMARIES

Table APXI -1 Consultees contacted. ***Note: This includes consultation undertaken as part of the Phase 1 rehabilitation plan.***

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Consultation undertaken in 2017-2018						
Ballybeg-Lanespark-Derryvella	Private individual A					
Littleton Bog Group	Irish Peatland Conservation Council	Several staff members				
Ballysorrell, Templetouhy, Baunmore	National Parks and Wildlife Service	Several staff members				
Lanespark	Private individual B					
Ballysorrell, Carrickhill Baunmore	NUIG	Several staff members				
Littleton Bog Group	Private individual C					
Derryvilla	Slieve Ardagh Rural Development Group	Several members				
Littleton Bog Group	National Parks and Wildlife Service	Regional staff				
Littleton Bog Group	General community meeting – Loch Doire Bhile, site visit to Baunmore					
Littleton Bog Group	National Parks and Wildlife Service	Regional staff				
Littleton Bog Group	Tipperary County Council	Heritage Officer				
Derryvilla	Private Individual D					
Littleton Bog Group	Birdwatch Ireland	Several staff members				
Littleton Bog Group	Irish Peatland Conservation Council	Several staff members				
Littleton Bog Group	Kilkenny County Council	Heritage Officer				
Littleton Bog Group	National Parks and Wildlife Service	Several staff members				
Littleton Bog Group	Irish Peatland Conservation Council	Several staff members				
Littleton	Forest Service	Several staff members				
Baunmore & Littleton	Birdwatch Ireland – Tipperary Branch	Several staff members				
Littleton Bog Group	Tipperary County Council	Several staff members				

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Littleton Bog Group	Tipperary Heritage Forum	Several staff members				
Knockahaw	Private Individual E					
Littleton Bog Group	Environmental Protection Agency, National Parks and Wildlife Service, Irish Peatland Conservation Council	Several staff members				
Baunmore	Irish Wildlife Trust	Several staff members				
Lanespark Derryvilla	National Parks and Wildlife Service and Slieve Ardagh Rural Development Group – Loch Doire Bhile	Several staff members				
Longfordpass	Private Individual F					
Ballysorrell	Heritage Week Walk - Ballysorrell	Several staff members				
Baunmore Carrickhill	Limerick Institute of Technology (LIT)	Several staff members				
Consultation undertaken in 2025						
Ballybeg-Lanespark-Derryvella	Department of Housing, Local Government and Heritage NPWS	General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Department of Agriculture, Food and the Marine	General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Head of Ecological Advisory Unit - NPWS	General email contact	23/07/2025	Email		

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
	Department of Housing, Local Government and Heritage NPWS					
Ballybeg-Lanespark-Derryvella	National Monuments Service	General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Department of Housing, Local Government and Heritage	General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Department of Housing, Local Government and Heritage	General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Dept of Agriculture Food & the Marine	General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Department of Climate, Energy and the Environment	General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email contact	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Dept of Rural and Community Development	Minister Dara Calleary	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Department of the Housing Local Government and Heritage	(Minister of State at the Department of Housing, Local Government and Heritage) Minister James Browne	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Minister of state for Agriculture with responsibility for Land use and Biodiversity	Senator Pippa Hackett Minister of State for Land Use and Biodiversity)	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Minister of State with responsibility for Nature, Heritage and Biodiversity	Christopher O'Sullivan TD	23/07/2025	Email	24/07/2025	Email
Ballybeg-Lanespark-Derryvella	Iarnród Éireann/Irish Rail	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	An Taisce	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Environmental Protection Agency (EPA)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Inland Fisheries Ireland	General email	23/07/2025	Email		

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Ballybeg-Lanespark-Derryvella	Local Authority Waters Programme (West and Border Region)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Local Authority Waters Programme	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Local Authority Waters Programme (Midlands and Eastern Region)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Northern and Western Regional Assembly (NWRA)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	National Museum of Ireland	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Teagasc	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	The Heritage Council	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Waterways Ireland	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	An Forum Uisce (The Water Forum)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Coillte	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Irish Water- Water Supply Project Eastern and Midlands Region	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Uisce Éireann (formerly Irish Water)	General email	23/07/2025	Email	12/08/2025	Email
Ballybeg-Lanespark-Derryvella	Office of Public Works (OPW)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	CARO (Climate Action Regional Office) Eastern and Midlands	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Bat Conservation Ireland	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Birdwatch Ireland	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Butterfly Conservation Ireland	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Eastern and Midland Regional Assembly	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Friends of the Irish Environment	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	ICMSA (Irish Creamery Milk Suppliers Association)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	ICSA (Irish Cattle and Sheep Farmers Association	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Irish Environmental Network (Agriculture and Land Use Policy and Advocacy Officer)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Irish Farmers Association	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Irish Farmers Association (Senior Policy Exec)	General email	23/07/2025	Email		

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Ballybeg-Lanespark-Derryvella	Irish Farmers Association (Galway/Leitrim/Longford/Roscommon/Sligo)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella		General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Irish Peatlands Conservation Council (IPCC)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Irish Raptor Study Group	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Irish Rural Link	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Irish Wildlife Trust	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Inland Waterways Association of Ireland (IWAI)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	National Association of Regional Game Councils	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	National Association of Regional Game Councils	Chairperson	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	NPWS Rangers North Midlands	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	NUIG Galway	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	PPN Roscommon Public Participation Network	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Outdoor Recreation NI	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Ranger Association Committee	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Mid-Shannon Wilderness Park Awareness Group	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Sustainable Water Action Network (SWAN)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Trinity College Dublin	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Turf Cutters and Contractors Association	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	UCD / Irish Rural Link	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	University College Dublin	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Earthy Matters	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Waterways Ireland	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Waterways Ireland Org	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Woodlands of Ireland	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	University of Galway	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Iarnrod Eireann (Infrastructure)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Iarnrod Eireann	General email	23/07/2025	Email		

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Ballybeg-Lanespark-Derryvella	Tipperary County Council, General Address	General email	23/07/2025	Email	21/09/2025	Email
Ballybeg-Lanespark-Derryvella	Senior Executive Officer, Nenagh Municipal District Administrator	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Senior Executive Officer, Corporate Services	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Chief Executive	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Director of Services, roads and transportation, Health and Safety	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Director of Services, Economic and Rural Development (including just Transition)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Director of Services, Environment and Climate Action.	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Director of Services, Local Authorities Water Programme (LAWPRO)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Alan Kelly TD	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Michael Lowry TD	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Ryan O Meara TD	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Seamus Healy TD	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Mattie McGrath TD	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Michael Murphy TD	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Sean Ryan	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Shane Lee	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Siobhan Ambrose	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr William Kennedy	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Michael O Meara	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Michael Smith Cathaoirleach	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Micheal Anglim	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Micheal Lowry Leas Chaoirleath	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Niall P Dennehy	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Pamela Quirke O Meara	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Pat English Deputy Mayor Clonmel BD	General email	23/07/2025	Email		

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Ballybeg-Lanespark-Derryvella	Cllr Peggy Ryan	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Richie Molloy	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Roger Kennedy Leas Chathaoirleach	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Ryan O Meara	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Seamus Morris Leas Chathaoirleach	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr John Fitzgerald	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr John O Heney	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Kay Cahill Skehan	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Kieran Bourke	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Liam Browne	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Louise Morgan Walsh	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Mairin McGrath	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Marie Murphy	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Mark Fitzgerald Cathaoirleach	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Mary Hanna Hourigan	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Michael Brennan	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Micheal Murphy Mayor-Clonmel BD	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Jim Ryan	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Joe Hannigan	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr John Carroll	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr John Crosse Cathaoirleach	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Eddie Moran	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Fiona Bonfield Cathaoirleach	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Amy Goldsboro	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Declan Burgess Cathaoirleach	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Dr Phyll Bugler	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr David Dunne	General email	23/07/2025	Email		

Bog Name	Contact Organisation	Contact Name	Date of Issue	Format	Date Response Received	Response Format
Ballybeg-Lanespark-Derryvella	Cllr Anne Maire Ryan-(Shiner)	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr Tom Acheson	General email	23/07/2025	Email		
Ballybeg-Lanespark-Derryvella	Cllr JP O'Meara	General email	23/07/2025	Email		

APXI -2 Response summary from Consultees contacted (*Note: This includes consultation undertaken as part of the Phase 1 rehabilitation plan).*

Organisation	Summary of Response by Stakeholder	BnM Response
NPWS 8/3/2018	Ballysorrell All walked over the bog and viewed the bog restoration works. MCC outlined work carried out so far and work planned for the future. Planned work is > 75% complete. NPWS staff very complementary of the bog restoration work (drain-blocking with peat dams) carried out so far. All agreed that the bog had significant potential for bog restoration, and future nature conservation. Signs that the bog is already re-wetting in places due to drain-blocking. Discussions about potential for designation of the site for nature conservation by NPWS in future. Review and discussion of NPWS degraded raised bog model outputs for Ballysorrell. Model predicted that 9 ha would have potential for development into active raised bog in the future. General view was that this was probably an under-estimate and that the model likely to be affected by the intensive BnM drainage network. Discussion of potential measures to further increase re-wetting of the bog including berms across high bog at southern section. Bruckana All visited the Bruckana Windfarm. Viewed a cutaway bog area within the windfarm complex where there has been significant natural colonisation for at least 20 years and some targeted hydrological management. Discussion of the former history of Templetuohy Bog as a sod turf production bog. Sod turf cutaway tends to have deeper remnant peat, which in turn can develop Sphagnum-rich vegetation, where conditions suit. Attendees viewed some wet cutaway where there has been some Sphagnum colonisation. Discussion of environmental conditions that led to the development of this specific vegetation type. Discussion of potential to re-wet similar cutaway, with similar environmental conditions and deeper peat, to encourage development of Sphagnum-rich peat-forming vegetation. Discussion of different constraints and opportunities for this type of re-wetting. This Sphagnum-rich peat-forming vegetation only has potential to develop in certain environmental conditions in association with deeper peat. NPWS staff suggested that intensive bunding would have potential to increase the overall re-wetted area. There was general discussion of potential larger project opportunities, in association with planned BnM rehabilitation or future BnM afteruse development. These larger projects could potentially focus on GHG emission reduction, creation of peat-forming habitats, biodiversity enhancement, other ecosystem services enhancement/restoration. Baunmore All visited Baunmore cutaway. Baunmore is a typical milled peat cutaway with pumped drainage and with shallower remnant peat more typical of milled cutaway in the Littleton Bog Group, in contrast to Bruckana. All walked part of the bog where some recent rehabilitation trials have been carried out. MMC pointed out the recent field drain blocking using a bull-dozer that has been carried out so far. The target here was to block drains, re-establish surface drainage and re-wet peat. This work has already successfully held back surface water in places. The cambered fields and variable topography mean that a proportion of the peat fields remain dry. The expected habitat development is a mosaic of poor fen wetland communities, Reed swamp and scrub/wet woodland. MMC explained how blocking the field drains is Phase 1 of the planned rehab trial and that Phase 2 will involve blocking outfalls and cutting new overflow drains to further manipulate overall water levels. The overall strategy is to maximise the area of re-wetted peat with water levels close to the peat surface and emergent wetland communities. NPWS staff also suggested that more intensive bunding would have potential to increase the overall re-wetted area and help manage water levels. All then	

Organisation	Summary of Response by Stakeholder	BnM Response
	examined some cutaway that is colonising naturally with pioneer vegetation. This cutaway is much more alkaline compared to Bruckana with indicators such as the presence of Black Bog-rush.	
Tipperary Cunty Council	The draft plan is an overview of the rehabilitation within the Littleton bog group this comprises of 12 bog areas. The plan is developed under Condition 10 of IPC Licence Ref. P0499-01. (An incorrect licence ref. is given in the plan.) Any consideration for future after uses for the bog areas will be subject to the planning regulatory framework and the Environment section will be obliged to comment at this time on a more detailed proposal. The rehabilitation plan should include best practice measures for the restoration of an optimal range of biodiversity and ecosystems. The aftercare management activities on the level, quantity and quality of water both on site and in the surrounding landscape should avoid any unnecessary deterioration in the quality and quantity of ground and surface waters. After use, peatland water levels and flow regimes should be restored to as close to the natural reference conditions as possible. Any works carried out must be detailed and all stakeholders consulted.	
Irish Peatland Conservation Council	The IPCC welcome the zonation of Ballysorrell Bog for biodiversity and the decision not to develop it for peat resources (Page 3). Ballysorrell Bog is quite southerly in its location and its rehabilitation and zonation for biodiversity will help to extend the range of raised bog habitat in Ireland, which according to "The Status of EU Protected Habitats and Species in Ireland | 2013" (NPWS, 2013) is "BAD". We have a few questions and points to make on the draft rehabilitation plan with the aim to improving its content. It is good to see that Bord na Móna will be restoring the hydrology of the high bog through drain blocking as mentioned on Page 4 and that you also intend to carry out a trial rehab programme of a selected area for training purposes. Could you please elaborate on this? What training/trials do you intend to conduct and is it only inhouse training for Bord na Móna staff? The rehabilitation process may be a good time to test the Canadian method of Sphagnum transfer as there would be time to prepare the site prior to drain blocking. Please give this suggestion consideration as you indicated the peat present as light red brown Sphagnum peat (Page 9). There is Sphagnum on site that could be harvested and used as a donor inoculum for a Sphagnum trial. Page 5 gives information on the short and long-term time-frames of the plan. Could you give more details on the methods that will be utilised to monitor the hydrology i.e. will piezometers be used to measure water levels and will they be measured before drain blocking? This could ensure that any hydrological successes will be shown. In addition, how frequently will the ecotope mapping be conducted? Page 3 details the time-line for the development of Ballysorrell ("Ballysorrell was originally developed……."). Could this historical timeline be re-written as it is difficult to follow. For instance, when did the private sodpeat cutting around the bog cease? When did the milled peat production cease? Could you please specify how Ballysorrell Bog will help to achieve the national conservation target for active raised bog and supporting habitat in Ireland? Are there plans to formally designate this site in the future? Thank you for giving us this opportunity to make some comments on this welcome initiative by Bord na Mona.	
Private Individual A	Seeking return of land at Baunmore CPOed by Bord na Móna	

Organisation	Summary of Response by Stakeholder	BnM Response
NPWS 9/10/2018	The Department, particularly, welcomes the restoration measures proposed for Ballysorrell Bog and Knockahaw Bog which will result in the development of active raised bog habitat and acknowledge that this will significantly aid Ireland in meeting its commitments under the EU Habitats Directive. Whilst it is appreciated that "the rehabilitation measures will be adapted to the various baseline conditions" (Part 1, pg.20) the Department recommends that Bord na Móna consider more fully the potential for forward-planning during production phases of its operation so that the topography of the commercial fields could be engineered so as to best facilitate rewetting of the sites. Such an approach would better conform to Principle 17 (afteruse of cutaway peatlands) of the National Peatlands Strategy (2015). The Department recommends that the ongoing research into the interaction between rehabilitation measures and carbon emissions is prioritized so as to better inform future rehabilitation plans. In the absence of the assimilation of such research outputs into rehabilitation planning it is nonetheless recommended that serious consideration is giving to reprofiling works within the Littleton Bog Group. In relevant sites this could greatly improve the baseline conditions for rewetting and would be justified on the basis that rewetted cutaway has lower carbon emissions that dry, bare cutaway. The foregoing is in line with Principle 19 (contribution of peatland rehabilitation and restoration to climate change mitigation and adaption) of the National Peatlands Strategy. There is some difficulty interpreting the maps due to their complexity and the size of the legend. Maps showing specific restoration actions would be useful, possibly in the form of an overview grid at a scale 1:35,000 with more detailed mapping as per grid squares. Eco-hydrological modelling based on LiDAR/DTM would be essential to ascertain the potential to achieve wet habitats with the potential to turn into carbon sinks. ….. 2 The Department is keen to continue engagement with Bord na Móna as regards investigating more engineered restoration techniques likely to provide results in line with the principles of the National Peatlands Strategy. The NPWS of the Department would welcome an opportunity to meet with you to allow for the Plan to be presented by your Ecology Team and to further explore the options of external funding such as EU LIFE funding, as discussed in previous meetings.	
IPCC 15/08/2018	Could you please clarify the correct area for the group of 12 sites included: is it 5050ha (Page 11, Section 4.2) or is it 4824ha (Page 11, Table 1). If it is the latter could you clarify what the other 226ha constitutes please. IPCC's principal interest in this plan lies in the future of existing acid peat bog remnants, the potential of the cutaway areas to provide biodiversity value and priority habitats for nature conservation, climate change mitigation and the extent to which the plan meets requirements of the National Peatlands Strategy 2015. The area of peatland included in the Littleton Bog Group is significant in the county of Tipperary as it represents one third of the original area of raised bog that occurred in the whole County particularly concentrated in South Tipperary (Hammond 1979 Peatland Map of Ireland) the southern distribution range for raised bogs described in the Status of EU Protected Habitats and Species. In your plan on Table 5 only two bog restoration sites (Ballysorrell and Knockahaw) are proposed covering an area of 567ha. Can you explain the method used in choosing these areas for bog restoration and were any other sites considered within the group? IPCC maintain that two sites is far too little considering the area of the land in the Littleton Group and the lack of any sites of conservation value in this area of former raised bog distribution. We note that Killeens Bog contains acidic peat and that it appears to be earmarked for horticultural peat (sod moss judging from the satellite photograph) should this be required. On Page 16 in conclusion 5 the plan states that this bog could be restored if horticultural peat extraction is stopped. IPCC strongly recommend the immediate cessation of this activity on this site and its inclusion in the restoration sites plan. We have reasoned with Bord na Móna on numerous occasions about the continued national production of horticultural peat as we do not agree that this use represents responsible management as defined in principle P24 in the National Peatlands Strategy. We understand that Sod Moss is regarded in economic terms as a "lost leader" product which negates any economic argument for keeping this site in production. Here in Littleton where Bord na Móna have exploited over 5000ha of Tipperary's	

Organisation	Summary of Response by Stakeholder	BnM Response
	natural peatland resources, all peat production should cease and every effort should be made to restore suitable acid peat resources to living bog where they exist. In this regard on Page 15 (Section 4.3.1.1 [ii]) two further sites with acid peat are mentioned - Carrickhill (substantial raised bog cutover east and west of the cutaway) & Inch (raised bog cutover to the south west of the cutaway) - why are these sites not being included in the bog restoration sites line-up? In the IPCC Sites Database we have a site named Longford Pass - Littleton Bog which is a remnant raised bog that we surveyed with a former Bord na Móna employee Sean Canney and which we subsequently used for educational purposes with local schools with the agreement of Bord na Móna. We would like to see this site included in the bog sites restoration list. (Grid ref. = S 23023 59319). IPCC are very unclear about your aims for the non-designated sites with considerable wildlife interest described on Page 21 of the plan. We estimate that there are 10 sites mentioned that are noteworthy for birds, crustaceans and invertebrates. In addition a further 3 rehabilitation sites are included in the Bord na Móna Biodiversity Plan. On the one hand Bord na Móna makes use of the fact that cutaway bogs are rich in biodiversity as part of the "Naturally Driven" image you like to portray but we can see no substantial commitment to undertake targeted management actions in relation to enhancing and maintaining these species on the sites. For example on Page 19 you state that without additional funding targeted conservation works for breeding birds will not be a feature of this plan. This is wrong and is at odds with Principle 15 in the National Peatlands Strategy 2015. In relation to climate change this rehabilitation plan needs to ensure that all of the cutaway bogs within the Littleton Group are rewetted to prevent carbon leakage. In our experience through visits to Mount Lucas, Ballycon and Lullymore cutaway bogs there are substantial areas within these rehabilitated sites that are dry and emitting carbon. Why does Bord na Móna not recontour sites with un-even topography to ensure that the majority of the bare peat is rewetted? Surely at the peat production stage more effort could be made to extract the peat so that flat substrate remains. Can you indicate within the plan the percentage of peat that will be rewetted and be carbon neutral? This is an important consideration in line with national climate change policy. IPCC find that the plan is overstating the company's intention to cease peat production for electricity by 2030 as their contribution to climate change policy	
Private Individual B	Meeting to discuss land security issues and leasing of land at Lanespark and Derryvilla.	
Private Individual C	Phone call to discuss potential to develop greenway amenity across the Littleton Bog Group.	
Private Individual D	Meeting to discuss boundary issues and potential impact of rehabilitation on adjoining land	
Private Individual E	Meeting to discuss potential gun club project at Knockahaw Bog.	
Private Individual F	Meeting to discuss rare orchids at Longfordpass railway cutting	

Consultation undertaken in 2025		
Uisce Éireann (formerly Irish Water)	In their response, Uisce Éireann stated that 'UÉ has undertaken a review of the rehabilitation plan, and the bogs are not located within any public drinking water abstraction catchments, however, UÉ is supportive of the key environmental and water quality benefits of the proposed rehabilitation'. .	BnM acknowledged the response and consultation is ongoing.
Tipperary County Council	In their submission, Tipperary County Council highlighted that the rehabilitation plan should 'ensure that future options for amenity or tourism uses of the lands are not discounted, having regard to the Council's aspirations to develop eco-tourism projects throughout the county'. Further, it was highlighted that archaeological impacts associated with rehabilitation of Ballybeg Lanespark Derryvella bogs, given the rich archaeological heritage of the lands, should be assessed. Tipperary County Council provided information on the relevant policies and objectives within the Tipperary County Council's Climate Action Plan 2024-2029 that aligned with peatland restoration. Other information focused on the Tipperary Decarbonising Zone, and how peatland restoration would benefit such decarbonisation. Other information was provided on the council's policies on Land-use, Land-use Change and Forestry (LULUCF). It notes that the 'management of agricultural ecosystems, such as grasslands and peatlands' are emitters of CO2 and 'the management of agricultural ecosystems, such as grasslands and peatlands 'an important area for climate mitigation measures'. 'For example, alternative land management measures such as raising the water table in existing pastures and peatlands, new crop types, forestry etc could make this sector a net remover of GHGs'. The submission notes that 'Bord na Móna is to be commended for its decarbonisation programme aimed at reducing the carbon emissions from its activities. This programme supports the National policy position and objective of achieving a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050'. The submission requests: • 'stakeholder collaboration to deliver concerted efforts towards carbon and GHG emissions reductions within the DZ, which can lead the way for wider application across Tipperary'. • 'BnaM are requested to considered if there are opportunities for collaboration with stakeholders, including Tipperary County Council, as part of the delivery of their PCAS programme'. • 'The Mid-Tipperary Decarbonising Zone is within the JTF area and thus there are opportunities to engage local communities, including those previously employed in the peat harvesting industry, in areas related to training and upskilling and sustainable local job creation'. • 'BnaM are requested to consider the referring of the Mid-Tipperary DZ in their relevant publications and projects. In particular to include details on the Mid-Tipperary Decarbonising Zone in the relevant Rehabilitation Plans and associated Map Books'.	BnM acknowledged the response. Consultation is ongoing.

	• 'The strategic location of the national Bioeconomy Campus (Irish Bioeconomy Foundation) at Lisheen should be noted and it is requested that BnaM consider the vision for the National Bioeconomy campus as part of their overall plans in the Mid-Tipperary DZ areas'. 'BnaM are requested to consider, given the particular role of the national DZ programme in emissions reduction, if there is an opportunity to monitor the changes in carbon emissions from a current baseline within the Killeen bog and report on reduced the carbon emissions in support of the national objective of achieving a transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050. Thus, the rehabilitation plans can explicitly state how emissions will be monitored and reported. Such reporting will also support Tipperary County Council objectives for supporting moves towards low-carbon communities within the Decarbonising Zone'.	
(Minister of State at the Department of Housing, Local Government and Heritage) Minister James Browne	Acknowledged receipt of rehabilitation plan.	BnM acknowledged the response. Consultation is ongoing.

APPENDIX XII: ARCHAEOLOGY

Role of the Archaeological Liaison Officer

1. To communicate this Code of Practice and the *Archaeological Protection Procedures* (Appendix IV) to all personnel operating on the bog.
2. To ensure that all notices relating to the *Archaeological Protection Procedures* are posted and maintained at appropriate locations on the bog.
3. To report any stray finds, presented to the Liaison Officer from his/her group of bogs, to the Duty Officer of the National Museum of Ireland.
4. To provide for the appropriate protection of the stray find, whether in-situ or removed from the bog, as directed by the Duty Officer of the National Museum of Ireland.



Code of Practice

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Code of Practice

5. To arrange for the delivery or collection of the stray find, as directed by the Duty Officer of the National Museum of Ireland.

6. To complete the Report of Discovery of Archaeological Object(s) in Bogs (Appendix V), as directed by the Duty Officer of the National Museum of Ireland.

7. To maintain a file of all stray finds and associated documentation and provide copies to the Project Archaeologist.

8. To provide assistance, where required, to the Department during archaeological surveys.

9. To provide assistance, where required, to Bord na Móna's Consultant Archaeologists, during investigation and mitigation of monuments.

10. To report to the Bord na Móna members on the Archaeology Management Liaison Committee any planned developments or new activities on cutaway peatland areas within his/her group of bogs.



Bord na Móna		Land & Habitats– Bog Operations **Archaeological Findings**	
Document Approved By:	**Revision Date:**	**Doc No:**	**Revision No:**
EMD	13/08/2024	ENV017	2
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	Environment Department		1 of 5

Purpose

The purpose of this procedure is to describe the arrangements in Bord na Móna for findings of Archaeological material (Stray Finds).
All objects, sites or monuments, no matter how fragmentary, are important elements of our heritage.

Procedure

1. Check whether there are any known archaeological monuments in your area.
2. Be vigilant at all times - objects or traces of structures can be found on the field surfaces, in the drain faces, on the bog margins or caught within the mechanics of machinery.
3. If an object is found leave it in place, if it is safe to do so, note its position and immediately contact your Archaeological Liaison Officer who will assess the situation and contact the Duty Officer of the National Museum of Ireland.
4. Resist the temptation to investigate the find spot as this may disturb fragile archaeological deposits.
5. If the object is already dislodged or is in imminent danger, remove it carefully, mark its find spot and report it immediately to your Archaeological Liaison Officer.
6. Objects made of wood, leather or textile, which are removed from peat should be kept in conditions similar to those in which they are found. This can be done by packing them in peat or, if waterlogged, placing them in a clean basin of water and sealing the container. Resist the temptation to clean or remove peat from the object.
7. If timbers or other materials, such as gravel or stones, which could be part of a manmade structure are noted on the bog, mark the location and report it immediately to your Archaeological Liaison Officer. If you suspect the find is of archaeological importance, resist the temptation to expose it any further as this could result in damage to the structure.
8. Report anything that looks unnatural in the bog – your Archaeological Liaison Officer will decide whether it should be referred to the appropriate authorities.

NOTE: Our archaeological heritage is a finite, non-renewable resource. Once a site is destroyed its information is lost forever and we have lost the chance to understand a little more about our past, where we have come from and perhaps the opportunity to learn for the future.

Your Archaeological Liaison Officer is Enda McDonagh.

2) Records

Revision Index			
Revision	Date	Description of change	Approved
1	13/19/2020	First release	EMcD
2	13/08/2024	Second release	EMcD

APPENDIX XIII: WATER QUALITY MONITORING RESULTS FOR BALLYBEG BOG & DERRYVELLA BOG

PCAS SW Sampling Scheme				Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids
Bog Group	Licence No	Bog Name	SW Code GIS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
				1/7/23	1/8/23	1/9/23	1/10/23	1/11/23	1/12/23	1/1/24	1/2/24	1/3/24	1/4/24	1/5/24	1/6/24	1/7/24	1/8/24	1/9/24	1/10/24	1/11/24	1/12/24
Littleton Group	PO499-01	BALLYBEG	SW11	2			<2			3			<2			N/R			<2		
Littleton Group	PO499-01	BALLYBEG	SW13	10			3			4			<2			N/R			3		
Littleton Group	PO499-01	LANESPARK	SW14	15			13			<2			2			13			3		
Littleton Group	PO499-01	LANESPARK	SW15	<2			<2			<2			<2			3			<2		
Littleton Group	PO499-01	LANESPARK	SW16	4			<2			18			<2			3			2		
			Suspended Solids ELV	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
		Rainfall (mm) CLONOULTY_Clogher		178.5	82.5	136.2	137	83.7	131.3	62.1	155	93.9	74.9	50.9	42.8	50.7	44.7	64.6	51.5	70.3	79.6

PCAS SW Sampling Scheme				Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour	Colour
Bog Group	Licence No	Bog Name	SW Code GIS	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co	mg/l Pt Co
				1/7/23	1/8/23	1/9/23	1/10/23	1/11/23	1/12/23	1/1/24	1/2/24	1/3/24	1/4/24	1/5/24	1/6/24	1/7/24	1/8/24	1/9/24	1/10/24	1/11/24	1/12/24
Littleton Group	PO499-01	BALLYBEG	SW11	357			359			231			256			N/R			234		
Littleton Group	PO499-01	BALLYBEG	SW13	396			441			356			442			N/R			167		
Littleton Group	PO499-01	LANESPARK	SW14	340			450			269			350			174			300		
Littleton Group	PO499-01	LANESPARK	SW15	119			439			145			335			165			210		
Littleton Group	PO499-01	LANESPARK	SW16	306			396			76			141			54.9			56.6		
		Rainfall (mm) CLONOULTY_Clogher		178.5	82.5	136.2	137	83.7	131.3	62.1	155	93.9	74.9	50.9	42.8	50.7	44.7	64.6	51.5	70.3	79.6

PCAS SW Sampling Scheme				COD	COD	COD	COD	COD	COD	COD	COD	COD	COD	COD	COD	COD	COD	COD	COD	COD	COD
Bog Group	Licence No	Bog Name	SW Code GIS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
				1/7/23	1/8/23	1/9/23	1/10/23	1/11/23	1/12/23	1/1/24	1/2/24	1/3/24	1/4/24	1/5/24	1/6/24	1/7/24	1/8/24	1/9/24	1/10/24	1/11/24	1/12/24
Littleton Group	PO499-01	BALLYBEG	SW11	84			75			56			90			N/R			74		
Littleton Group	PO499-01	BALLYBEG	SW13	77			98			76			116			N/R			51		
Littleton Group	PO499-01	LANESPARK	SW14	80			103			66			76			41			87		
Littleton Group	PO499-01	LANESPARK	SW15	39			126			43			74			37			62		
Littleton Group	PO499-01	LANESPARK	SW16	81			114			14			40			10			28		
			COD Trigger Level	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
		Rainfall (mm) CLONOULTY_Clogher		178.5	82.5	136.2	137	83.7	131.3	62.1	155	93.9	74.9	50.9	42.8	50.7	44.7	64.6	51.5	70.3	79.6

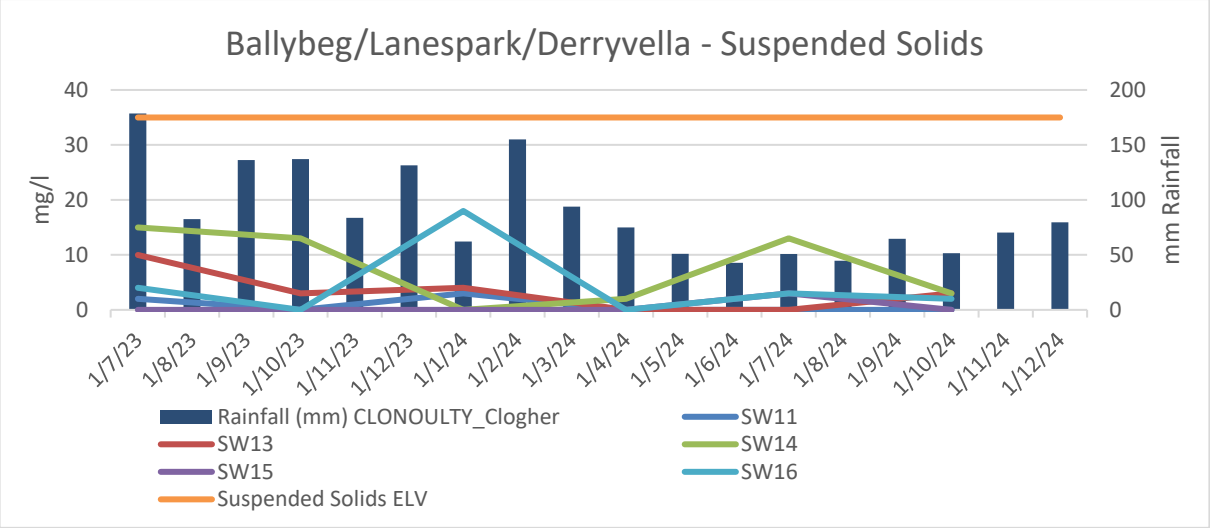
PCAS SW Sampling Scheme				pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
Bog Group	Licence No	Bog Name	SW Code GIS	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units	pH Units
				1/7/23	1/8/23	1/9/23	1/10/23	1/11/23	1/12/23	1/1/24	1/2/24	1/3/24	1/4/24	1/5/24	1/6/24	1/7/24	1/8/24	1/9/24	1/10/24	1/11/24	1/12/24
Littleton Group	PO499-01	BALLYBEG	SW11	7			7.1			7.2			7.3			N/R			7.2		
Littleton Group	PO499-01	BALLYBEG	SW13	7.3			7.1			7			7.1			N/R			7.5		
Littleton Group	PO499-01	LANESPARK	SW14	7.2			6.9			7.2			7.2			6.9			7.6		
Littleton Group	PO499-01	LANESPARK	SW15	7.7			6.9			7.5			7.5			7.4			7.4		
Littleton Group	PO499-01	LANESPARK	SW16	7.2			7.1			7.9			7.7			7.8			7.8		
		Rainfall (mm) CLONOULTY_Clogher		178.5	82.5	136.2	137	83.7	131.3	62.1	155	93.9	74.9	50.9	42.8	50.7	44.7	64.6	51.5	70.3	79.6

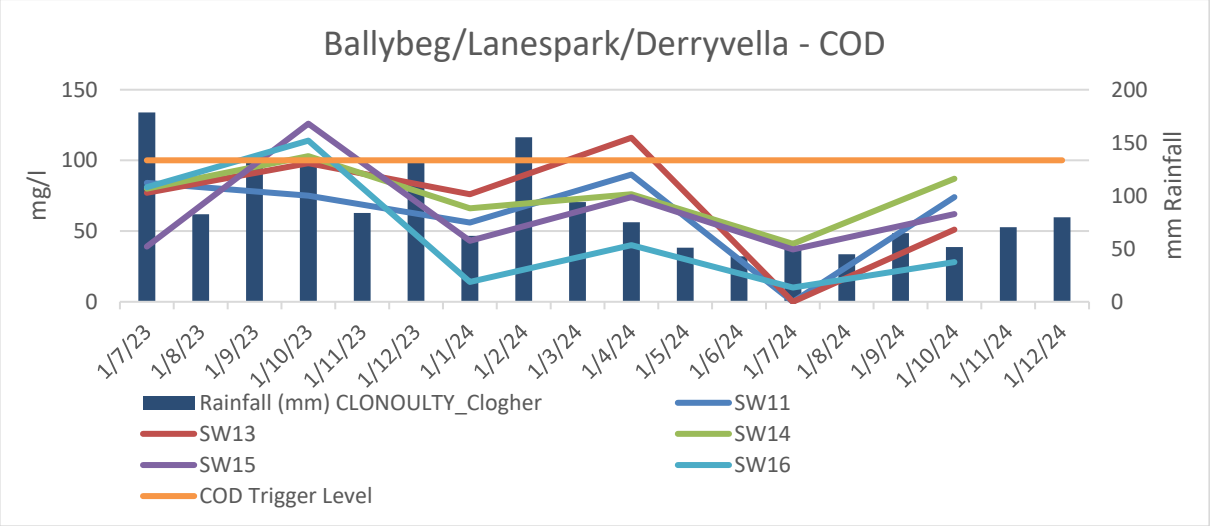
PCAS SW Sampling Scheme				TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P	TP as P
Bog Group	Licence No	Bog Name	SW Code GIS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
				1/7/23	1/8/23	1/9/23	1/10/23	1/11/23	1/12/23	1/1/24	1/2/24	1/3/24	1/4/24	1/5/24	1/6/24	1/7/24	1/8/24	1/9/24	1/10/24	1/11/24	1/12/24
Littleton Group	PO499-01	BALLYBEG	SW11	<0.05			<0.05			<0.05			<0.05			N/R			<0.05		
Littleton Group	PO499-01	BALLYBEG	SW13	<0.05			<0.05			<0.05			<0.05			N/R			<0.05		
Littleton Group	PO499-01	LANESPARK	SW14	0.07			<0.05			<0.05			<0.05			<0.05			0.05		
Littleton Group	PO499-01	LANESPARK	SW15	<0.05			<0.05			<0.05			<0.05			<0.05			<0.05		
Littleton Group	PO499-01	LANESPARK	SW16	<0.05			0.06			0.07			<0.05			<0.05			<0.05		
		Rainfall (mm) CLONOULTY_Clogher		178.5	82.5	136.2	137	83.7	131.3	62.1	155	93.9	74.9	50.9	42.8	50.7	44.7	64.6	51.5	70.3	79.6

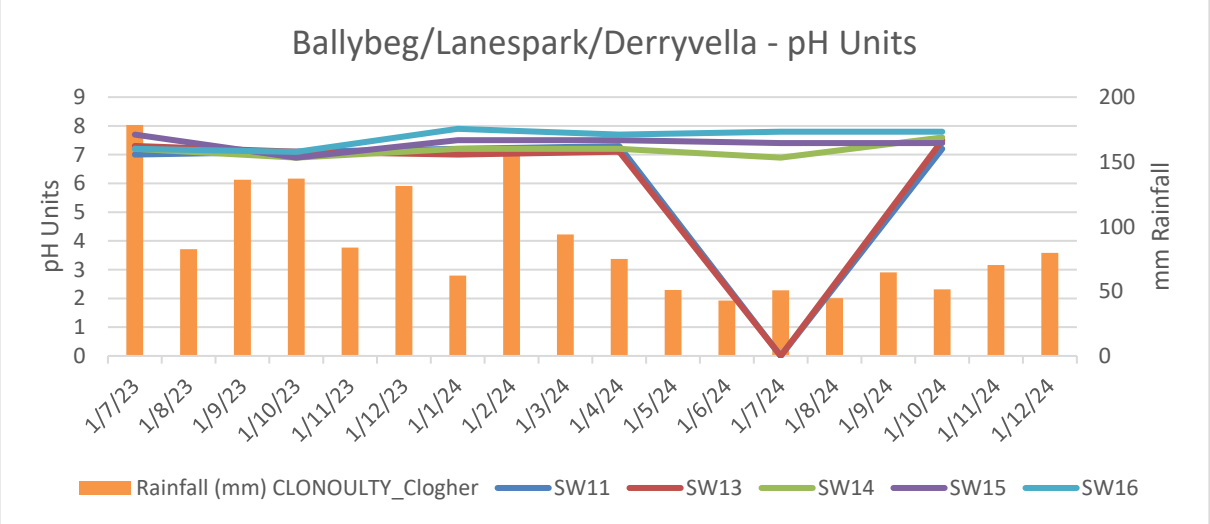
PCAS SW Sampling Scheme				TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS
Bog Group	Licence No	Bog Name	SW Code GIS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
				1/7/23	1/8/23	1/9/23	1/10/23	1/11/23	1/12/23	1/1/24	1/2/24	1/3/24	1/4/24	1/5/24	1/6/24	1/7/24	1/8/24	1/9/24	1/10/24	1/11/24	1/12/24
Littleton Group	PO499-01	BALLYBEG	SW11	87			224			217			202			N/R			257		
Littleton Group	PO499-01	BALLYBEG	SW13	310			378			245			207			N/R			335		
Littleton Group	PO499-01	LANESPARK	SW14	569			258			419			217			838			345		
Littleton Group	PO499-01	LANESPARK	SW15	469			268			202			139			327			246		
Littleton Group	PO499-01	LANESPARK	SW16	341			219			416			270			388			367		
		Rainfall (mm) CLONOULTY_Clogher		178.5	82.5	136.2	137	83.7	131.3	62.1	155	93.9	74.9	50.9	42.8	50.7	44.7	64.6	51.5	70.3	79.6

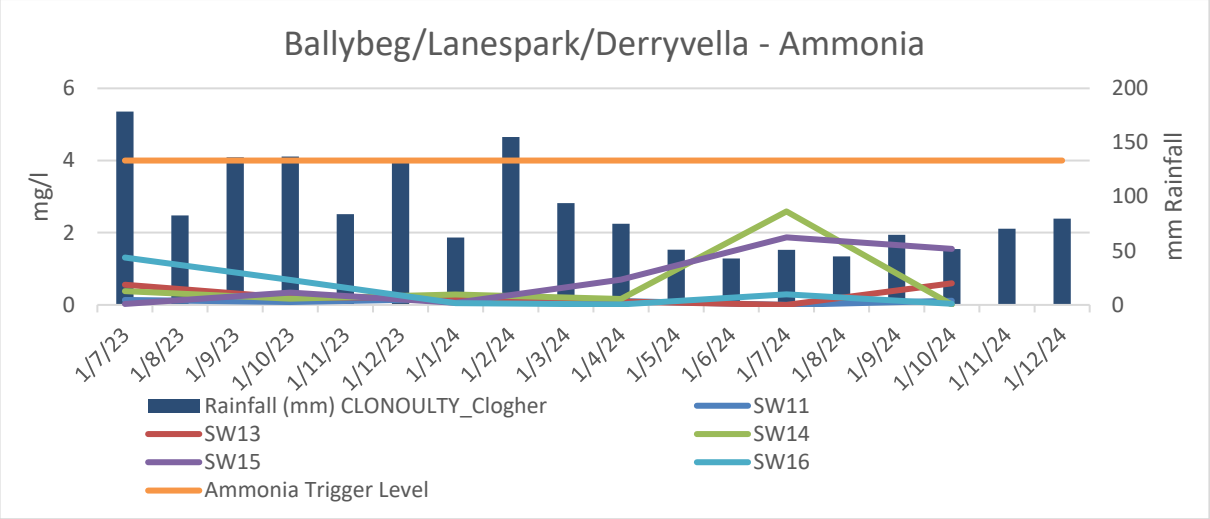
PCAS SW Sampling Scheme				Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N	Ammonia as N
Bog Group	Licence No	Bog Name	SW Code GIS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
				1/7/23	1/8/23	1/9/23	1/10/23	1/11/23	1/12/23	1/1/24	1/2/24	1/3/24	1/4/24	1/5/24	1/6/24	1/7/24	1/8/24	1/9/24	1/10/24	1/11/24	1/12/24
Littleton Group	PO499-01	BALLYBEG	SW11	0.135			0.076			0.169			0.102			N/R			0.111		
Littleton Group	PO499-01	BALLYBEG	SW13	0.557			0.198			0.214			0.088			N/R			0.595		
Littleton Group	PO499-01	LANESPARK	SW14	0.379			0.168			0.283			0.162			2.59			0.006		
Littleton Group	PO499-01	LANESPARK	SW15	0.026			0.338			0.055			0.697			1.87			1.55		
Littleton Group	PO499-01	LANESPARK	SW16	1.31			0.688			0.045			0.012			0.29			0.028		
			Ammonia Trigger Level	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
		Rainfall (mm) CLONOULTY_Clogher		178.5	82.5	136.2	137	83.7	131.3	62.1	155	93.9	74.9	50.9	42.8	50.7	44.7	64.6	51.5	70.3	79.6

PCAS SW Sampling Scheme				DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC	DOC
Bog Group	Licence No	Bog Name	SW Code GIS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
				1/7/23	1/8/23	1/9/23	1/10/23	1/11/23	1/12/23	1/1/24	1/2/24	1/3/24	1/4/24	1/5/24	1/6/24	1/7/24	1/8/24	1/9/24	1/10/24	1/11/24	1/12/24
Littleton Group	PO499-01	BALLYBEG	SW11	30			27.1			24.3			20.1			N/R			N/R		
Littleton Group	PO499-01	BALLYBEG	SW13	27.8			36.4			30.9			30.9			N/R					
Littleton Group	PO499-01	LANESPARK	SW14	31.4			32.7			28.6			28.6			17.6			27.3		
Littleton Group	PO499-01	LANESPARK	SW15	15.5			51.5			19.1			28.4			19.5			18.9		
Littleton Group	PO499-01	LANESPARK	SW16	29.7			42.4			8.59			14.3			8.75			7.38		
		Rainfall (mm) CLONOULTY_Clogher		178.5	82.5	136.2	137	83.7	131.3	62.1	155	93.9	74.9	50.9	42.8	50.7	44.7	64.6	51.5	70.3	79.6


Ballybeg/Lanespark/Derryvella - Suspended Solids
mg/l
mm Rainfall
Rainfall (mm) CLONOULTY_Clogher
SW11
SW13
SW14
SW15
SW16
Suspended Solids ELV


Ballybeg/Lanespark/Derryvella - COD
mg/l
mm Rainfall
Rainfall (mm) CLONOULTY_Clogher
SW11
SW13
SW14
SW15
SW16
COD Trigger Level


Ballybeg/Lanespark/Derryvella - pH Units
pH Units
mm Rainfall
Rainfall (mm) CLONOULTY_Clogher
SW11
SW13
SW14
SW15
SW16


Ballybeg/Lanespark/Derryvella - Ammonia
mg/l
mm Rainfall
6
4
2
0
200
150
100
50
0
1/7/23
1/8/23
1/9/23
1/10/23
1/11/23
1/12/23
1/1/24
1/2/24
1/3/24
1/4/24
1/5/24
1/6/24
1/7/24
1/8/24
1/9/24
1/10/24
1/11/24
1/12/24
Rainfall (mm) CLONOULTY_Clogher
SW11
SW13
SW14
SW15
SW16
Ammonia Trigger Level

APPENDIX XIV: STOCKPILE DECOMMISSIONING PROCEDURE

Scope
All IPC licensed peatlands with residual peat stockpiles requiring decommissioning and rehabilitation, as required by Condition 10.

The aim of this Stockpile Decommissioning Procedure is to stabilise any remaining stockpiles by depositing the peat in the two drains located immediately adjacent to the stockpile field, enabling the re-shaping of the stockpile to facilitate stabilization and revegetation.

Condition 10:
10.1 Following termination of use or involvement of all or part of the site in the licensed activity, the licensee shall:

10.1.1 Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

Procedure:

1. Strip any remaining stockpile protection and remove using the poly wrapper for recycling.
2. Ensure the silt pond servicing this pile field catchment has been cleaned within the last six months as per condition 6.8, and visually inspected as per condition 6.7, prior to any pile decommissioning.
3. Where stockpiles occur within areas planned for rehabilitation, such planned rehabilitation measures (regular drain blocking) will be implemented in advance of any stockpile decommissioning, with priority given to the required adjacent stockpile field drains.
4. Once the rehabilitation measure above has been completed, proceed to reprofile the stockpile as per below.
5. Using suitable available excavator/dozer to make a safe ramp up onto the end of the pile.
6. Track up onto the pile and establish a safe level base.
7. Using the machine to reduce and reprofile the pile height and deposit into the adjoining pile field drains. The residual height to be determined based on stockpile size and area required to reprofile.
8. Work along the pile using this method until reaching the pile end.
9. Using a suitable machine, track the peat into the pile field drain along both sides of the pile, ensuring the final level is below the existing drain blocks and any damage to existing drain blocks avoided.
10. If required, use a suitable machine to track along the top of the reprofiled stockpile to level and flatten the profile to reduce the runoff gradient.
11. Fertiliser application and any grass seed mix should be applied to each stockpile following completion of the above steps, to accelerate the stabilisation.

Ballybeg/Lanespark/Derryvella Bog Rehab Plan GIS Map Book 2025

Document Control Sheet	
Document Name:	Ballybeg/Lanespark/Derryvella Bog Rehab Plan GIS Map Book 2025
Document File Path:	
Document Status:	**Final v1.0**

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	1	1	0	0	15	0

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Name(s):	BG	ML	CC
Date:	29/04/2025	29/04/2025	29/04/2025
Rev. 1.0	**Author(s):**	**Checked By:**	**Approved By:**
Name(s):	BG	ML	CC
Date:	27/05/2025	27/05/2025	27/05/2025

BnM would like to thank and acknowledge RPS Consultants for their input into this document and the provision of data for inclusion in these maps.

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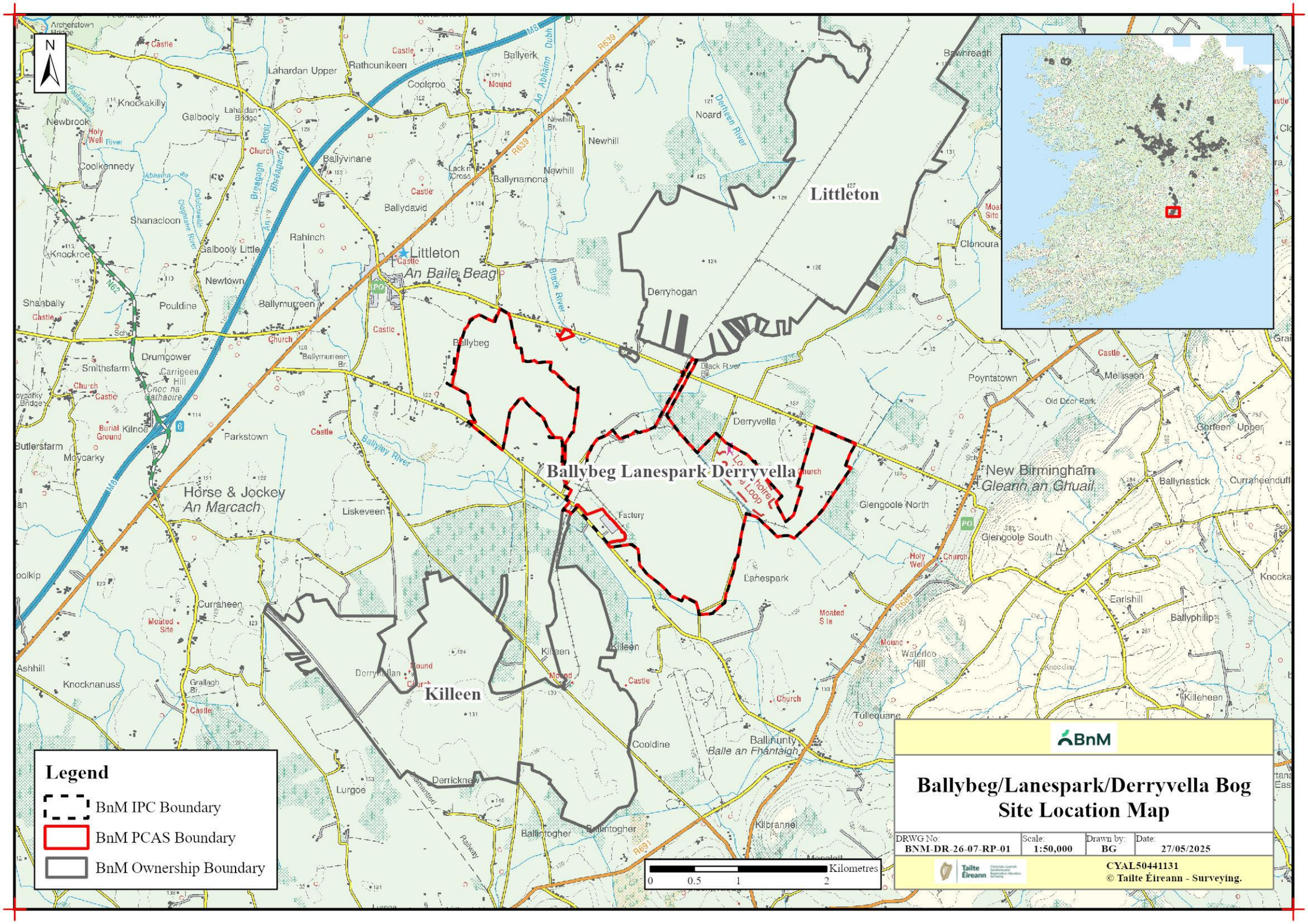
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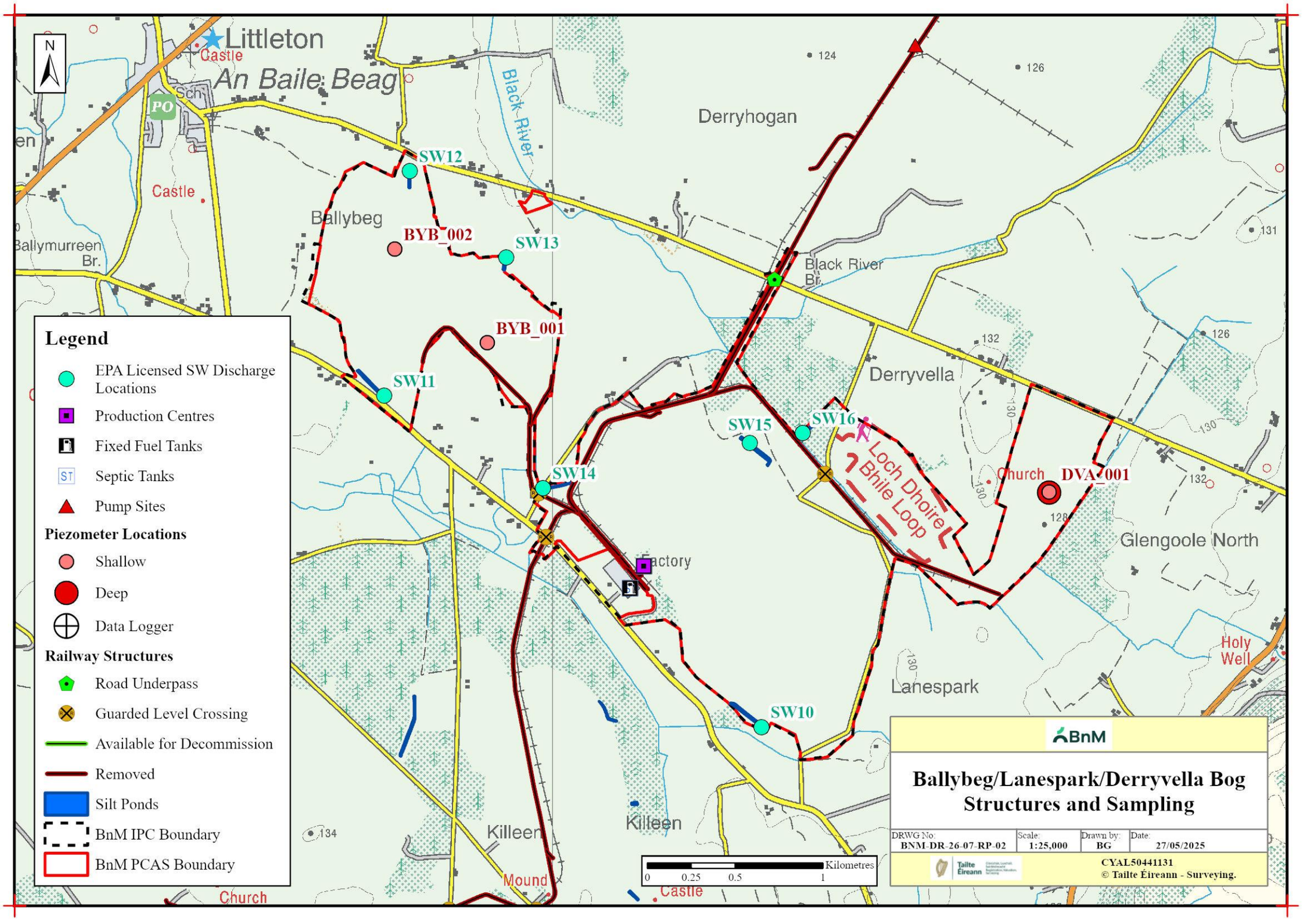
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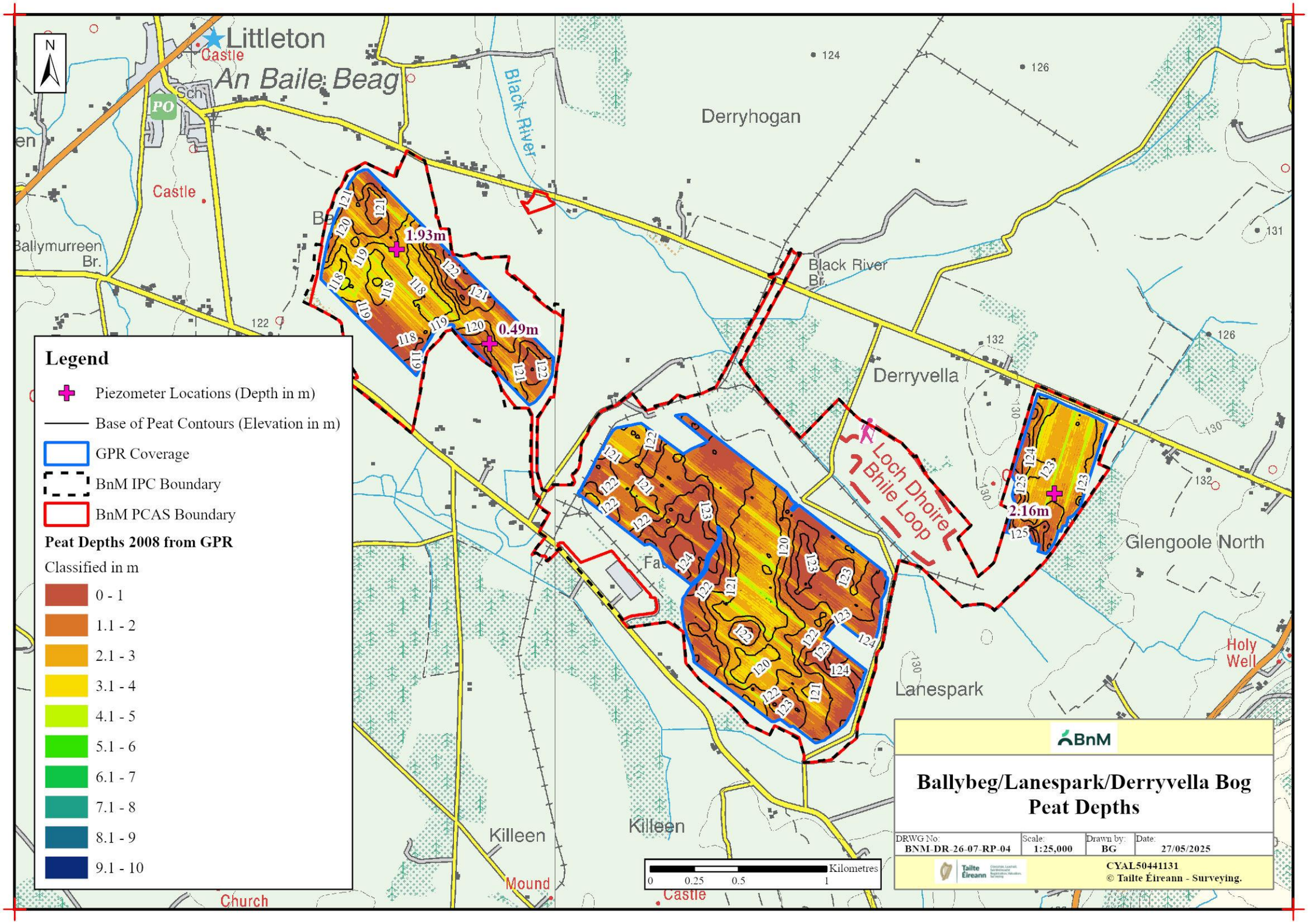
Bog Site Information Maps

BNM-DR-26-07-RP-01: Site Location Map

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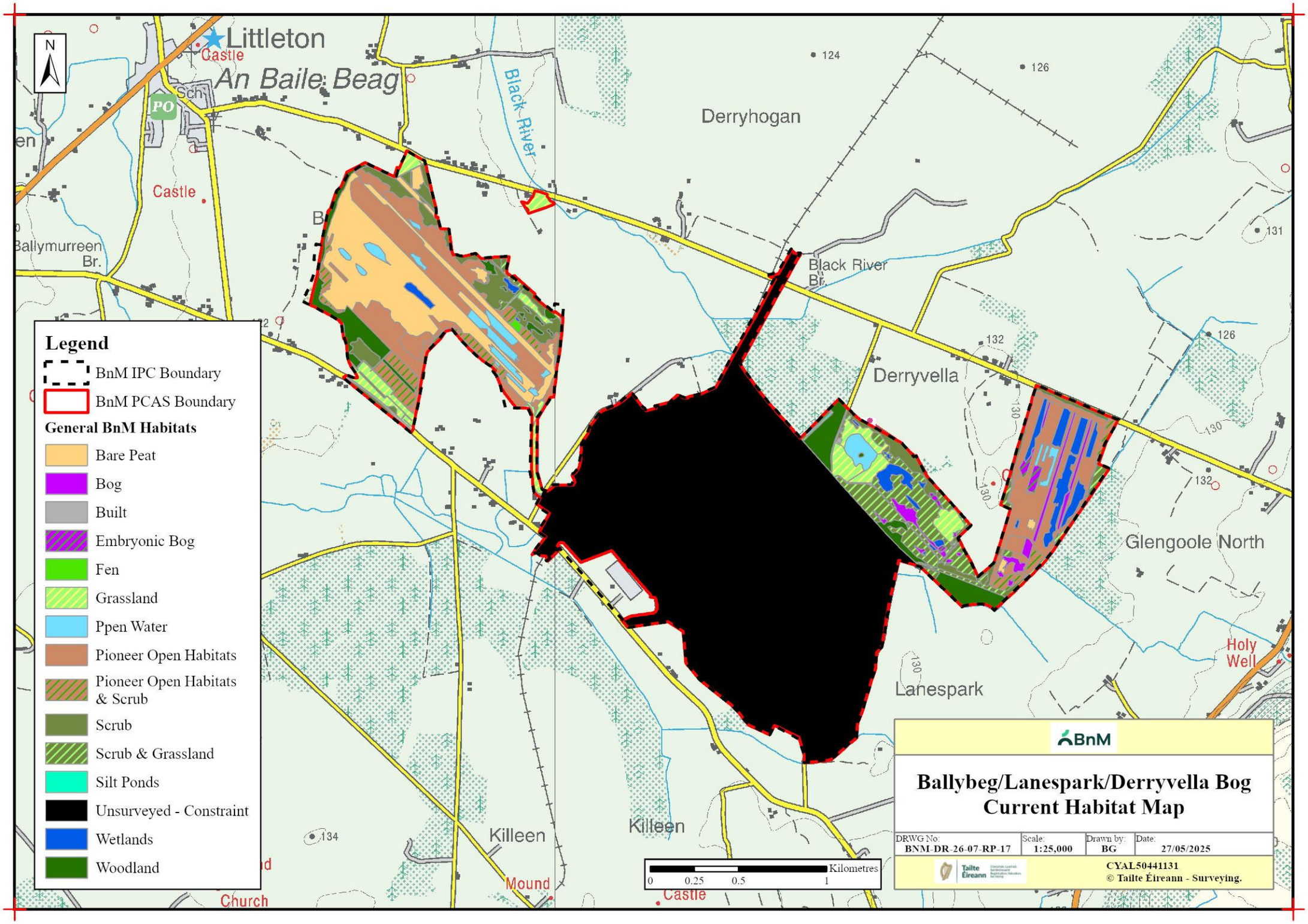



N
Littleton
An Baile Beag
Castle
PO
Sch
Castle
Ballymurreen Br.
Ballybeg
Black River
Derryhogan
Black River Br.
Derryvella
Loch Dhoire
Bhile Loop
Church
DVA_001
Glengoole North
Holy Well
Lanespark
Killeen
Killeen
Mound
Church
Castle
Factory
SW10
SW11
SW12
SW13
SW14
SW15
SW16
BYB_001
BYB_002
124
126
131
132
130
128
134
Legend
EPA Licensed SW Discharge Locations
Production Centres
Fixed Fuel Tanks
Septic Tanks
Pump Sites
Piezometer Locations
Shallow
Deep
Data Logger
Railway Structures
Road Underpass
Guarded Level Crossing
Available for Decommission
Removed
Silt Ponds
BnM IPC Boundary
BnM PCAS Boundary
0 0.25 0.5 1 Kilometres
BnM
Ballybeg/Lanespark/Derryvella Bog
Structures and Sampling
DRWG No: BNM-DR-26-07-RP-02
Scale: 1:25,000
Drawn by: BG
Date: 27/05/2025
CYAL50441131
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Littleton
An Baile Beag
Castle
Derryhogan
Black River
Black River Br.
Ballymurreen Br.
Derryvella
Glengoole North
Lanespark
Holy Well
Loch Dhoire Bhile Loop
Killeen
Mound
Church
1.93m
0.49m
2:16m
Legend
Piezometer Locations (Depth in m)
Base of Peat Contours (Elevation in m)
GPR Coverage
BnM IPC Boundary
BnM PCAS Boundary
Peat Depths 2008 from GPR
Classified in m
0 - 1
1.1 - 2
2.1 - 3
3.1 - 4
4.1 - 5
5.1 - 6
6.1 - 7
7.1 - 8
8.1 - 9
9.1 - 10
Kilometres
0 0.25 0.5 1
BnM
Ballybeg/Lanespark/Derryvella Bog
Peat Depths
DRWG No: BNM-DR-26-07-RP-04
Scale: 1:25,000
Drawn by: BG
Date: 27/05/2025
CYAL50441131
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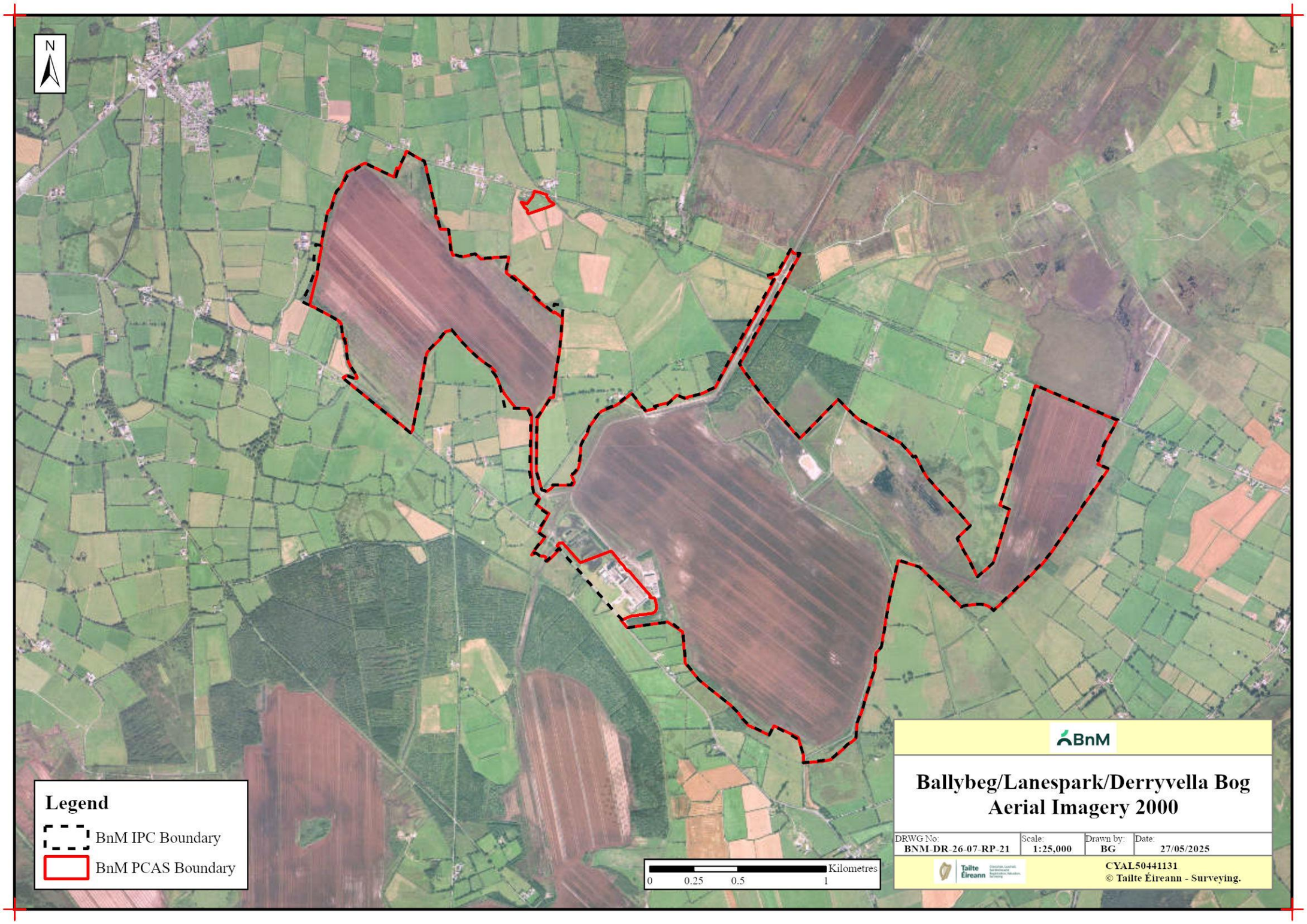
BNM-DR-26-07-RP-17: Current Habitat Map

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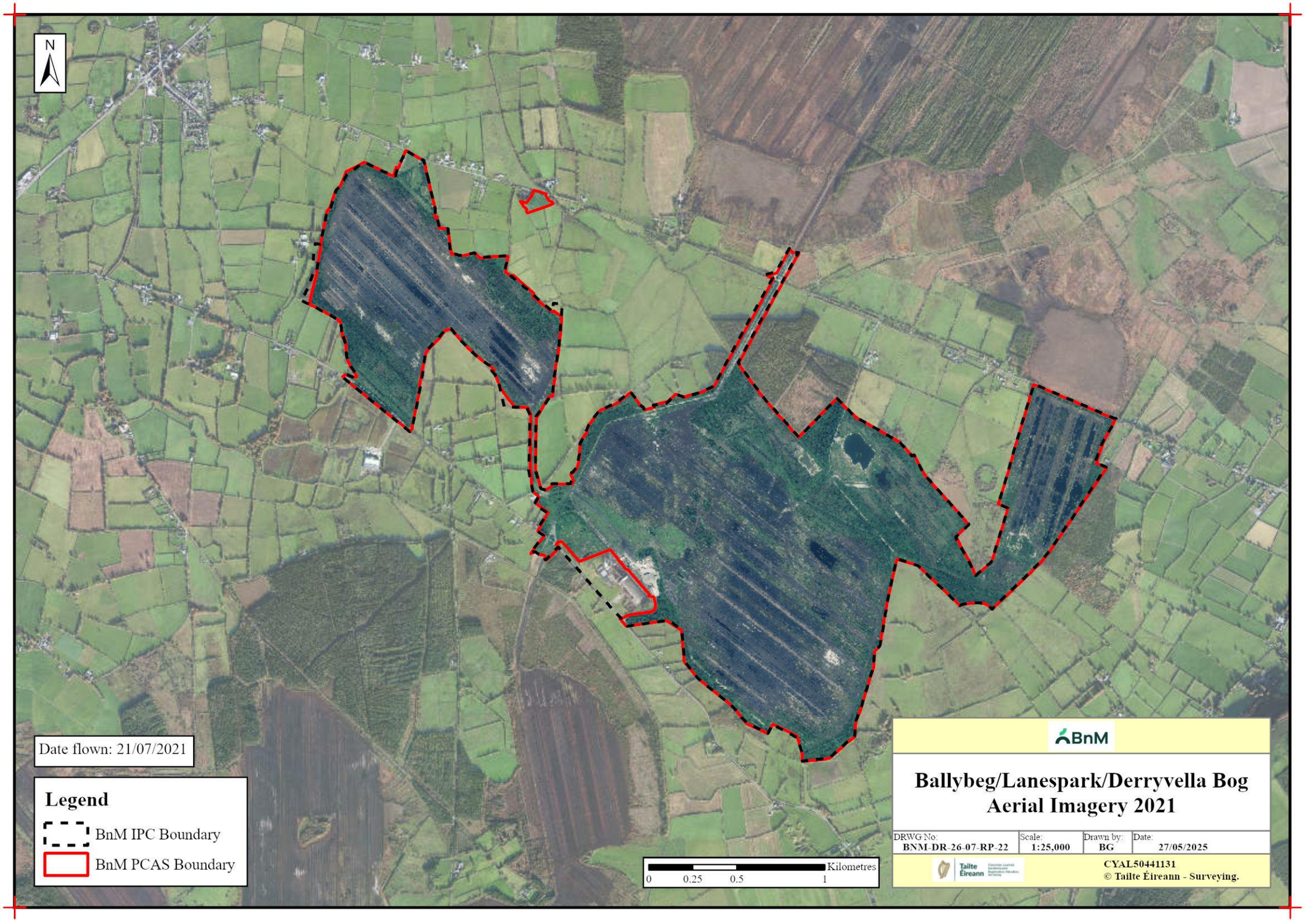
BNM-DR-26-07-RP-21: Aerial Imagery 2000

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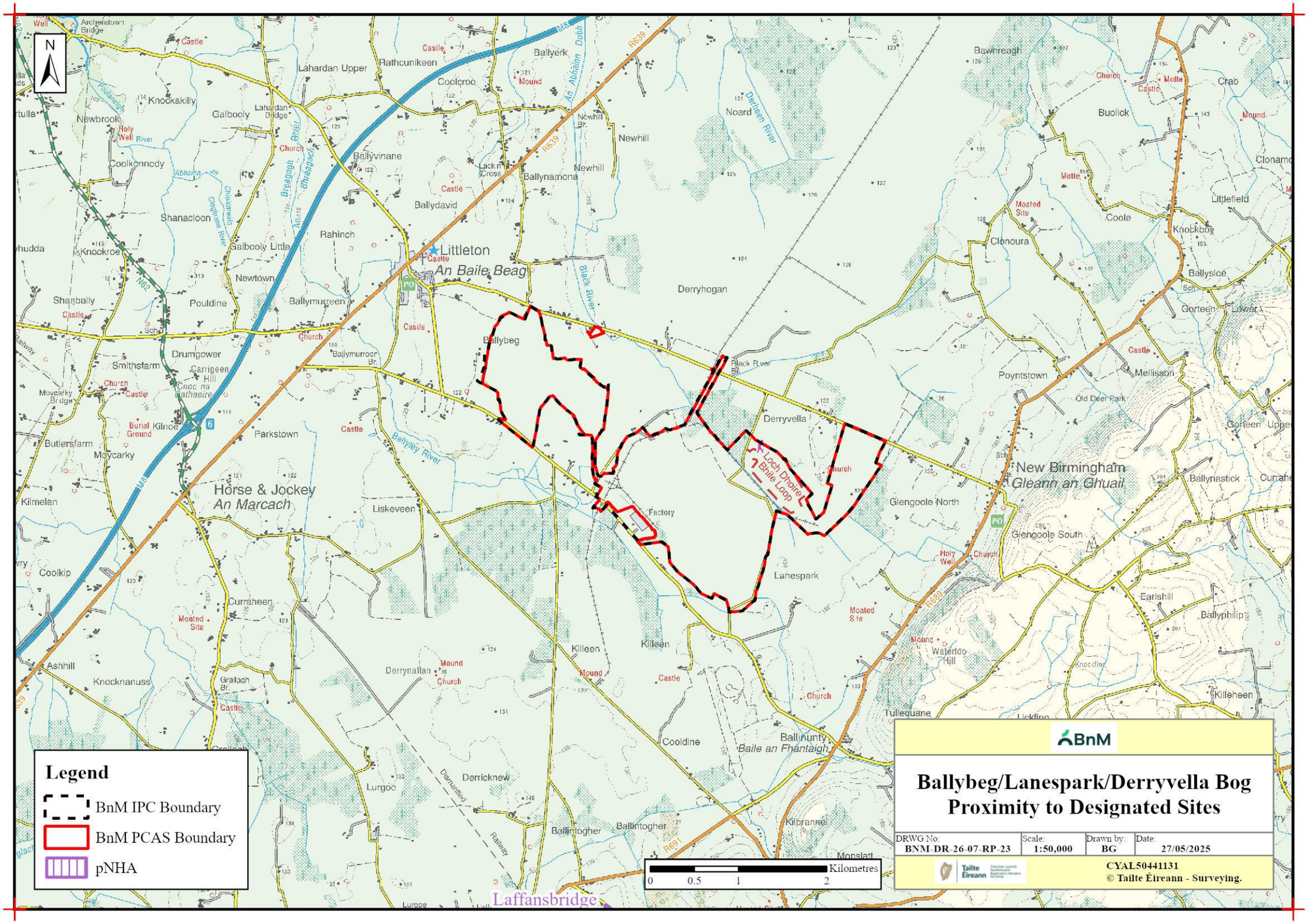
BNM-DR-26-07-RP-22: Aerial Imagery 2021

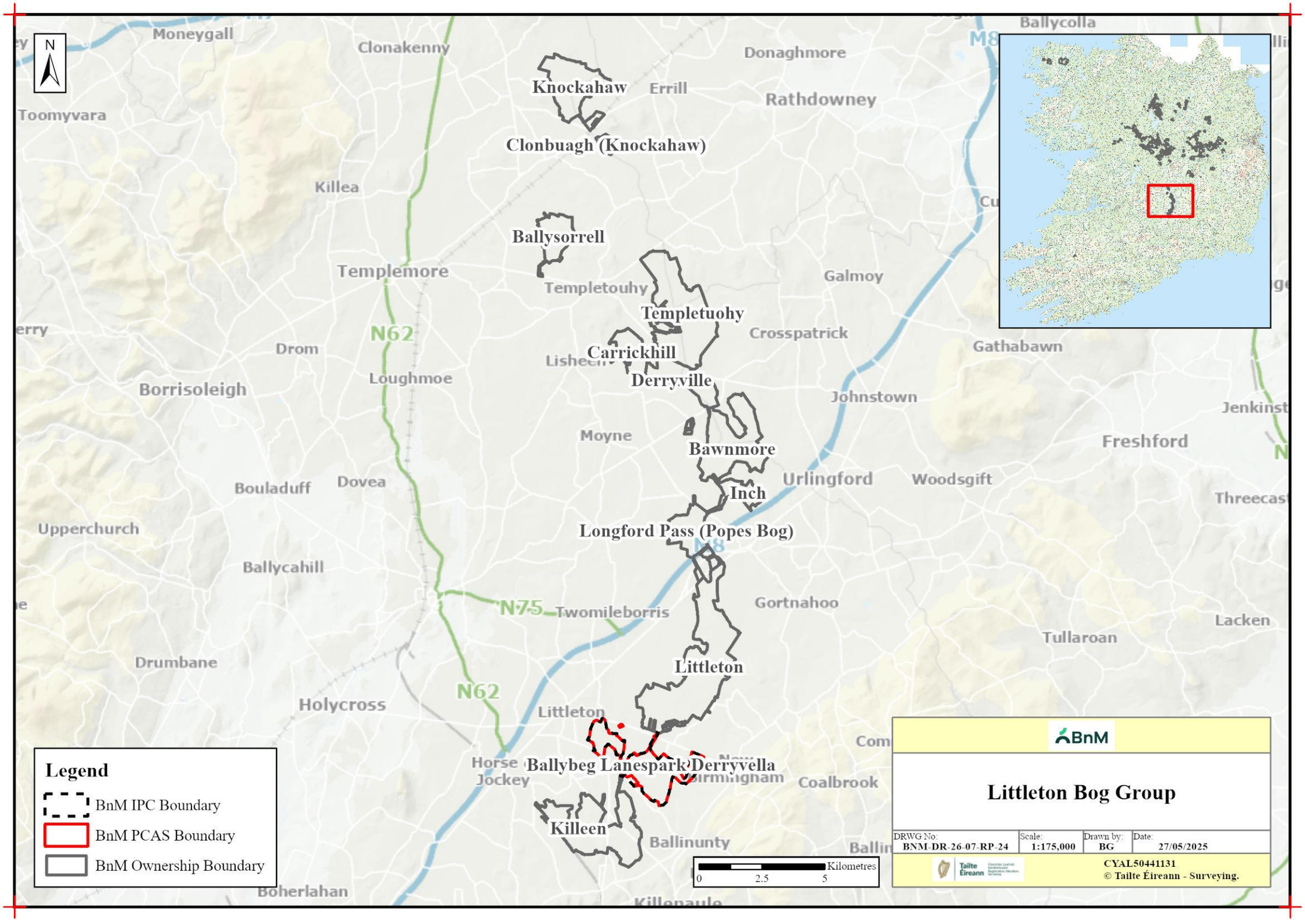
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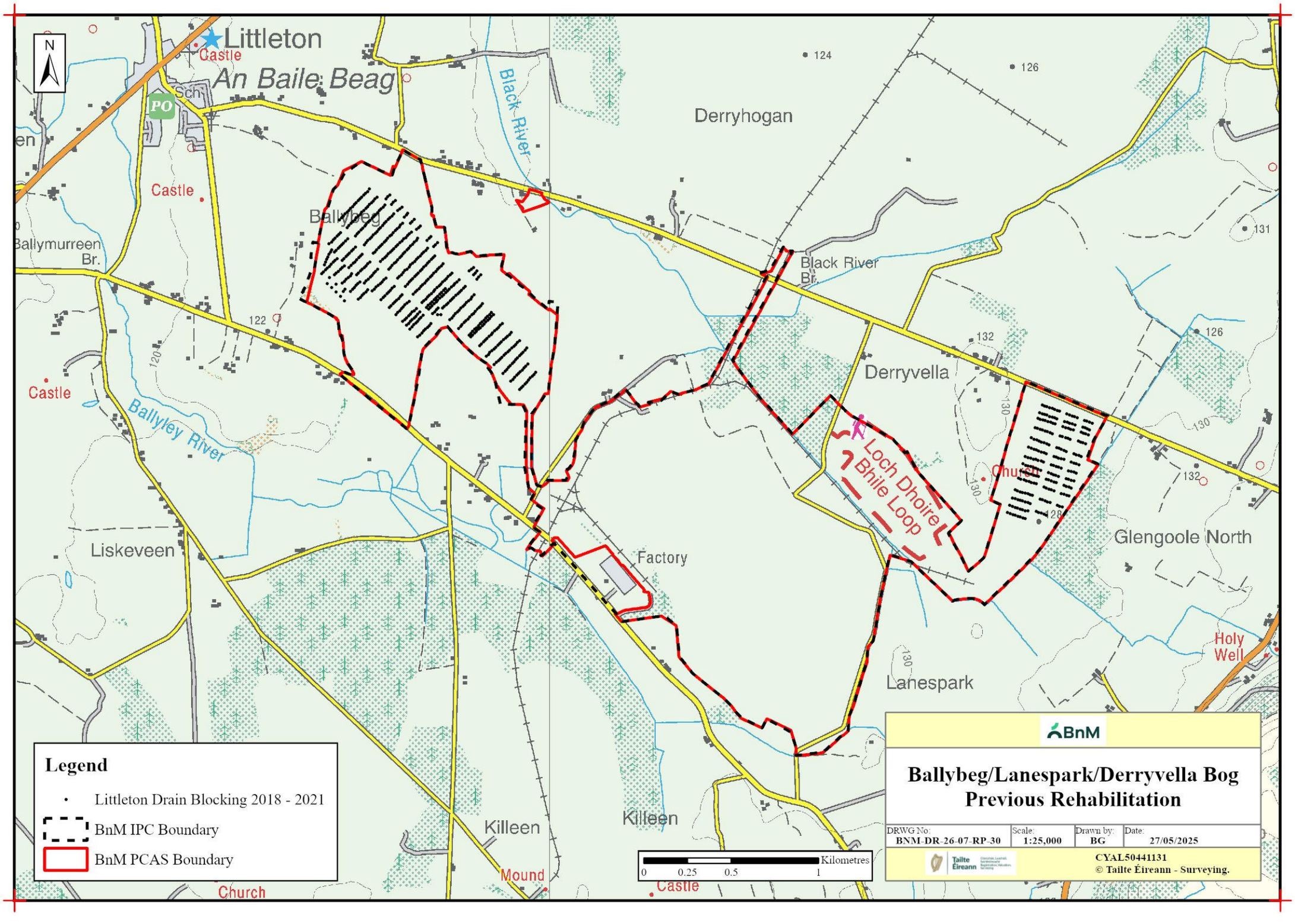


BNM-DR-26-07-RP-23: Proximity Designated Sites

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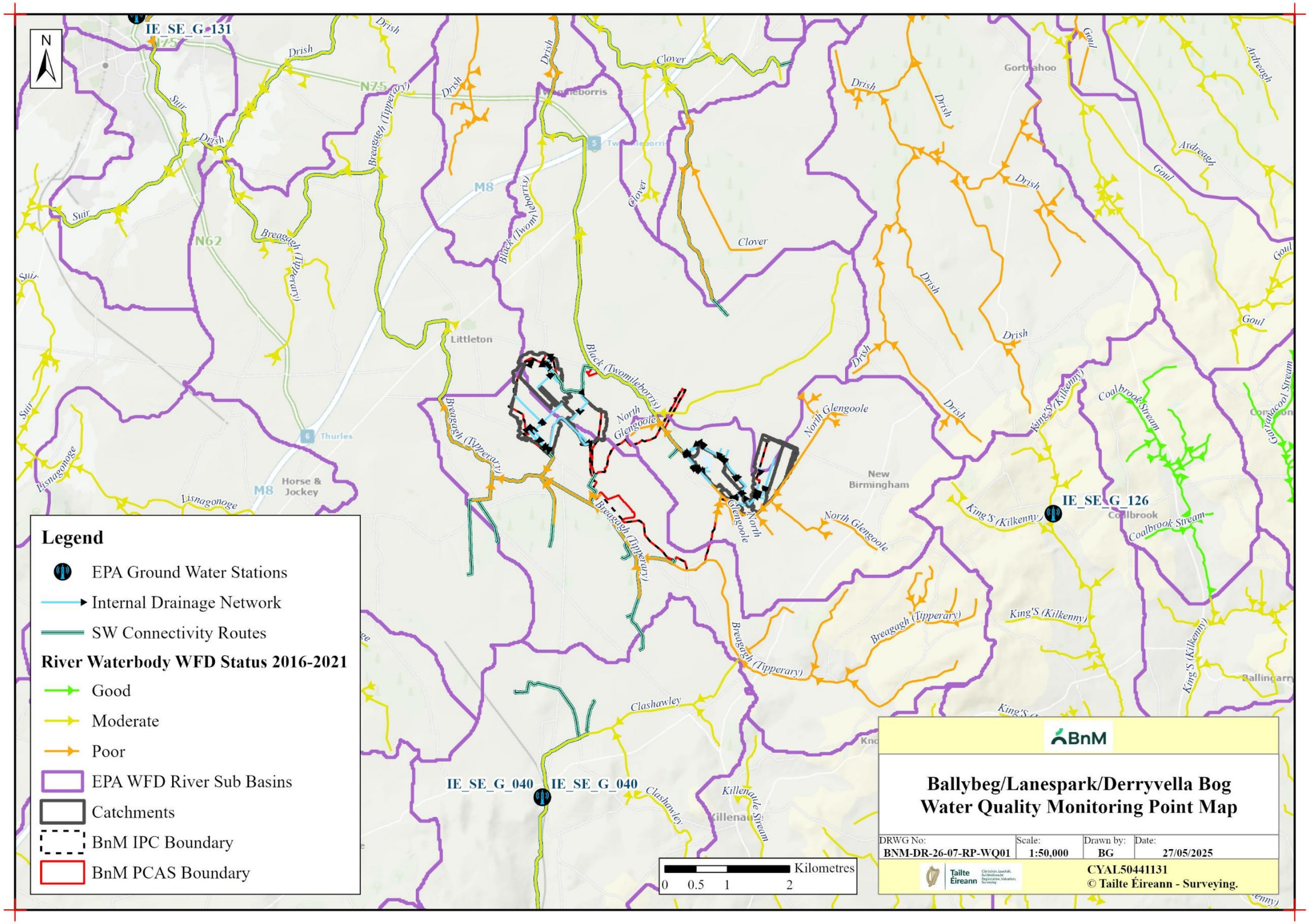

N
Moneygall
Clonakenny
Donaghmore
Ballycolla
Knockahaw
Errill
Rathdowney
Toomyvara
Clonbuagh (Knockahaw)
Killea
Ballysorrell
Templemore
Templetouhy
Templetuohy
Galmoy
N62
Crosspatrick
Drom
Carrickhill
Gathabawn
Derryville
Borrisoleigh
Loughmoe
Johnstown
Moyne
Bawnmore
Freshford
Bouladuff
Dovea
Urlingford
Woodsgift
Inch
Upperchurch
Longford Pass (Popes Bog)
N8
Ballycahill
N75
Twomileborris
Gortnahoo
Tullaroan
Drumbane
Littleton
Holycross
Littleton
Horse & Jockey
Ballybeg Lanespark
Derryvella
Coalbrook
Killeen
Ballinunty
Boherlahan
Legend
BnM IPC Boundary
BnM PCAS Boundary
BnM Ownership Boundary
0
2.5
5
Kilometres
BnM
Littleton Bog Group
DRWG No: BNM-DR-26-07-RP-24
Scale: 1:175,000
Drawn by: BG
Date: 27/05/2025
CYAL50441131
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N
Littleton
Castle
An Baile Beag
Sch
PO
Castle
Ballybeg
Black River
Derryhogan
124
126
131
Black River Br.
Ballymurreen Br.
122
120
Castle
Ballyley River
132
Derryvella
130
126
Loch Dhoire
Bhile Loop
Church
128
Glengoole North
Liskeveen
Factory
Holy Well
Lanespark
Killeen
Killeen
Mound
Church
Castle
Legend
Littleton Drain Blocking 2018 - 2021
BnM IPC Boundary
BnM PCAS Boundary
0 0.25 0.5 1 Kilometres
BnM
Ballybeg/Lanespark/Derryvella Bog
Previous Rehabilitation
DRWG No: BNM-DR-26-07-RP-30
Scale: 1:25,000
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Hydrology / Topography Maps

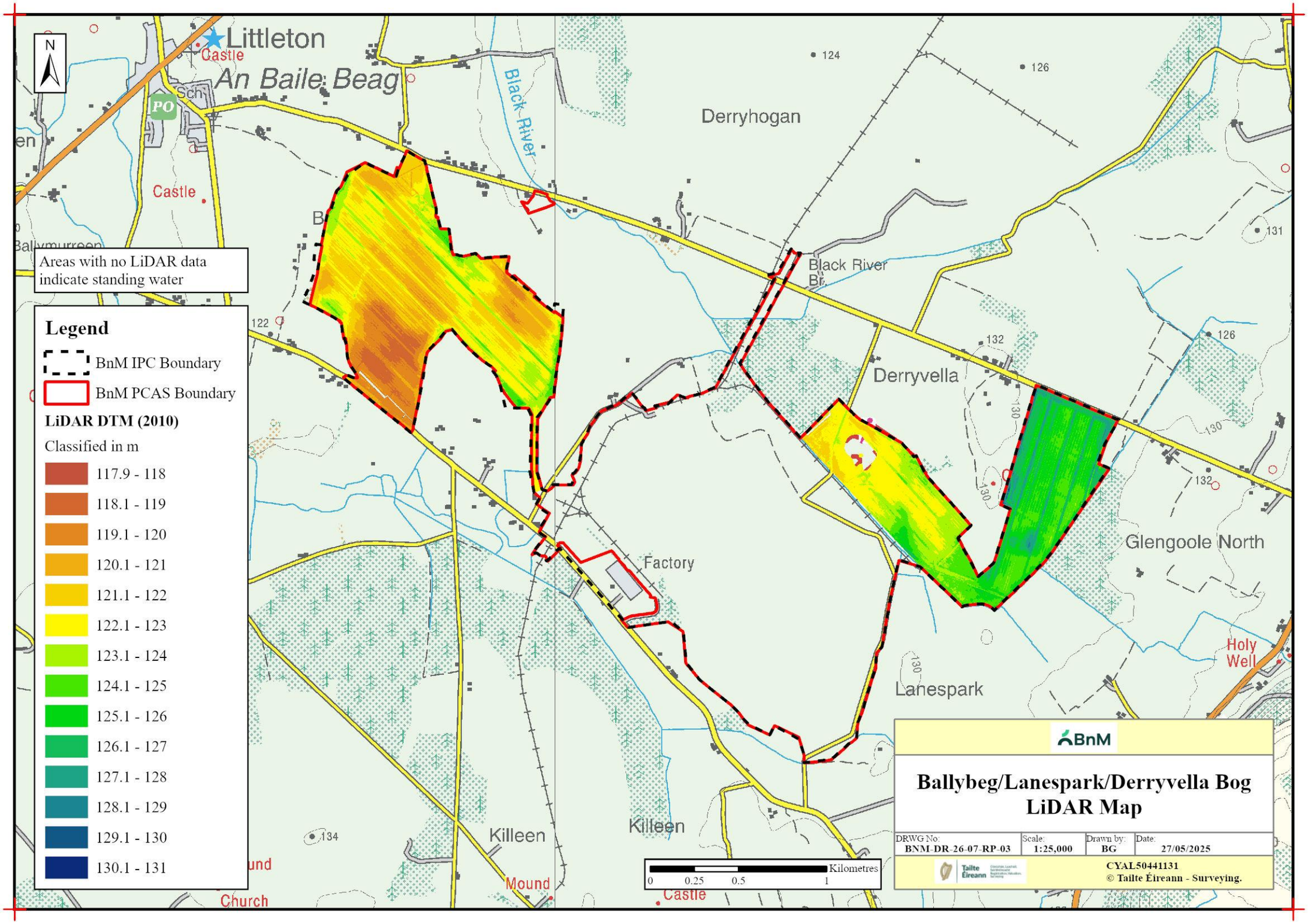
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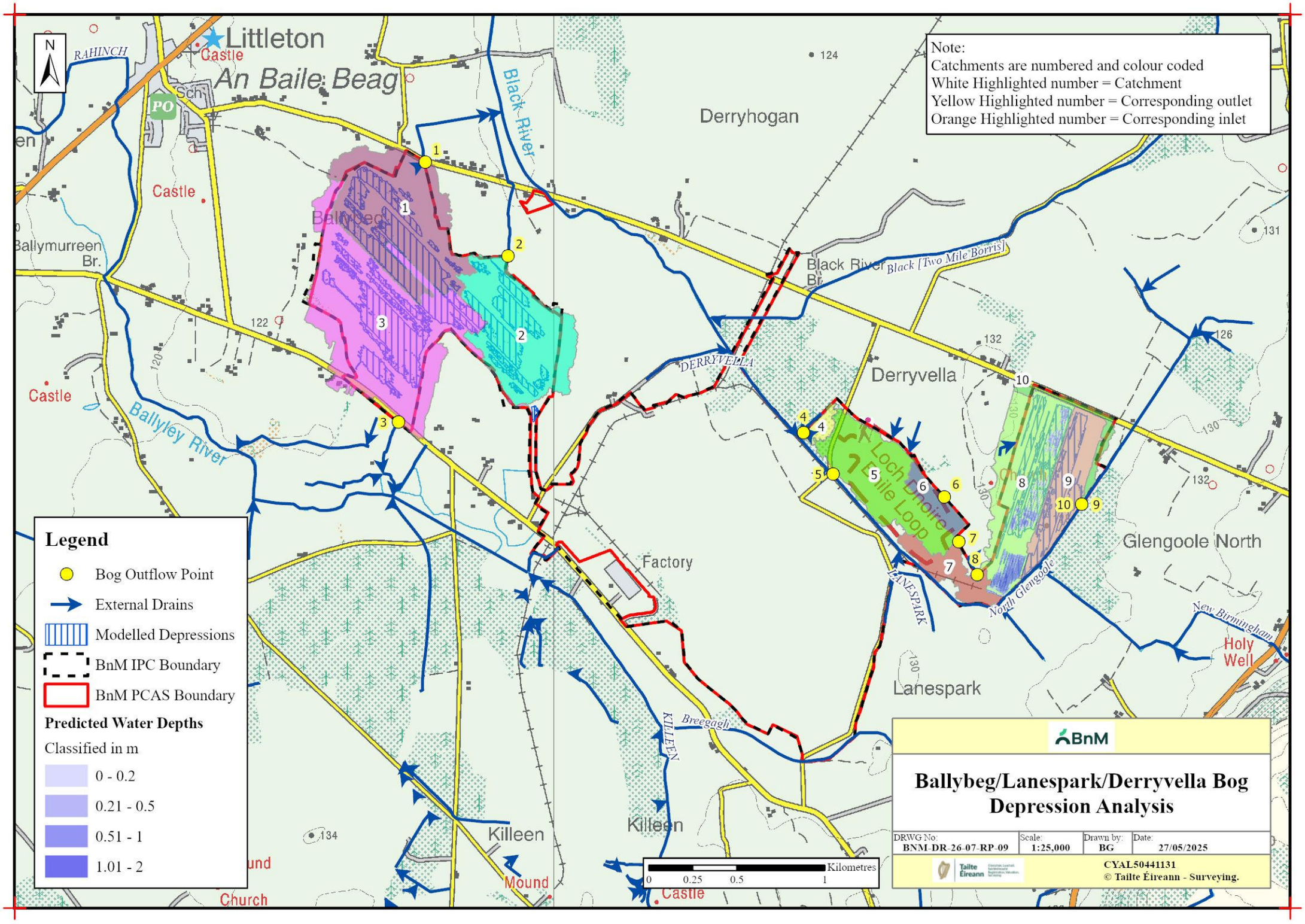
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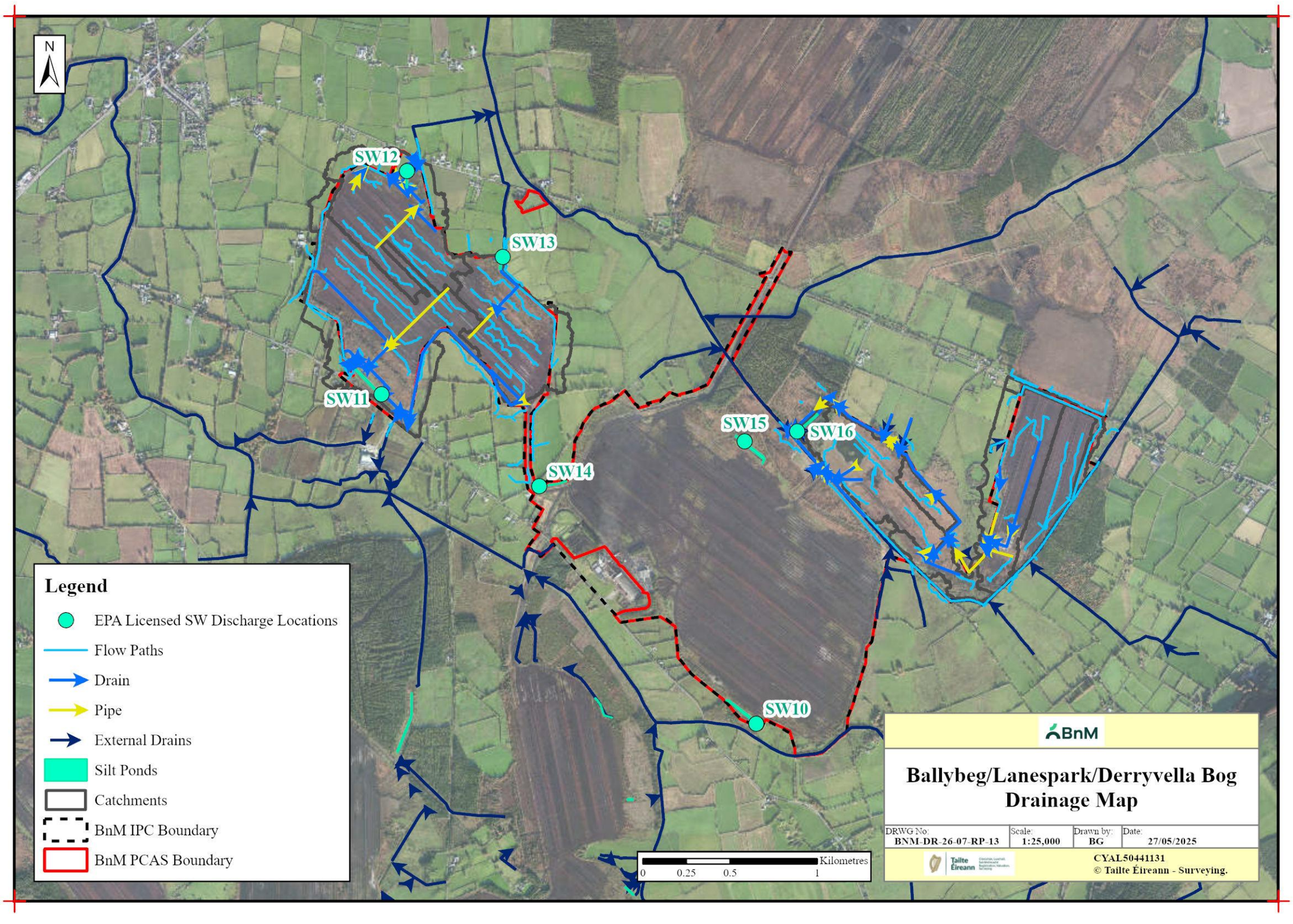
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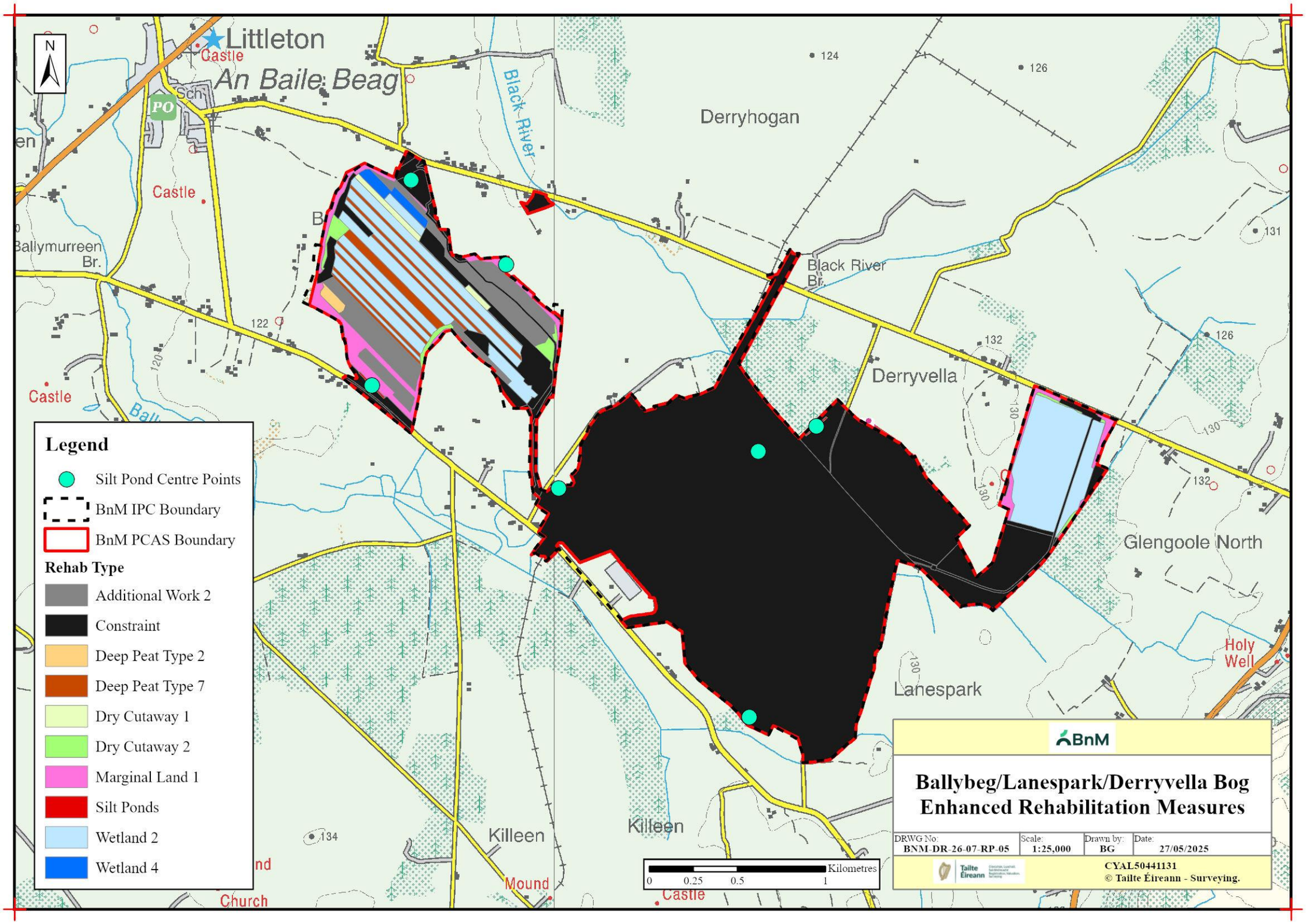

Note:
Catchments are numbered and colour coded
White Highlighted number = Catchment
Yellow Highlighted number = Corresponding outlet
Orange Highlighted number = Corresponding inlet
Littleton
An Baile Beag
Castle
RAHINCH
Derryhogan
Black River
Ballybeg
Ballymurreen Br.
Black River Br.
Black [Two Mile Borris]
DERRYVELLA
Derryvella
Ballyley River
Loch Dhoire
Glengoole North
Factory
LANESPARK
North Glengoole
New Birmingham
Holy Well
Lanespark
KILLEEN
Breegagh
Killeen
Mound
Church
Legend
Bog Outflow Point
External Drains
Modelled Depressions
BnM IPC Boundary
BnM PCAS Boundary
Predicted Water Depths
Classified in m
0 - 0.2
0.21 - 0.5
0.51 - 1
1.01 - 2
Kilometres
0 0.25 0.5 1
BnM
Ballybeg/Lanespark/Derryvella Bog
Depression Analysis
DRWG No: BNM-DR-26-07-RP-09
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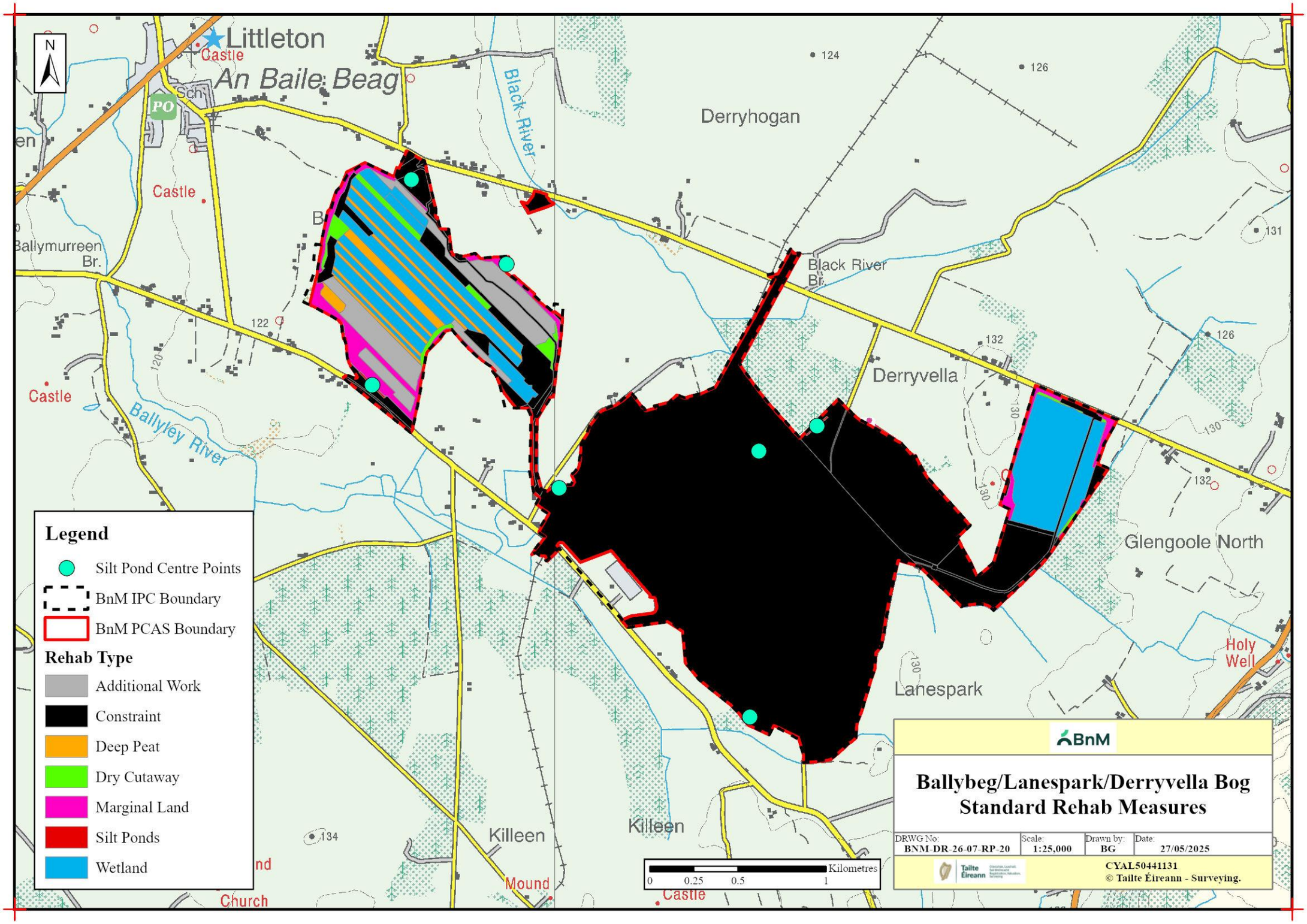
BNM-DR-26-07-RP-13: General Drainage Map

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Rehabilitation Maps


Littleton
An Baile Beag
Castle
PO
Sch
Black River
Derryhogan
Ballymurreen Br.
Black River Br.
Derryvella
Glengoole North
Lanespark
Holy Well
Killeen
Mound
Church
Legend
Silt Pond Centre Points
BnM IPC Boundary
BnM PCAS Boundary
Rehab Type
Additional Work 2
Constraint
Deep Peat Type 2
Deep Peat Type 7
Dry Cutaway 1
Dry Cutaway 2
Marginal Land 1
Silt Ponds
Wetland 2
Wetland 4
Kilometres
0 0.25 0.5 1
BnM
Ballybeg/Lanespark/Derryvella Bog
Enhanced Rehabilitation Measures
DRWG No: BNM-DR-26-07-RP-05
Scale: 1:25,000
Drawn by: BG
Date: 27/05/2025
CYAL50441131
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N
Littleton
Castle
An Baile Beag
Sch
PO
Castle
Ballymurreen Br.
Castle
Ballyley River
Black River
Derryhogan
124
126
131
Black River Br.
122
120
132
126
Derryvella
130
130
132
Glengoole North
Holy Well
130
Lanespark
134
Killeen
Killeen
Mound
Castle
Church
Legend
Silt Pond Centre Points
BnM IPC Boundary
BnM PCAS Boundary
Rehab Type
Additional Work
Constraint
Deep Peat
Dry Cutaway
Marginal Land
Silt Ponds
Wetland
Kilometres
0 0.25 0.5 1
BnM
Ballybeg/Lanespark/Derryvella Bog
Standard Rehab Measures
DRWG No: BNM-DR-26-07-RP-20
Scale: 1:25,000
Drawn by: BG
Date: 27/05/2025
Tailte Éireann
CYAL50441131
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Upper Left: 618005E 653859N m

Upper Left: 623464E 653859N m

N

W E

S

BnM Boundary

General Habitats 2018

Hab_code3

- bare peat
- bog
- built
- conifer plantation
- cutover bog
- fen
- grassland or agriculture
- gravel sub soil
- heather
- heather and scrub
- open water
- pioneer open cutaway habitats
- riparian
- scrub
- scrub & grassland
- scrub & pioneer open cutaway habitats
- temporary flooded areas
- wetlands
- wetlands & scrub
- woodland

Black River Br.

Derryvella

Tailte Éireann

Ballybeg Lanespark Derryvilla Habitat Map (2018)

DWG No.	Scale:	User:	Date:
BNM-ECO-15-03	1:13,329	LenihanM	14/05/2026

CYAL50510154
© Tailte Éireann – Surveying.

Upper Left: 618005E 650030N m

Lower Right: 623464E 650030N m

APPENDIX 2.2

Copy of Scoping Letters, Reports and Responses

APPENDIX 2.2

Copy of Scoping Letters, Reports and Responses

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Tipperary County Council
For the attention of the Environmental Department

customerservices@tipperarycoco.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, approximately 3km east of the village of Littleton and 10km east of Thurles. The proposed development is located on a bog group consisting of the Longford Pass, Littleton and Lanespark Bog.

This letter and enclosed scoping report is being issued to you as part of the consultation process for the project's Environmental Impact Assessment Report (EIAR). As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development, relevant to your area of expertise. We respectfully ask that you forward all responses before Friday the 5th of November 2021 to provide adequate time to consider all material. Your response may be forwarded by email or by post to the address below:

By Email: littletonwindfarm@ftco.ie

By Post: Eamon Hutton, Fehily Timoney and Company, Core House, Pouladuff Road, County Cork, T12 D773

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Yours sincerely,

Eamon Hutton

Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Tipperary County Council
For the attention of the Heritagel Department

customerservices@tipperarycoco.ie

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Tipperary County Council
Planning Department

planning@tipperarycoco.ie

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Encl.

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CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Tipperary County Council
For the attention of the Roads Department

customerservices@tipperarycoco.ie

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Eamon Hutton

Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Minister for Housing, Local Government & Heritage
Custom House, Dublin, D01 W6X0

minister@housing.gov.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Minister for Agriculture, Food and the Marine
Agriculture House
Kildare Street, D02 WK12

info@agriculture.gov.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, approximately 3km east of the village of Littleton and 10km east of Thurles. The proposed development is located on a bog group consisting of the Longford Pass, Littleton and Lanespark Bog.

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By Email: littletonwindfarm@ftco.ie

By Post: Eamon Hutton, Fehily Timoney and Company, Core House, Pouladuff Road, County Cork, T12 D773

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Yours sincerely,

Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Minister for Environment, Climate & Communications
29-31, Adelaide Road
Dublin 2, D02 X285

customer.service@decc.gov.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, approximately 3km east of the village of Littleton and 10km east of Thurles. The proposed development is located on a bog group consisting of the Longford Pass, Littleton and Lanespark Bog.

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Minister for Transport
Leeson Lane
Dublin 2, D02 TR60

info@transport.gov.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Minister for Tourism, Culture, Arts, Gaeltacht, Sport and Media
23, Kildare Street
Dublin 2, D02 TD30

ministers.office@tcagsm.gov.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Southern Regional Assembly
Assembly House
O' Connell Street
Waterford, X91 F8PC

info@southernassembly.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Inland Fisheries Ireland (IFI)
Anglesea Street
Clonmel
Co. Tipperary, E91 RD25

clonmel@fisheriesireland.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8, D08 DK10

info@tii.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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for and on behalf of **Fehily Timoney and Company**

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FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Environmental Protection Agency (EPA)
Curraleigh
Inniscarra, Co. Cork

info@epa.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

The Heritage Council
Áras na hOidhreachta
Church Lane
Kilkenny, R95 X264

mail@heritagecouncil.ie

Our Ref: P20-211/Lett/EH/MG

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

An Taisce
An Taisce Advocacy
Tailors' Hall
Back Lane, Dublin 8, D08 X2A3

advocacy@antaisce.org

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

An Chomhairle Ealaíon (Arts Council)
The Arts Council
70 Merrion Square
Dublin 2, D02 NY52

planning@artscouncil.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Fáilte Ireland
88 – 95, Amiens Street
Dublin 1, D01 WR86

planning.applications@failteireland.ie

Our Ref: P20-211/Lett/EH/MG

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Irish Aviation Authority
The Times Building
11-12 D'Olier Street, Dublin 2.

info@iaa.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Office of Public Works
Head Office, Jonathan Swift Street
Trim, Co. Meath C15 NX36

opwcsc@opw.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Irish Water
PO Box 860, South City Delivery office
Cork City

planning@water.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

An Bord Pleanála
64, Marlborough Street
Rotunda, Dublin 1, D01 V902

sids@pleanala.ie.

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

An Garda Siochána - Thurles Branch
Thurles Garda Station
Sleive Na Mon Road
Thurles, Co. Tipperary, E41 DW67

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Bat Conservation Ireland
Carmichael House
4-7, North Brunswick Street
Dublin 7, D07 RHA8

admin@batconservationireland.org

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Biodiversity Ireland
Beechfield House
Waterford Institute of Technology West Campus
Carriganore, Co. Waterford

info@biodiversityireland.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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By Email: littletonwindfarm@ftco.ie

By Post: Eamon Hutton, Fehily Timoney and Company, Core House, Pouladuff Road, County Cork, T12 D773

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Yours sincerely,

Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Birdwatch Ireland
Unit 20, Block D, Bullford Business Campus
Kilcoole, Greystones,
Co. Wicklow, A63 RW83

info@birdwatchireland.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, approximately 3km east of the village of Littleton and 10km east of Thurles. The proposed development is located on a bog group consisting of the Longford Pass, Littleton and Lanespark Bog.

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Butterfly Conservation Ireland
Registered office: Pagestown
Maynooth, Co. Kildare

conservation.butterfly@gmail.com

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Commission for Regualtion of Utilities
The Exchange
Belgard Square North
Tallaght, Dublin 24

planning@cru.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Eirgrid
Block 2, The Oval
160, Shelbourne Road
Dublin 4, D04 FW28

info@eirgrid.com

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Environmental Sciences Association of Ireland

info@esaiweb.org

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

ESB Networks
Sarsfield Road
Wilton, Cork, T12 E367

esbnetworks@esb.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Forestry Service
Fisheries
Clogheen
Clonakilty, Co. Cork. P85 TX47

forestryinfo@agriculture.gov.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Gas Networks Ireland
Rock Borough Road
Ballintemple, Cork, T12 RX96

networksinfo@gasnetworks.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Geographical Society of Ireland

secretary@geographicalsocietyireland.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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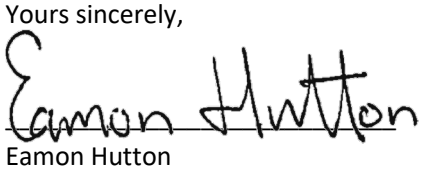
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FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Geological Survey Ireland (GSI)
Beggars Bush
Haddington Road, Dublin, D04 K7X4

clare.glanville@gsi.ie

Our Ref: P20-211/Lett/EH/MG

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Eamon Hutton

Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Health Service Executive (HSE)
Estates Department
Lacken, Dublin Road
Kilkenny

ed.fennell@hse.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Irish Environmental Network
MACRO Centre
1, Green Street, Dublin 7

office@ien.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Irish Peatland Conservation Council
Bog of Allen Nature Centre
Lullymore
Rathangan, Co. Kildare, R51 V293

bogs@ipcc.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Irish Raptor Study Group

chairman@irsg.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

The Irish Wildlife Trust

8, New Cabra Road
Dublin 7, D07T1W2

info@iwt.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Irish Wind Energy Association
Sycamore House
Unit 5B/5C, Millennium Park
Naas, Co. Kildare, W91 D627

office@iwea.com

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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for and on behalf of **Fehily Timoney and Company**

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FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Kilkenny Airport

info@skydiveclub.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Minister for Defence
Head Office, Department of Defence
Station Road
Newbridge, Co. Kildare W12 AD93

info@defence.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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By Email: littletonwindfarm@ftco.ie

By Post: Eamon Hutton, Fehily Timoney and Company, Core House, Pouladuff Road, County Cork, T12 D773

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Yours sincerely,

Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Met Eireann
65/67, Glasnevin Hill
Dublin 9, D09 Y921

met.eireann@met.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, approximately 3km east of the village of Littleton and 10km east of Thurles. The proposed development is located on a bog group consisting of the Longford Pass, Littleton and Lanespark Bog.

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

National Monumnets Service

nationalmonuments@chg.gov.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

National Parks and Wildlife Service (NPWS)

90, King Street North
Dublin 7, D07 N7CV

nature.conservation@chg.gov.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

National Transport Authority
Harcourt Lane
Dun Sceine, Dublin 2, D02 WT20

info@nationaltransport.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Sustainable Energy Authority Ireland
St Kevin's
3, Park Place, Hatch Street Upper
Dublin 2, D02 FX65

info@seai.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, approximately 3km east of the village of Littleton and 10km east of Thurles. The proposed development is located on a bog group consisting of the Longford Pass, Littleton and Lanespark Bog.

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Teagasc
Knockgriffin
Midleton, Co. Cork, P25 XW72

info@teagasc.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Broadcasting Authority of Ireland - BAI

rwoods@bai.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Eir (meteor mobile)

MobileNetworksTXN@eir.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Eircom
1, Heuston South Quarter
St. John's Rd
Dublin City

seamus.okeeffe@openeir.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

ESB Telecoms

dermot.hopkins@esbtelecoms.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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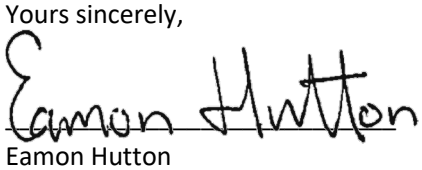
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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Enet Telecomunications Network Limited

peter.obrien@enet.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Eamon Hutton

Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Imagine
Blackthorn Road
Mulchanstown, Dublin

support@imagine.ie
ronnie.oneill@imaginegroup.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Eamon Hutton
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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

IT Department, Kilkenny County Council

webmaster@kilkennycoco.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

IT Department, Laois County Council

corpaffairs@laoiscoco.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Tipperary County Council
For the attention of the IT Department

customerservices@tipperarycoco.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Nova Telecom
Cork Internet eXchange
Hollyhill Industrial Estate
Cork, T23 R68N

a.fleming@novatelecom.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Ripplecom
Houston Hall
Ballycummin Ave, Raheen Business Park
Limerick, V94 PKF1

business@ripplecom.net
licensing@ripplecom.net

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

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Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

An Garda Siochána
Telecommunciations Section,

ICT_Executive_Director@Garda.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Eamon Hutton
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Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Three
28/29, Sir John Rogerson's Quay
Dublin 2

Alister.Cole1@three.ie

Our Ref: P20-211/Lett/EH/MG

16 September 2021

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, approximately 3km east of the village of Littleton and 10km east of Thurles. The proposed development is located on a bog group consisting of the Longford Pass, Littleton and Lanespark Bog.

This letter and enclosed scoping report is being issued to you as part of the consultation process for the project's Environmental Impact Assessment Report (EIAR). As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development, relevant to your area of expertise. We respectfully ask that you forward all responses before Friday the 5th of November 2021 to provide adequate time to consider all material. Your response may be forwarded by email or by post to the address below:

By Email: littletonwindfarm@ftco.ie

By Post: Eamon Hutton, Fehily Timoney and Company, Core House, Pouladuff Road, County Cork, T12 D773

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Yours sincerely,

Eamon Hutton

Eamon Hutton
for and on behalf of **Fehily Timoney and Company**

Encl.

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Viatel Ireland Ltd.

Conor.Pendlebury@viatel.com

Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Eamon Hutton
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Encl.

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Our Ref: P20-211/Lett/EH/MG

16 September 2021

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Encl.

FEHILY TIMONEY

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Our Ref: P20-211/Lett/EH/MG

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Encl.

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

LITTLETON WIND FARM

EIAR SCOPING REPORT

Prepared for: Bord na Móna Powergen Ltd.

Date: September 2021

Core House, Pouladuff Road,
County Cork, T12 D773, Ireland

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CORK | DUBLIN | CARLOW

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EIAR SCOPING REPORT

REVISION CONTROL TABLE, CLIENT, KEYWORDS AND ABSTRACT
User is responsible for Checking the Revision Status of This Document

Rev. No.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
0	For issue	EH/TB/MG	TB/JH	JH	15.09.2021

Client: Bord na Móna Powergen Ltd.

Keywords: Littleton, Wind Turbines, Renewable Energy, Environmental Impact Assessment Report, Scoping, Environmental, Planning Application

Abstract: This is a scoping report prepared for a proposed wind energy development near Littleton, County Tipperary. The purpose of the scoping report is to identify the content and extent of the information to be provided in the Environmental Impact Assessment Report for the project.

Please send all responses to: littletonwindfarm@ftco.ie

or respond by post to:
Fehily Timoney & Company
Core House
Pouladuff Road
County Cork

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1 INTRODUCTION

1.1 General

1.1.1 Introduction

Bord na Móna Powergen Ltd. intend to apply for planning consent for a renewable energy development referred to as Littleton Wind Farm, located approximately 3km east of the village of Littleton and 10km east of Thurles, Co. Tipperary.

A site location map is included in Figure 1-1.

Fehily Timoney & Company have been appointed as Environmental Consultants for the project and will prepare an Environmental Impact Assessment Report (EIAR) in support of the planning application. The EIAR will be prepared in accordance with the requirements of Schedule 6 of the Planning and Development Regulations 2001, as amended and the EIA Directive 2011/92/EU, as amended.

1.1.2 The Applicant

Bord na Móna Powergen Ltd. is a subsidiary of Bord na Móna plc, a publicly owned company, originally established in 1946 to develop and manage some of Ireland's extensive peat resources on an industrial scale, in accordance with government policy at the time. Bord na Móna's lands extend to approximately 80,000 hectares in total and are located mainly in the Irish midlands.

Bord na Móna has a long track record of developing energy projects, dating back to the development of the first generation of peat-fired power stations. Renewable energy is a strategic growth area for the company and is aligned with its corporate strategy, which includes reducing carbon emissions.

Bord na Móna Powergen Ltd. currently manages and operates a portfolio of thermal and renewable assets, namely Edenderry Power Plant a peat/biomass generating unit, Cushaling peaking plant, Bellacorick, Mountlucas, Oweninny Phase 1 and Bruckana wind farms, and the Drehid landfill gas facility. A number of other renewable projects are either in construction, are consented or are in the preplanning process.

In 2015, Bord na Móna published its 'Sustainability Statement 2030', which sets out the company's commitment to transition to peat-free electricity generation by 2030. Renewable energy generation, including solar power, biomass and wind power, is a key component of this transition.

In January 2021, the company announced its decision to permanently end all peat harvesting in line with its change from a traditional peat business into a climate solutions company fully focused on renewable energy generation, recycling, peatlands restoration and the development of new low carbon enterprises. The cutaway will be stabilised through the implementation of an enhanced rehabilitation programme with significant portions of these lands rewilding and supporting biodiversity and other ecosystem services. Bord na Móna has a long record of rehabilitating its existing wind farm sites and will continue to implement the enhanced rehabilitation programme alongside the development of its renewable energy projects. The Company will continue to consult with all stakeholders for both activities.

1.1.3 Purpose of the Report

This Scoping Report provides details regarding the proposed development and the subject site, including the site selection process. It also sets out the proposed scope of work for the EIAR.

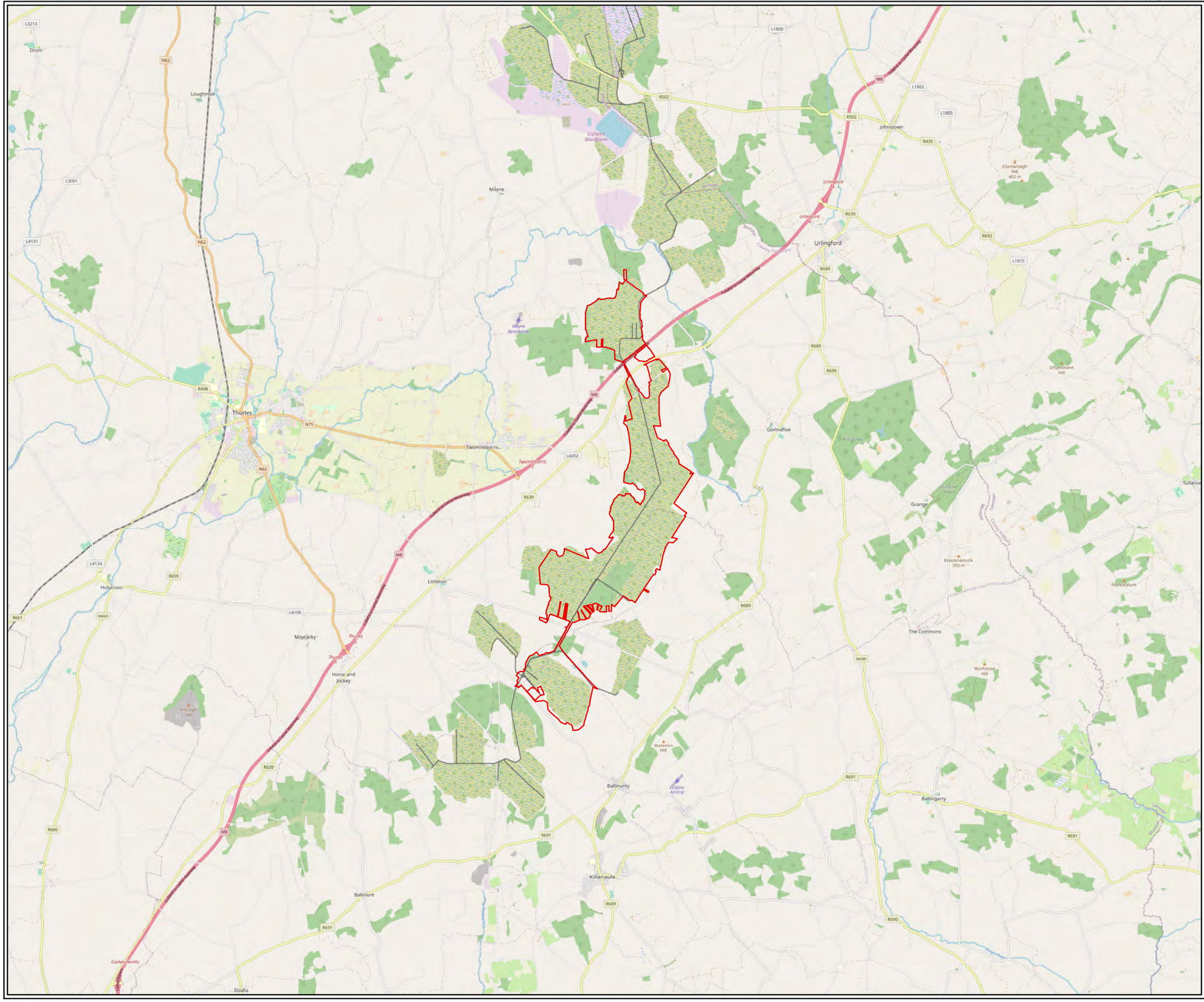
The purpose of the EIA scoping process is to identify the key points and issues which are likely to be important during the environmental impact assessment (EIA) and to eliminate those that are not. It does this by identifying sources or causes of potential environmental effects, the pathways by which the effects can happen, and the sensitive receptors, which are likely to be affected. It defines the appropriate level of detail for the information to be provided in the EIAR. In essence, the primary focus of scoping is to define the most appropriate assessment of significant effects related to the proposed development.

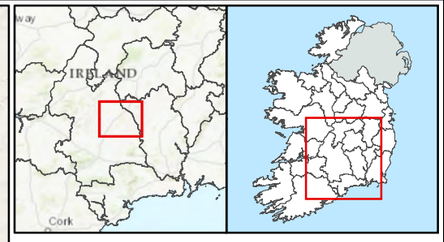
This scoping report will be distributed to a range of stakeholders who are considered to have appropriate expertise and relevant prior experience of the factors involved, knowledge of the characteristics of the project type and of the sensitivities likely to be present in the receiving environment as well as local knowledge and interest in the area. The scoping report will also be made available to individual stakeholders and the public on request.

A full list of the consultees who were issued this scoping report is included in Appendix A of this document.

Path: R:\Map Production\2020\P20-211\Workspace\Scoping Report\P20-211_GIS_Fig1-1_SiteLocation_A3.mxd

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Legend

Site Boundary

N
W E
S

0 2.5 5 10 Kilometers

TITLE: Site Location			
PROJECT: Littleton Wind Farm, Co. Tipperary			
FIGURE NO:	1.1		
CLIENT:	Bord Na Móna		
SCALE:	1:100000	**REVISION:**	0
DATE:	13/09/2021	**PAGE SIZE:**	A3

FEHILY TIMONEY
Cork | Dublin | Carlow
www.fehilytimoney.ie

1.2 Planning Process for the Proposed Development

The Planning and Development Act 2000 was amended in 2006 so that major infrastructure proposals could be made directly to An Bord Pleanála, rather than to the local planning authority. This is known as Strategic Infrastructure Development (SID).

In order to qualify for SID under section 37B of the Planning and Development Act 2000 (as amended), a proposed development must firstly fall within a class specified in the Seventh Schedule to the 2000 Act. Part 1 of the Seventh Schedule, as amended, specifies, inter alia, the following classes of development:

> "An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 megawatts."

Thereafter, the Board must satisfy itself that the proposed development meets one or more of the conditions set out in subsection 37A(2) of the 2000 Act, namely—

> "(a) the development would be of strategic economic or social importance to the State or the region in which it would be situate,
>
> (b) the development would contribute substantially to the fulfilment of any of the objectives in the National Spatial Strategy or in any regional spatial and economic strategy in force in respect of the area or areas in which it would be situate,
>
> (c) the development would have a significant effect on the area of more than one planning authority."

It is anticipated that the proposed development will likely have an output of at least 50 Megawatts. Should the project be of this scale, an application will be made to An Bord Pleanála (Board) seeking a determination in relation to the SID status, or otherwise, of the proposed wind energy development. If the Board determine that the development is indeed SID, the planning application will be submitted directly to An Bord Pleanála, under the provisions of Planning and Development (Strategic Infrastructure) Act 2006. Should the project be of a scale lower than the SID thresholds, an application for planning permission will be made to Tipperary County Council.

1.3 Environmental Impact Assessment and the Function of the EIAR

Under Section 172 of the Planning and Development Act, as amended, a planning application for a development which comes within a class of development specified under Schedule 5 of Part 2 of the Planning and Development Regulations must be accompanied by an Environmental Impact Assessment Report (EIAR) in accordance with the EIA Directive 2011/92/EU, as amended in 2014. The purpose of an EIAR is to provide a detailed description of the proposed development and outline potential impacts associated with the construction, operation and decommissioning of the project. Where adverse impacts are identified, mitigation measures are proposed, and the residual impacts described.

Accordingly, as the proposed development will have more than 5 no. turbines and a generating capacity of greater than 5MW, an EIAR will be prepared for the project in accordance with the Planning and Development Regulations 2001 (as amended). Furthermore, EIA is mandatory for all Schedule 7, Strategic Infrastructure Development Projects.

1.4 Contribution to the EIAR

This Scoping Report has been prepared by Fehily Timoney & Company (FT) on behalf of Bord na Móna Powergen Ltd. FT is a planning, environmental and engineering consultancy based in Cork, Dublin and Carlow, specialising in civil and environmental engineering, environmental science and planning. FT is well established as a leading consultancy in wind farm development in Ireland.

FT will be preparing the Environmental Impact Assessment Report for submission to the planning authority as described in Section 1.2 above.

Specialist contributors to the EIAR include:

- Macro Works who will prepare the landscape and visual impact assessment;
- John Cronin & Associates who will prepare the Cultural Heritage assessment.

1.5 Consultation

The stakeholder consultation process is being carried out in accordance with the Code of Practice for Wind Energy Development in Ireland-Guidelines for Community Engagement (available at: www.dccae.gov.ie).

Comments on the scope of the EIAR can be submitted by email to littletonwindfarm@ftco.ie or returned by post to Fehily Timoney & Company, Core House, Pouladuff Road, County Cork. We ask all consultees to submit responses by the 5**th of November 2021** to provide adequate time to consider all responses.

The responses from this consultation will inform the ongoing design process in addition to informing the scope of the environmental assessments.

Community & Stakeholder Consultation

Bord na Móna are operating as the Community Liaison Officer (CLO) for the proposed development and will function as a key point of contact within the local community. The CLO has been resourced to deal with all queries and will conduct informal local community consultation in the area. Feedback from the CLO will be passed on to the project design team and EIAR team on an ongoing basis in order to allow the consultation process to inform the design process.

With regard to COVID-19 and direct contact with members of the public, Bord na Móna will continue to assess the most up to date public health guidelines. With this in mind, the applicant hopes to be in a position to meet member of the public through Community Engagement Clinics. Updates will be provided to members of the public as the situation develops.

A project website has been set up for the project to inform the public of information relating to the proposed development. The website will be used to notify members of the public of project updates, project timelines, upcoming public consultation and any changes in the design and layout as a consequence of consultations. It also provides an avenue for the public to contact the project development team directly. The website is as follows www.littletonwindfarm.ie

Extensive consultation will be carried out with statutory and prescribed bodies which will include Tipperary County Council and An Bord Pleanála pursuant to the Strategic Infrastructure Development Pre-Application process.

2 STRATEGIC PLANNING CONTEXT

There is significant national, regional and local climate, planning and energy policy support for the subject development. A summary of same is provided below.

Climate Action Plan 2019

The 2019 Climate Action Plan (CAP) provides a roadmap of what must be achieved and requires 70% of all our electricity to come from renewable energy sources by 2030. This almost doubles our previous target of 40% by 2020. To achieve the 70% target, the CAP earmarks a target of 3.5GW of off-shore wind and almost doubling of existing on-shore wind from circa 4.2GW (today) to 8.2GW by 2030. To put the scale of the ambition into context it should be noted that it has taken 20+ years to achieve the current level of renewable penetration onto the Grid. The challenge is now to achieve twice as much in half the time.

The Climate Action and Low Carbon Development Bill 2021 recently approved by Government commits to an average 7% per annum reduction in overall greenhouse gas emissions from 2021 to 2030 (a 51% reduction over the decade) and to achieving net zero emissions by 2050. The 2030 and 2050 target is now set in law and all public bodies including planning authorities are obliged to perform their function in a manner consistent with national climate plans and strategies. Every sector must contribute to meeting this target by implementing policy changes as outlined in the Bill. It is likely that the CAP targets for onshore wind will increase in order to meet the requirements of the Climate Action and Low Carbon Development Bill 2021.

The proposed project if developed will help Ireland achieve its binding targets for renewable onshore wind energy.

National Planning Framework and the Southern Regional Spatial and Economic Strategy

A key goal and objective of the National Planning Framework (NPF) is identifying how the State can 'Transition to a Low Carbon Economy'. Section 1.2 recognises the need for new energy systems and transmission grids in order to deliver a more distributed, renewable focused national energy system in order to harness the potential from wind, wave and solar energy sources. Similarly, the priority of the Southern Regional Spatial & Economic Strategy (SRSES) with regard to the transition to a low carbon and climate resilient society notes that "Wind energy is currently the largest contributor of renewable energy and it has the potential to achieve between 11-16 GW of onshore wind and 30 GW of offshore wind by 2050. The sector can make a significant contribution to meeting national energy demands while attaining our energy and emissions targets for 2020 and beyond". Furthermore RPO 99 of the SRSES sets out a clear objective "to support the sustainable development of renewable wind energy at appropriate locations and related grid infrastructure in the Region in compliance with national Wind Energy Guidelines".

Tipperary County Development Plan (North & South, as varied)

In relation to Climate Change Adaption, it is a policy of the County Council to promote the reduction of energy demand and in particular, reliance on fossil fuels and the costs associated with imported energy sources. The policy also aims to reduce greenhouse gas emissions. Furthermore, The Tipperary Renewable Energy Strategy 2016 sets out planning policy and objectives for the development of renewable energy. The strategy aims to support and facilitate the development of renewable energy in line with the Government's strategic goals and European targets, while considering environmental sensitivities.

The Wind Energy Strategy for the County states it is the policy of the Council to support, in principle and in appropriate locations, the development of wind energy resources in county Tipperary. The Council recognises that there is a need to promote the development of 'green electricity' resources and to reduce fossil fuel dependency and greenhouse gas emissions in order to address the global issue of climate change, and to comply with European and International policies with regards to renewable and sustainable energy resources. The County Council's policy therefore supports the production of renewable energy in reducing dependency on fossil fuels and reducing climate change through reduction of greenhouse gas emissions.

Summary

The proposed project if development will help Ireland achieve its binding targets for renewable onshore wind energy. The principle of the development is also considered acceptable and in accordance with the Tipperary County Development Plan.

3 SITE SELECTION PROCESS

Strategic Site Selection

Bord na Móna conducted a technical review of potential candidate sites for wind energy projects, on land which is either cut away or will be cut away before 2021. This exercise reviewed a list of potentially 25 project sites, with a typical target capacity of between 50 MW and 100 MW, across the entire land bank. The main aim of this study was to gauge the sites with the best potential to deliver a successful wind farm project. The ultimate end goal of the development team was to select a project to bring forward, for which preliminary engineering designs and a planning application would be prepared.

As part of the site selection process, known constraints were applied across the entire land bank to determine unsuitable areas for wind turbines. The constraints themselves are derived from various industry and regulatory guidelines and available Geographical Information Systems (GIS) datasets. This methodology was used to generate a list of potential sites for further consideration with the level of information currently available. These sites, identified as having a higher potential for wind farm development, were then brought forward for site-specific assessment, as detailed below.

Site Specific Selection

For the site-specific assessment of candidate sites, criteria were chosen which not only covered the broad range of issues which can arise in wind farm development, but also allowed for direct comparison of the candidate sites to each other to determine their relative suitability for wind farm development. The site-specific selection criteria and outline of basis for assessment for each criterion are listed in Table 3.1:

Table 3-1: Criterion Basis for Assessment

Criterion Basis for Assessment	Criterion Basis for Assessment
Grid Access/Capacity	Grid Access/Capacity means potential of the National Grid to accommodate future projects on the network. The proximity of the project to suitable grid nodes (i.e. those with spare capacity) should increase the likelihood of a project being selected for a grid connection offer.
County Development Plans and Zoning	County Development Plans typically indicate the areas of a county which are deemed preferred, open to consideration and not suitable for wind farm development. Bord na Móna has committed not to develop wind farms in areas deemed unsuitable.
Proximity to Houses	Refers to how close turbines are to residences.
Wind Resource Assessment	The available wind resource (i.e. wind speed) directly translates into how much electrical output comes from the site.
Environmental Sensitivity	Environmental Sensitivity is the ecological sensitivity of the site based on proximity to sensitive areas within or around the site.
Cumulative Impact	Depends on the landscape's capacity to absorb wind farm developments
Aviation	Airspace control and use to be considered.

Criterion Basis for Assessment	Criterion Basis for Assessment
Land Use	Internal issue relating to the residual peat depth, production plans and alternative uses.
Communications Infrastructure	Telecoms masts and signals to be considered.
Flood Plain Analysis	Flood Plain Analysis assesses the wind farm's location in terms of historical flooding data.
Supporting Infrastructure	Sites with better road access require less modifications or upgrade to the local infrastructure to facilitate construction.

These site-specific assessments were conducted by Bord na Móna with input from relevant subject experts, where required. A score was awarded to each site under each criterion.

Site Selection Results

The site assessment scores for each criterion were determined and a shortlist of sites deemed suitable for a large-scale wind energy development was compiled. Of these sites, Littleton scored very highly along with other high-scoring sites that meet the relevant criteria. It was therefore deemed that Littleton should be progressed for detailed assessment and planning consideration. Further details on the identification of Littleton as the optimal site for the proposed development are presented under the individual site-selection criteria described below.

Grid Access / Capacity

Significant grid infrastructure existing in the local area including Thurles 110kV substation located in the townland of Ballygammane, County Tipperary, or the Lisheen Mine 110kV substation in the townland of Killoran, County Tipperary. Both substations are located approximately 7km from the proposed site.

County Development Plan Zoning

County Development Plans and Wind Energy Strategies, where available, typically indicate the areas of a county which are zoned as preferred, open to consideration or not suitable for wind farm development. The site is zoned as an 'Area Open for Consideration' for Wind Energy Development' in the Tipperary Wind Energy Strategy.

Proximity to Houses

It was found that in general Bord na Móna sites are surrounded by low density rural housing, and most sites have a relatively large proportion of their land area free from proximity issues. However, longer narrower sites had a larger proportion of their land area constrained out due to proximity issues to houses or population centres.

The site is surrounded by a number of towns and villages, however these are relatively distant from the site when compared with other locations e.g. there are 156 residences within a distance of 2km from the site.

Wind Resource Assessment

Wind resource assessment is the process by which wind power developers estimate the future energy production of a wind farm. Accurate wind resource assessments are crucial to the successful development of wind farms. The Irish Wind Atlas, published by the Sustainable Energy Authority of Ireland (SEAI), uses long term weather model data to predict the long term average wind speeds in Ireland, and is used by wind developers and local authorities to determine the best locations for future wind farm development

Environmental Sensitivity

Environmental sensitivity is a key factor in identifying suitable sites for wind farm development. The assessment of environmental sensitivity among the candidate sites included a review of proximity to Natura 2000 sites, biodiversity of the lands within the sites themselves, and acknowledgement of any other site-specific ecological data that has already been captured, for example, previously determined important populations of winter birds, bats or mammals.

Of the candidate sites, Littleton Wind Farm site was found to have areas of low ecological sensitivity and, therefore, scored high in this regard given the site area and potential to mitigate any potential negative impacts by design.

Cumulative Impacts

Cumulative impact refers to the ability of the landscape and environs to absorb multiple wind farm developments. The landscape's capacity to absorb wind farm developments can be subjective and can vary from area to area.

The potential for cumulative impact will be a significant consideration for this development given that there are other windfarms in the area, the closest of which are as follows:

- Bruckana Windfarm (40 MW).
- Lisheen Wind Farm (24 MW).
- Gorteen Lower Wind Farm (2.3 MW).
- Ballybay Wind Farm (13.8 MW).
- Kill Hill Wind Farm (36 MW).

Aviation

The M8 motorway runs to the west of most of Littleton Bog Group in a north-south direction. As such many of the bogs fall within a 3NM (i.e. 5.6 km) corridor either side of main national road routes (as listed in their 2014 position paper entitled 'Air Corps Wind Farm/Tall Structures Position Paper').

In this regard, Littleton Wind Farm did not score highly for aviation in the overall matrix. Detailed consultation and design considerations will be held with key stakeholders such as the IAA and Department of Defence. As part of the EIAR, an adequately qualified Aviation specialist shall assess the potential impact of the proposed development on aviation issues and address potential stakeholder concerns as required.

Land-Use

Coillte forestry is located at various locations close to some of the bogs within the Group, and there is an established on-site Coillte plantation in the south of Littleton Bog. Varying degrees of on-site vegetation, ranging from light scrub to established trees exist on some bogs, depending on the level of production activity and how long production has ceased.

Communications Infrastructure

Many of the sites have telecommunication point-to-point microwave signals crossing them and some sites have telecommunication masts located within the site boundaries. However, this issue can typically be overcome by engineered solutions, i.e. wind farm layout design or additional telecom relay masts. For this reason this criterion does not significantly impact on overall project viability.

Links will be identified through a detailed consultation exercise carried out with all operators and appropriate buffers will be agreed.

Flood Plain Analysis

Flood Plain Analysis assesses the wind farm's location in terms of historical flooding data. The assessment methodology used this historical flooding data to consider the percentage area of a site which has previous flooded, the percentage area within one kilometre of a site which has previously flooded and recorded flooding points within one kilometre of a site. In addition, whether the site has pumped or gravity drainage systems is also considered.

There are small pockets of localised flooding onsite during prolonged periods of wet weather, however these do not give rise to any flooding concerns for the proposed development and overall the site scored well in this regard.

Supporting Infrastructure

The proximity of the existing road and electricity transmission network were considered in terms of ease of delivery of turbine components and relative cost of potential grid connection. Littleton scored highly with regard to supporting infrastructure, in terms of road network and potential grid connection.

4 PROJECT DESCRIPTION

4.1 Proposed Wind Farm

The proposed development will be located on Littleton Bog Group which comprises 14 No. bogs and straddles the borders of Counties Tipperary, Kilkenny and Laois. The study area for the proposed development is confined to three of these bogs, namely Longford Pass, Littleton and Lanespark and covers an area of approx. 1,553.6 ha. The proposed development will be located entirely within the jurisdiction of Tipperary County Council.

The study area adjoins Popes bog to the north and Kileen bog to the south. The study area extends for approximately 12 km from north to south and from circa 1 km (at north end) to 3 km (at south end) from east to west.

A high proportion of the site is regenerating cutaway (heath, scrub, woodland) but includes open areas with large bodies of open water. Areas of remnant high bog occur scattered along the boundaries.

Littleton is generally surrounded by farmland but there are extensive conifer plantations outside the eastern and western boundaries. A conifer plantation also occurs within the southernmost part of the site.

There is an extensive network of roads in the area. The M8 motorway and the R639 run to the northwest/west of Littleton bog. The R689 and R690 run to the east and the L4101 runs to the south. The main site access points are at the north and south ends of the bog adjacent to the railway line. The study area is within the catchments of the Nore and Suir river systems.

The closest settlements to Littleton Bog are Urlingford to the north, Gortnahoe to the northeast, Twomileborris to the west, Littleton to the southwest and New Birmingham to the southeast.

The proposed development will likely comprise between 14 and 18 no. wind turbines, access roads and entrance(s), electricity substation, borrow pits, electrical cabling for grid connection, temporary construction compounds and a permanent anemometry mast. New sections of turbine access routes will also be required; the siting of which will have regard to the constraints identified onsite. All wind farm cabling, including connection to the onsite substation, will be laid underground.

The project will also include for the development of a public recreational amenity in the form of walking/cycling trails, within the proposed development site, the design for which will be developed alongside the wind farm infrastructure design. The design will also see to link into existing or proposed amenity developments in the vicinity of the site.

The layout of the proposed wind farm will be developed following consultation and further environmental investigation and assessment. The aim of this is to design a wind farm that will minimise the potential environmental effects of the project while at the same time maximising the energy yield of the wind resource passing over the project site.

The electricity generated by the proposed wind farm will be transmitted by a collector system of underground cables to the proposed on-site substation. The proposed development will also comprise underground cables from the development to the National Grid connection point as well as improvements to the public road network for the delivery of turbine components.

4.2 Grid Connection

Central to the proposal, is the supply of power from the proposed Littleton Wind Farm to the Irish electricity network via underground cable to either the existing Thurles 110kV substation located in the townland of Ballygammane, County Tipperary, approximately 7km west of the site, or the Lisheen Mine 110kV substation in the townland of Killoran, County Tipperary, approximately 7km north of the site.

The proposed grid connection cable will connect the proposed on-site substation to the existing Thurles or Lisheen Mine substation via underground cable. The grid connection cable will leave the on-site substation and cross an area within the site before entering the public road. The grid route will then follow the public road to the point of connection at one of the existing substations on the national grid. The final grid-route and substation will be decided in consultation with Eirgrid.

Connection will be sought under the Enduring Connection Process (ECP) grid access regime. The grid connection will be considered in the Environmental Impact Assessment Report.

4.3 Turbine Delivery Route

Wind turbine components will enter the country through selected ports and these components will include:

- Blades,
- Tower sections
- Nacelles.

The components will then be delivered to site by specialist transport vehicles and assembled on-site.

Wind turbine components are expected to be transported to the proposed site via the motorway network, which runs immediately to the west of the proposed development site, however, the turbine delivery route is subject to study and assessment to determine the most appropriate route.

The turbine delivery route will be detailed and assessed in the EIAR.

5 STRUCTURE AND SCOPE OF THE EIAR

5.1 Content of the EIAR – Statutory Requirements

The EIAR will be prepared in accordance with Schedule 6 of the Planning and Development Regulations 2001, as amended, which sets out the contents of an EIAR. In addition, Directive 2011/92/EU as amended by Directive 2014/52/EU, which was adopted into EU law on 16 April 2014, will also be included in the preparation of this EIAR.

The purpose of the EIAR is to provide in particular:

a) a description of the project comprising information on the site, design, size and other relevant features of the project;

b) a description of the likely potential significant effects of the project on the environment;

c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;

d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;

e) a non-technical summary of the information referred to in points (a) to (d); and

f) any additional information relevant to the specific characteristics of the wind farm project proposed.

The EIAR will identify, describe and assess the direct and indirect significant effects of the project on the following factors:

a) population and human health

b) biodiversity, with particular attention to protected species and habitats

c) land, soil, water, air and climate

d) material assets, cultural heritage and the landscape

e) the interaction between the factors referred to in points (a) to (d).

5.2 EIAR Methodology

5.2.1 General

The EPA and the European Commission (EC) have published guidelines on the preparation of environmental impact assessment reports, namely:

- Draft Advice Notes on Preparing Environmental Impact Statements (EPA, 2015);
- Draft Guidance on the information to be contained in Environmental Impact Assessment Reports (Environmental Protection Agency (EPA), 2017);

- Environmental Impact Assessment of Projects - Guidance on Scoping (European Commission (EC), 2018);
- Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (EC, 2017);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018).

The EIAR team will have regard to these guidelines in the preparation of the EIAR.

The team will also have regard to best practice guidance for individual environmental topics. Regard will also be paid to the 'Best Practice Guidelines for the Irish Wind Energy Industry' published by the Irish Wind Energy Association and the 'Wind Energy Development Guidelines' published by the Department of Environment, Heritage and Local Government (2006) and the subsequent Draft Revised Wind Energy Development Guidelines (2019).

There are two different EIAR structures which are commonly used and which the EPA guidelines accept as equally valid. The structure, which the EIAR team proposes to use for the EIAR for the proposed Littleton Wind Farm project, is the grouped format structure.

Using this structure there is a separate chapter for each topic, e.g. air quality, biodiversity, hydrology. The description of the existing environment, the proposed development and the potential impacts, mitigation measures and residual impacts are grouped in the chapter. The grouped format makes it easy to investigate topics of interest and facilitates cross-reference to specialist studies.

Given the need to ensure that the EIAR is readily accessible to the general public, as well as to the statutory authorities, the EIAR team has proposed to structure the EIAR as described below:

Chapter 1:	Introduction
Chapter 2:	Background to the Proposed Development
Chapter 3:	Consideration of Reasonable Alternatives
Chapter 4:	Description of the Proposed Development
Chapter 5:	Population and Human Health
Chapter 6:	Biodiversity
Chapter 7:	Ornithology
Chapter 8:	Land, Soils and Geology
Chapter 9:	Hydrology, Hydrogeology and Water Quality
Chapter 10:	Air Quality and Climate
Chapter 11:	Noise and Vibration
Chapter 12:	Shadow Flicker
Chapter 13:	Landscape and Visual Impact
Chapter 14:	Archaeological, Architectural and Cultural Heritage
Chapter 15:	Material Assets (to include Traffic and Transportation, Aviation, Telecommunications and Electromagnetic Interference);
Chapter 16:	Interaction of Effects
Chapter 17:	Schedule of Mitigation and Monitoring Measures

5.2.2 EIAR Chapter Structure

The broad methodology framework used in each chapter will include the following:

- Introduction
- Assessment Methodology
- Existing Environment
- Potential Impacts
- Mitigation Measures
- Monitoring Measures
- Residual Impacts

Introduction

This section introduces the environmental topic to be assessed and the areas to be examined within the assessment.

Assessment Methodology

Specific topic related methodologies are outlined in this section. This will include the methodology used in describing the existing environment and undertaking the impact assessment. It is important that the methodology is documented so that the reader understands how the assessment was undertaken. This can also be used as a reference if future studies are required.

Existing Environment

An accurate description of the existing environment is necessary to predict the likely significant impacts of a new development. Existing baseline environmental monitoring data can also be used as a valuable reference for the assessment of actual impacts from a development once it is in operation.

To describe the existing environment, desktop reviews of existing data sources will be undertaken for each specialist area relying on published reference reports and datasets to ensure the objectivity of the assessment. Desktop studies will also be supplemented by specialised field walkovers or studies in order to confirm the accuracy of the desktop study and to gather more baseline environmental information for incorporation into the EIAR.

The existing environment will be evaluated to highlight the character of the existing environment that is distinctive and what the significance of this is. The significance of a specific environment can be derived from legislation, national policies, local plans and policies, guidelines or professional judgements. The sensitivity of the environment will also be described.

Potential Impacts

In this section, individual specialists predict how the receiving environment will interact with the proposed development. The full extent of the proposed development's effects and emissions before the proposed mitigation measures are introduced is outlined. Impacts from both the construction and operation phases of the proposed development are outlined. Interactions and cumulative impacts with other environmental topics are also included in this evaluation.

The evaluation of the significance of the impact is also undertaken. For most chapters pre-existing standardised criteria for the significance of impacts will be used in accordance with the guidelines set out in the EPA (2017) Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports. Such criteria can include Irish legislation, international standards, European Commission and EPA guidelines or good practice guidelines. Where appropriate criteria do not exist the assessment methodology section states the criteria used to evaluate the significance.

The EPA Advice Notes on Current Practice (EPA, 2003) provides guidance on the topics which would usually be addressed when preparing an EIAR for different classes of development. The Advice Notes highlight typical issues, which would arise for each development class. The proposed development set out within this scoping report falls under Project Type 33 'installations for harnessing wind power for energy production (wind farms)'.

Mitigation Measures

If significant impacts are anticipated mitigation measures will be devised to minimise impacts on the environment. Mitigation measures by avoidance, by reduction and by remedy can be outlined.

Monitoring Measures

If monitoring measures are required during the various phases of the proposed development these will be set out and specified.

Residual Impacts

The assessment identifies the likely impact that will occur after the proposed mitigation measures have been put in place. These impacts are described in detail and assessment of their significance undertaken.

5.2.3 EIAR Report Structure

The structure proposed for the EIAR is as follows:

Volume 1 - Non-Technical summary

Volume 2 - Main EIAR

Volume 3 - Appendices of the EIAR

Volume 4 – Photomontages.

6 ENVIRONMENTAL ISSUES TO BE ADDRESSED IN THE EIAR

The following section discusses the general contents of each chapter of the EIAR as listed in Section 5.2.1:

6.1 Chapter 1: Introduction

The Introduction Chapter will set out the context of the EIAR including an introduction to the applicant and a short description of the proposed development. The requirements for Environmental Impact Assessment will be addressed along with the EIAR methodology, structure and outline of cumulative projects. Contributors to the EIAR will also be detailed in this Chapter along with the relevant expertise.

6.2 Chapter 2: Background to the Proposed Development

Chapter 2 will set out the context of the proposed development which will discuss the need for the proposed project with regard to climate change, renewable energy targets and energy security. The policy context will also be discussed in this chapter. Chapter 2 will summarise International, European, National and Local Energy and Planning Policy, in the context of the proposed project.

6.3 Chapter 3: Consideration of Reasonable Alternatives

The reasonable alternatives, which were considered, when developing the overall configuration of the proposed Littleton Wind Farm will be described and the technology options for the project will be outlined in Chapter 3: Consideration of Reasonable Alternatives.

The reasonable alternatives studied with respect to the Littleton Wind Farm will be outlined under the following headings:

- Locations – This will include a discussion of the overall project site selection process for the Littleton Wind Farm based on the landholding available to the applicant. It will include a summary of the project site selection report which will be included in the EIAR outlining details of the criteria used to determine project site suitability for wind energy development including:
    - Wind resource;
    - Proximity to residential dwellings;
    - Land Zoning in County Development Plans;
    - Established and Future Land-Use;
    - Ecological Conservation Designations;
    - Landscape Designations; and
    - Ease of Access etc.
- Access – Details of the criteria used to select the network of access tracks that will provide access from the public road network to the project site (and to each turbine within the site) in addition to those that will provide internal connections (as an alternative to using public roads) between turbines will be outlined.

This will include information on the availability of existing track, suitable ground conditions, terrain, local road infrastructure etc.

- Connection to the National Grid – Details of the criteria used to select the proposed grid connection route will be provided. This will include an assessment of alternative grid connection route options, if relevant.

The environmental and plan-led considerations considered in the selection of the preferred alternatives will be outlined.

6.4 Chapter 4: Description of the Proposed Development

This chapter will provide a detailed description of the proposed development including the following:

- Proposed Development Layout;
- Development Components, including all internal infrastructure (roads, hardstands, cable routes, borrow pits etc), grid connection, turbine delivery and associated works;
- Description of the Proposed Turbines;
- Temporary Site Facilities and Works (construction compounds, accommodation works etc).;
- Community Benefit Proposals;
- Amenity and Recreation Proposals;
- Access and Transportation;
- Site Drainage;
- Construction Phase Management and Methodologies;
- Operational Phase; and
- Decommissioning Phase.

A Construction and Environmental Management Plan (CEMP) will be prepared and presented as an Appendix to the EIAR. The control measures that will be implemented to manage the risk of soil and water pollution, emissions of dust and noise, construction waste management and traffic impacts will be explained within this document.

6.5 Chapter 5: Population and Human Health

6.5.1 Aspects to be Addressed

The Population and Human Health Chapter of the EIAR will assess the likely significant effects of the proposed development on Population and Human Health with a particular reference to the following:

Population
The potential impacts of the proposed Littleton Wind Farm on population trends and statistics (density, age) will be addressed in this chapter.

Human Health & Safety
The potential impacts on human health from the proposed Littleton Wind Farm will be assessed in terms of potential effects on human health and safety. Other relevant technical topics of the EIAR will be crossed referenced in this Chapter as required.

Socio-economic Activity
The potential impacts of the proposed Littleton Wind Farm on employment and economic activities of the region and locality.

Land-use
The assessment will address the potential impacts of the proposed windfarm on existing and proposed land use.

Recreation, Amenity and Tourism
The assessment will address the potential impacts of the proposed Littleton Wind Farm on residential amenity, recreational facilities and activities and tourism of the region.

6.5.2 Assessment Methodology

Population
With the purpose of analysing population trends and statistics on the proposed area, population data from the Central Statistics Office will be obtained for the study area defined by electoral division, including the area of the grid route corridor. The statistics of this data is compared against county and state trends. Population data will be sourced from the CSO which will be analysed against population trends within the development area defined by electoral division which will include the grid route.

Human Health & Safety
The assessment will contain a desk study review of the potential impacts of the construction, operation and decommissioning of renewable energy developments on human health using published and verified sources of information. The assessment will contain a desk study review of the impacts of the construction, operation and decommissioning of renewable energy developments on health and safety using published and verified sources of information.

Socio-economic Activity

Data from the Central Statistics Office will be used to define the socio-economic baseline. Desktop research and consultation will provide an indication of economic activity in the study area. The potential positive and negative impacts of the proposed wind farm on employment and economic activity both directly and indirectly, will be assessed.

Land-use

The land uses in the area, which could potentially be affected by the proposed development, will be described using Corine 2018 land cover data which classifies landcover nationwide and desktop research. This data will be verified by subsequent walkovers and site surveys.

Recreation, Amenity and Tourism

All areas of scenic beauty in addition to heritage, culture and leisure facilities and activities in the study area will be identified. Residential amenities and recreational facilities, such as forestry in public ownership, walking paths, sports facilities, will be recorded and potential impacts assessed.

An assessment will then be conducted for each element of the proposed Littleton Wind Farm to ascertain any potential impacts that may arise which could directly or indirectly affect recreational activity or an amenity. This assessment will be prepared giving cognisance to other disciplines such as cultural heritage and archaeology, hydrology and ecology.

A review will be completed of several published studies and surveys which have been conducted both in Ireland by Fáilte Ireland and in the UK on the attitude of tourists to wind farms. A study of the potential impacts that the proposed development may have on the tourism of the region will be carried out by reviewing Fáilte Ireland surveys, appraising the existing patterns of the tourism within the county, and appraising the impacts that wind farms have on tourism in other counties and countries.

Proposed recreation, amenity and tourism facilities and improvements as part of the Littleton Wind Farm Project will be discussed in this section and included as part of the assessment.

6.5.3 Receiving Environment

The project site is located in County Tipperary, approximately 10km east of Thurles. The closest settlements to the proposed development are as follows:

- Ballynonty – c. 2km south
- New Birmingham – c. 2.5km west
- Gortnahoo – c. 2.5km north east
- Twomileborris – c. 3km west
- Littleton – c. 3.5km west

Given the spatial extent of the Littleton Bog Group, there are very few dwellings located in close proximity to the site, with most dwellings located along the surrounding road network, including the R639, R689 and local roads located to the north and south of the site. There are 156 dwellings within 2km of the site.

The proposed wind farm site falls within the electoral divisions (EDs) of Longfordpass, Twomileborris, Buolick, Poyntstown, New Birmingham, Killenaule and Littleton. The population of these EDs is 4,678 persons (Census 2016). The population density of this areas is 30 persons per square kilometre, lower than both the county-wide density and the state-wide density which is 37 and 67 persons per square kilometre respectively.

Landcover includes peat bogs, coniferous forestry, pastures and small areas of transitional woodland scrub, agricultural lands and transitional woodland-shrub. The land use on site was previously for the exploitation of peat. The surrounding area is largely agricultural with pockets of commercial forestry throughout.

Existing wind farm developments are located to the north of the project site, including the Bruckana and Lisheen Mine Wind Farms, to the east, including the Cnoc, Ballybay and Foyle Wind Farms and to the south west, the Kill Hill Wind Farm.

Walking and hiking trails are located in the area and horse riding is noted as a popular recreation activity in the surrounding region. There are no significant tourism recreation and amenity features in the area of the site. The Lough Doire Bhile loop is located south of Littleton and north east of Lanespark. This consists of a looped walkway around a lake and includes a carpark, signage and picnic areas. The Twomileborris/St. Kevins soccer club is located approx. 2km west of the site and two horse riding grounds are located approx. 2km east of the site and 1km south of the site.

6.5.4 Potential Impacts

Population

The potential impacts arising from the proposed development on population numbers and density during construction operation and decommissioning will be assessed.

Human Health & Safety

The potential affects arising from the proposed development which can impact on human health and human safety during construction, operational and decommissioning will be considered in this chapter.

Socio-Economics

The proposed development will have an impact on the local economy through job creation, local authority commercial rate payments and a Community Benefit Scheme. These will be developed in full and considered in the EIAR.

Land Use

The proposed development will require land take for the access tracks, wind turbines bases and adjacent hard-standings and sub-station footprints. The current land uses will remain other than within this land take. Full details will be contained in this chapter of the EIAR.

Recreation, Amenity and Tourism

The potential impact of the proposed wind farm development on the receiving environment for recreation, amenity and tourism will be assessed in this chapter in relation to the construction, operation and decommissioning phases. Potential construction impacts include full or partial closure of roads used within the area, for installation of cables and/or delivery of turbine components.

There is potential for disruption to access routes and walking paths, however any disruption will be mitigated where possible by maintaining access for people throughout or rerouting paths, and where this is not possible, in minimising the impact, clearly communicating the timing and scope of works to the local community. This section will also cross reference other technical chapters of the EIAR, for example, to determine potential impact on cultural heritage assets and to determine potential visual impact to tourism or recreation assets during the operational phase. Possibilities for improvements to recreation facilities in the area will also be considered.

6.6 Chapter 6: Biodiversity

6.6.1 Aspects to be Addressed

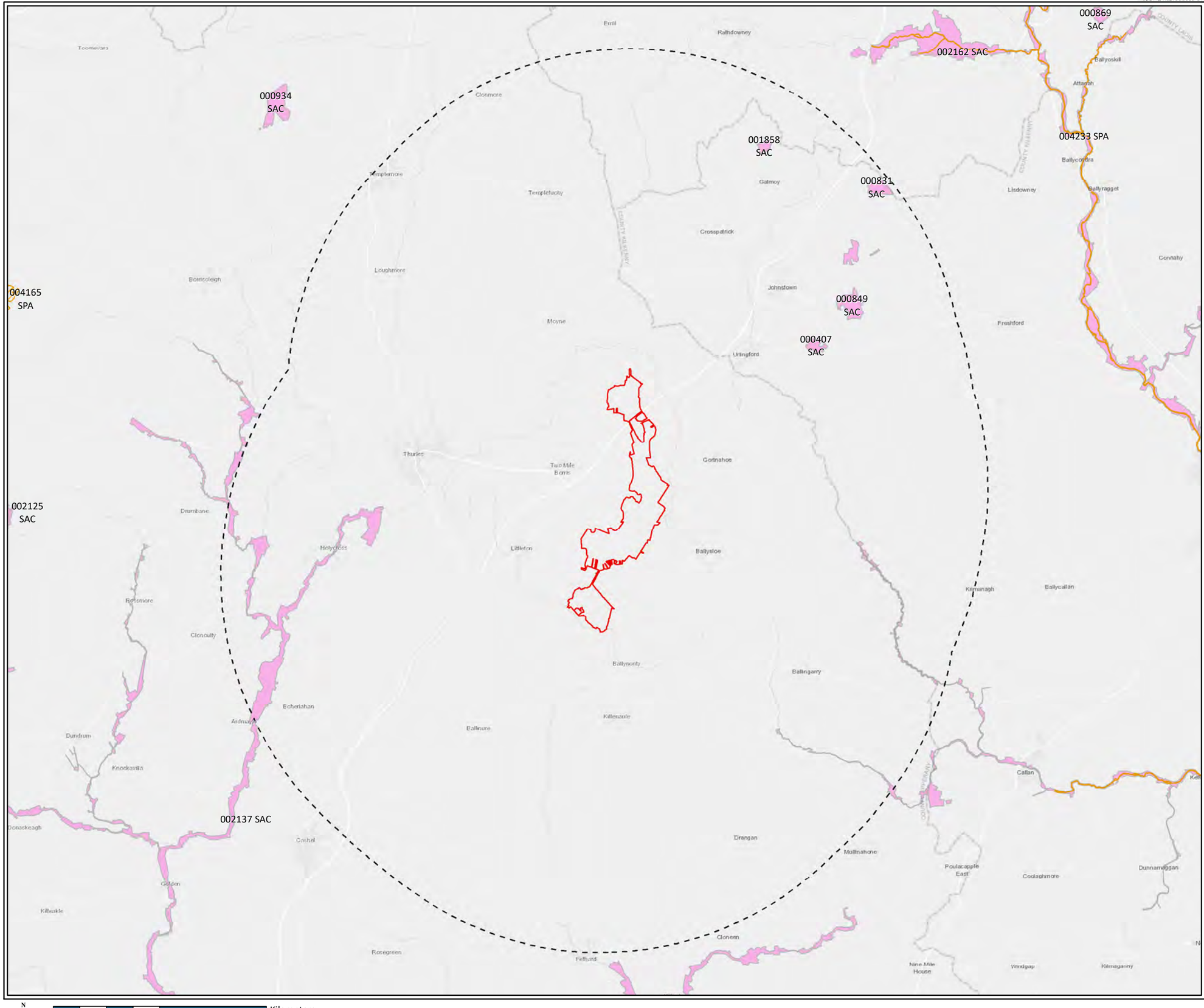
This chapter of the EIAR will address the terrestrial and freshwater aquatic habitats and species, including those of conservation concern within and in close proximity to the proposed wind farm; including along and in close proximity to the on-site cable routes; on and in close proximity to the sub-station, tree felling and any required replanting. It will also address the potential impacts on ecology from the proposed underground cable between the proposed wind farm and the grid connection point as well as any proposed alterations to the public road network required for the delivery of turbine components.

In particular, the assessment will focus on:

- European sites i.e. Special Areas of Conservation designated under the EU Habitats Directive (Council Directive 92/43/EEC) and Special Protection Areas designated under the EU Birds Directive (Directive 2009/147 EC), within the Zone of Influence of the proposed sites and routes. Potential pathways for significant effects to European sites shall also be considered.
- Other designated sites such as Natural Heritage Areas, proposed Natural Heritage Areas, Nature Reserves and Refuges for Fauna or Flora.
- Ecologically important habitats including habitats listed in Annex I of the Habitats Directive.
- Species protected under the Wildlife Acts along with Annex II and IV of the Habitats Directive.
- Aquatic species and habitat linked hydrologically to the proposed development
- Rare and protected flora including species listed under the Flora Protection Order (2015).
- Invasive species particularly those listed in schedule III of Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011,
- Habitats that can be considered as corridors and ‘stepping stones’ for the purposes of article 10 of the Habitats Directive.
- Red data book species.
- And biodiversity in general.

Path: R:\Map Production\2020\P20-211\Workspace\Scoping Report\P20-211_GIS_Fig5-1_EuropeanSitesWithin15km_A3.mxd

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Legend

- Site Boundary
- 15km Buffer of Site Boundary
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)

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W E
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0 2.5 5 10 Kilometers

TITLE:	European Sites within 15km of the Proposed Development		
PROJECT:	Littleton Wind Farm, Co. Tipperary		
FIGURE NO:	5.1		
CLIENT:	Bord Na Móna		
SCALE:	1:175000	**REVISION:**	0
DATE:	13/09/2021	**PAGE SIZE:**	A3

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6.6.2 Assessment Methodology

Desk studies will be undertaken in which ecological databases, such as those of the National Parks and Wildlife Service (NPWS), EPA and NBDC will be consulted. The NPWS, Inland Fisheries Ireland and the main environmental non-governmental organisations will be consulted including Bat Conservation Ireland.

Habitats shall be appraised and evaluated according to their occurrence as protected habitats under Annex I of the EU Habitats Directive (92/43/EEC) and for their capacity to support rare, threatened and endangered species. The methodology used to assess the impact on habitats is based on NRA guidelines (2009[1]), CIEEM guidelines and EPA guidelines. The habitat mapping exercise will have regard to the 'Best Practice Guidance for Habitat Survey and Mapping' (Smith *et al.*, 2011[2]) published by the Heritage Council. In addition to habitat identification, each habitat will be assessed for its ecological significance, based on the National Roads Authority (NRA) Site Evaluation Scheme (NRA, 2009). Annex I habitat surveys are likely to be required, especially for blanket bog, fen and heath habitats known to occur on site.

Botanical surveys for rare plants shall also be undertaken. Rare bee orchids (purple with some yellow variants) are known to be located in the Longfordpass North townland and historical records of blue fleabane are present. Surveys will also be undertaken for invasive plants. Invasive Japanese knotweed is known to occur at Longfordpass.

Given the downstream hydrological from the project's location to the Lower River Suir cSAC (002137), aquatic surveys are required to establish the existing baseline and to examine the potential for protected aquatic species to utilise the watercourses draining the site. Surveys shall be required for aquatic Annex I habitats, freshwater pearl mussel, white-clawed crayfish and fish.

Bat surveys will be undertaken in accordance with 'Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation' (Scottish Natural Heritage, 2019[3]). Winter and breeding roost surveys will be required. Activity surveys will also be required during the bat activity season April to September as per Bat Conservation Ireland and Bat Conservation Trust Guidelines. Three rounds of static detector surveys (spring, summer and autumn) will be required and also a survey at height that will be conducted at the same time as the static detector surveys (using a met mast).

The proposed site will require surveying for terrestrial mammal species including *inter alia* badger, red squirrel, Irish hare, Irish stoat, pine marten, hedgehog and otter. A targeted marsh fritillary survey is required due to the potential for marsh fritillary habitat on-site and historical records within the study area. During the course of ecological surveys of the site, other species of fauna shall be recorded and considered in the ecological appraisal (there are historical records of common frog and smooth newts on site).

[1] NRA (2009). Environmental Assessment and Construction Guidelines. Published by the National Roads Authority.

[2] Smith, G.F., O'Donoghue, P, O'Hora K., and Delaney, E. (2011). Best Practice Guidance for Habitat Survey and Mapping. Published by the Heritage Council.

[3] Scottish Natural Heritage, Natural England, Natural Resources Wales, Renewable UK, Scottish Power Renewables, Ecotricity Ltd, the University of Exeter and the Bat Conservation Trust (2019): Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation.

6.6.3 Potential Impacts

This chapter of the EIAR will address the nationally designated sites, terrestrial and freshwater (aquatic) habitats and species, including those of conservation concern on and in close proximity to the proposed wind farm and including along and in close proximity to the proposed cable route and proposed haul route.

The ecological evaluation of the site and its' biodiversity will be assessed according to NRA (2009). Once the value of the identified ecological receptors (features and resources) is determined, the next step will be to assess the potential impact and resulting effect of the proposed development on the identified key ecological receptors.

This will be carried out with regard to the criteria outlined in various impact assessment guidelines (NRA, 2009; CIEEM, 2018). The impacts will be assessed under a number of parameters such as magnitude, extent, timing, frequency, duration and reversibility. The impact significance criteria detailed in the EPA guidelines (EPA, 2017) will be used where applicable.

Potential impacts that will be considered at design sage of the proposed wind farm on Biodiversity include:

- Direct loss of habitat due to the footprint of the area;
- Damage to adjacent habitats during construction which could potentially be affected by construction activity;
- Impacts during construction on the hydrology of water dependant habitats
- Impacts on water quality both at a local level and regional level due to pollution run-off whether during or post construction;
- Impacts on aquatic species during construction or due to pollution events etc;
- Disturbance to local wildlife, including loss of habitat, disturbance and displacement;
- Damage to or habitat loss of important wildlife corridors or stepping stones during construction. Fragmentation of same at a larger more regional level as a result of habitat loss;
- The introduction of alien invasive species during construction;
- Impacts on the conservation status or constituent parts of designated sites.
- Potential impacts associated with tree felling and any required replanting on designated sites, habitats, Biodiversity.

Potential impacts on European (Natura 2000) sites because of the proposed development will be assessed though the appropriate assessment process.

6.6.4 Appropriate Assessment

An Appropriate Assessment Screening Report and a Natura Impact Statement (NIS) will be prepared in respect of the proposed development, so as to enable the competent authorities to carry out an Appropriate Assessment as required by Article 6(3) of Council Directive 92/43/EEC ("the Habitats Directive") and section 177U of the Planning and Development Act 2000, as amended ("the 2000 Act"). The potential impact to European sites due to tree felling and any proposed replanting shall also be considered.

Where negative effects on a European site cannot be discounted during the Screening for Appropriate Assessment, a Natura Impact Statement will be prepared. The NIS will be a detailed, targeted assessment of the nature and potential significance of direct and indirect impacts arising from the proposed project to assessed if the project will not adversely affect the integrity of a European site.

European sites, as defined in the 2000 Act, comprise both Special Protection Areas (SPAs) for birds and candidate Special Areas of Conservation (cSACs) for habitats and other species, and are designated by Member States pursuant to the requirements of Council Directive 79/409/EEC, now Directive 2009/147/EU, on the conservation of wild birds ("the Birds Directive") and the Habitats Directive, respectively.

There are six SACs located within 15 km from the proposed wind farm site:

1. The Loughans SAC (000407) located c. 7.8 km northeast;
2. Lower River Suir cSAC (002137) located 7.9 km southwest;
3. River Barrow and River Nore cSAC (002162) located 8.9 km southeast;
4. Spahill and Clomontagh Hill cSAC (000849) located 9.8 km northeast;
5. Galmoy Fen SAC (001858) located 11.8 km northeast;
6. Cullahill Mountain SAC (000831) located 13.8 km northeast.

No SPAs are located within 15 km from the proposed wind farm site. The nearest are:

1. River Nore SPA (004233) located c. 18.9 km;
2. Slievefelim to Silvermines Mountains SPA (004165) located c. 27 km northwest;
3. Slieve Bloom Mountains SPA (004160) located 27.7 km northeast;
4. Lough Derg (Shannon) SPA (004058) located 46.3 km northeast.

The site is hydrologically connected to the Lower River Suir cSAC to the southwest (c. 13.2 km instream distance).

Among the qualifying interests protected under the Lower River Suir cSAC designation for this site are eight aquatic species (freshwater pearl mussel, sea lamprey, brook lamprey, river lamprey, twaite shad, salmon, white-clawed crayfish and otter) and seven habitats. The qualifying interest aquatic habitats include water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation and alluvial forests.

The other five SACs lack a downstream hydrological or hydrogeological connection (in separate sub-catchments) to the site and are designated for habitats that are contained within the SAC site boundaries. The considerable remove between the site and the SPAs is outside of the core foraging ranges for avian conservation interest species.

The Loughans SAC and Spahill and Clomantagh Hill are also designated proposed National Heritage Areas (pNHAs).

In addition, there are no NHAs and four other pNHAs within 10 km of the site boundary:

1. Laffansbridge pNHA (000965) located c.3.6 km south
2. Kilcooly Abbey Lake pNHA (000958) located c.5 km east
3. Killough Hill pNHA (000959) located c.8.4 km west
4. Cabragh Wetlands pNHA (001934) located c.9.6 km west

The site is hydrologically connected to Laffansbridge pNHA (c. 6.2 km instream-distance) and Cabragh Wetlands pNHA (c. 14.1 km instream-distance) from the south and west, respectively. Laffansbridge pNHA is designated for calcareous grassland habitats and Cabragh Wetlands is designated for wetland habitats and waterfowl.

The other pNHAs lack a downstream hydrological or hydrogeological connection (different sub-catchment) to the site and/or are designated for habitats that are contained within the pNHA site boundaries. Kilcooly Abbey Lake pNHA is designated for aquatic flora, otters and waterfowl.

For each European Site, the qualifying interests or special conservation interests of each European site will be identified, and the potential effects summarised.

Potential effects on species or habitats will be evaluated with respect to the scale, extent and nature of the effect, for example the area of habitat affected, changes in hydrodynamics, the percentage reduction in species density, potential changes in species distribution. The duration of the effect will be determined in terms of the duration of the works and the amount of time required for the species and / or habitat to be replaced or to recover from the effects. Information on the main alternatives studied by the developer and why they were excluded will also be provided within the AA process.

During the AA process, mitigation measures can be developed to reduce / avoid effects on European Sites.

6.7 Chapter 7: Ornithology

This chapter of the EIAR will address potential impact on Ornithology , including those of conservation concern within and in close proximity to the proposed wind farm; including along and in close proximity to the on-site cable routes; on and in close proximity to the sub-station, tree felling and any required replanting. It will also address the potential impacts on Ornithology from the proposed underground cable between the proposed wind farm and the grid connection point as well as any proposed alterations to the public road network required for the delivery of turbine components.

In particular, the assessment will focus on:

- Birds listed in Annex I of the Birds Directive as well as red and amber listed bird species.

Desk studies will be undertaken in which ecological databases, such as those of the National Parks and Wildlife Service (NPWS), EPA and NBDC will be consulted. The NPWS and the main environmental non-governmental organisations will be consulted.

Bird survey methods have been selected following a review of best practice guidelines, including guidance available from Scottish Natural Heritage (SNH), and following consultation with NPWS and other bodies such as BirdWatch Ireland. Bird surveys have been previously conducted in the winters of 2012/2013 and 2013/2014. Bird Surveys for the proposed development commenced in October 2019 and took place over winter season of 2019-2020 (Oct – March) and Breeding Season of 2020 (April – September). These surveys were carried out by Biosphere on behalf of the applicant. FT took over surveying work for the proposed development in October 2020 and are ongoing at the site.

The scope of the bird survey includes vantage point surveys (from 14 locations around the site), transect surveys, point counts, hen harrier roost surveys and a barn owl survey. Kingfisher and merlin surveys are required due to historical and recent survey records within the study area. Breeding curlew are known to occur in the townland of Derryhogan and breeding colonies of black-headed gull are known to occur throughout the site.

6.7.1 Potential Impacts

Potential impacts of the proposed wind farm on Ornithology includes:

- Disturbance to birds, due to habitat loss;
- The potential collision risk to birds and bats;
- Displacement or disturbance of bird species (including breeding areas) during all phases of the project;
- Displacement or disturbance to breeding waders from areas within the proposed wind turbine envelope;
- Barrier effect on migrating birds, whereby individual species' dispersal or migration routes are affected by the placement of turbines which effectively cause a barrier;

6.8 Chapter 8: Land, Soils and Geology

6.8.1 Aspects to be addressed

The assessment will address soils, subsoils and bedrock geology underlying the proposed wind farm site as well as hydrogeology. The assessment will also consider ground conditions and peat stability.

6.8.2 Assessment Methodology

The methodology for the soils and geology assessment will be in accordance with the guidelines published by the Institute of Geologists of Ireland in 2013, 'Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements'.

Desktop assessments will be followed by site walkovers. Each site walkover will include peat probes and/or use of a hand vane/gouge cores at selected locations to confirm the presence and/or depth of peat (if present) across the project area and to record and identify geological features of interest and drainage. In addition, the following will also be conducted:

- A review of the characteristics of the entire project area (ground and groundwater conditions, topography, vegetation cover/condition and peat formation, if any, across the project area)
- Identification of past and present land use of the project area (peat harvesting, forestry etc.) and their current impact on the existing ground and groundwater conditions
- Identification of potential borrow pit locations (if required)
- Identification of areas for possible reinstatement of peat or other materials and the development of a peat and spoil management plan
- Identification of potential for peat landslide - With reference to slope stability issues in areas where peat is present, reference will be made to the Guidance Note for Peat Landslide Hazard and Risk Assessments Best Practice Guide for Proposed Electricity Generation Developments (2nd Edition, 2017). A peat stability report will be prepared for the site.

Appropriate site investigation works will be undertaken to allow for the characterisation of the ground and groundwater conditions, following guidance in Peat Landslide Hazard and Risk Assessments: Best Practice Guide for proposed Electricity Generation Developments (2nd Edition, 2017).

The data gathered will be used to inform the final location of all turbines and associated infrastructure. An earthworks balance calculation will be prepared for the overall development to assess where excavated material can be beneficially re-used. In addition, an assessment of the volumes of raw material will be made which will in turn be used to validate the size of borrow pits identified.

6.8.3 Receiving Environment

The quaternary geology underlying the proposed wind farm site is predominantly comprised of 'Cut over raised Peat'. There are small pockets of 'Till derived from Limestones' located throughout the south and north sections of the site.

The bedrock underlying the proposed site is composed of multiple formations. Within the centre of the proposed site, the underlying bedrock comprises Ballysteen Formation and is described as dark muddy limestone, shale. There is a small pocket to the north-east of the site which is described as oolitic limestone (Lisduff Oolite Member), described as a thickly bedded, pale blue-grey well jointed oolite. An area south of the proposed site has underlying bedrock identified as Waulsortian Formation and is described as massive, un-bedded lime-mudstone. The Waulsortian Formation has also been identified throughout the north-west of the site location but is described as dolomitised, massive, fine-grained limestone. Throughout the south-east, south-west and north-west corners of the site, the underlying bedrock has been identified as Crosspatrick Formation and is described as pale grey cherty crinoidal limestone.

The proposed development lies within two groundwater bodies (GWB). The centre of the proposed site lies within the Templemore A GWB, which has a flow regime classed as poorly productive bedrock. The rest of the site is located within the Thurles GWB, which as a flow regime classed as Karstic.

Multiple groundwater aquifers have been identified within the site boundary. Within the centre of the proposed site, the aquifer is described as a locally important aquifer – bedrock which is moderately productive only in local zones. There is a small pocket to the north-east of the site with is described as a locally important aquifer – bedrock which is generally moderately productive. The south of the proposed site has an aquifer described as a regionally important aquifer – karstified. The north-west area of the site is described as a regionally important aquifer – karstified (diffuse). Throughout the south-east, south-west and north-west corners of the site, the groundwater aquifer has been identified as a locally important aquifer – bedrock which is generally moderately productive.

No karst features have been identified within the site boundary.

A Geological Heritage Area is noted within the site boundary. The geological heritage area is identified as Littleton Bog, and is described as an extensive area of peatland in a wide and extensive flat plain northwest of Slieve Ardagh.

There have been no recorded landslide events on-site or within 10km of the site boundary.

6.8.4 Potential Impacts

The potential impacts of the development of the wind farm on the land, soils, geology, hydrogeology and slope stability are:

- The excavation and removal of soil and rock and interference with any existing drainage has the potential for direct permanent effect that, without mitigation, could alter the existing hydrogeological balance;
- The construction of the turbines, hardstanding areas, substation, access tracks, borrow pits and cable trenches has the potential to cause hydrogeological impacts by modifying the natural groundwater levels adjacent to the excavation. This in turn may deprive ditches and steams of their natural supply of water which may lead to reduced base flow and recharge to the bedrock aquifer;
- Areas which are underlain by peat deposits are susceptible to slope stability issues, including peat slides and bursts, when changes are made to topography, hydrogeology and hydrology of the area.
- The use of granular fill and other materials for the construction of the internal roads and hardstanding areas has the potential to impact on the source quarries or borrow pits;

- Excavations have the potential to increase erosion and sediment release that could also have additional impacts on water quality due to sedimentation of water courses;
- Soil compaction may occur due to movement of construction and maintenance traffic;
- Removal of sub soils may result in the exposure of the underlying rock to sources of contamination and may increase the vulnerability of the aquifer, whether or not the rock is exposed;
- Chemical pollution may occur as a result of an accidental spillage or leakage of chemicals, runoff from vehicle washing facilities, unset concrete, storage of fuels or refuelling activities, etc. Chemical pollutants may enter the groundwater and have implications for ecology and any wells in the area, particularly those located down-gradient of the project; and
- Sanitary waste arising from temporary construction compounds could lead to contamination of groundwater.

6.9 Chapter 9: Hydrology, Hydrogeology and Water Quality

6.9.1 Aspects to be Addressed

The assessment will address impacts on hydrology and water quality associated with the proposed Littleton Wind Farm project.

6.9.2 Assessment Methodology

Site visits will be undertaken to establish the constraints relating to hydrology and to acquire a basic knowledge of water management on the site. The information gained on these site visits will provide input into the design layout with the aim of minimising river/stream crossings, providing a buffer to hydrological features and avoiding areas of significant flood risk.

The desk study will involve setting out the principles for surface water management and treatment for the site specific land use at the proposed wind farm. The study will consist of a review of existing baseline data including water quality data from the EPA, River Basin Management Plans and flood risk data from the OPW. The review will include the County Development Plan and consideration of the policies and objectives of the Plan in relation to surface water and flooding.

Any concerns expressed by consultees such as Inland Fisheries Ireland and the local authority, relating to hydrology and drainage, will be addressed. Additional water sampling will be carried out to fill any gaps in baseline data.

Once the design layout is fixed, a further site visit will be scheduled in to undertake a walkover of the site, to confirm that the proposed development infrastructure is appropriately sited. All the streams locations crossed by the proposed layout and grid cable route will be inspected and crossing method of the grid cable will be proposed.

The following will also be included as part of the assessment for Hydrology:

- Identify potential impacts of the proposed development on hydrology (hydrodynamics and flooding).
- Identify potential cumulative hydrological impacts of the proposed development with any neighbouring wind farms.
- Consider potential drainage into sensitive catchments.
- Site drainage investigation will involve identification of drainage sub-catchments, studying the requirement(s) of cross-drainage works, etc.
- Identification of mitigation measures for flooding and pollution of receiving waters.
- Identification of residual impacts.

The Hydrology Chapter will include a section on flood risk identification and assessment. This will include an assessment of the potential increase to flooding elsewhere and it will examine the potential flood risk to the proposed development. The type of development will be assessed in accordance with the Planning System and Flood Risk Management Guidelines for Planning Authorities, November 2009 (as amended). Where parts of the development are located on areas encroaching on floodplains, this may require additional drainage measures and further measures required to mitigate flood risk.

Mitigation, such as attenuation of surface water run-off from the site, will be proposed where increases in flood risk are deemed to be significant. In the case of essential infrastructure such as a sub-station, these are not permitted to be in a floodplain.

For the internal roads, stream crossings will be identified, and a preliminary design of the proposed stream crossings will be prepared and assessed in the EIAR. The accommodation of overland flow will be assessed and suitable locations for the treatment of discharges identified.

6.9.3 Receiving Environment

The proposed wind farm is located within Suir_SC_040 sub-catchment. The southern part of the site drains into the Breegagh Stream and North Glenogoole Stream. Both streams run in southeast-northwest direction. The North Glenogoole Stream is a tributary of the Black (Two Mile Borris).

The eastern part of the site is bounded by 2 streams, the Black (Two Mile Borris) Stream and Old Deer Park Stream. These streams are tributaries of the Drish Stream.

Drish Stream joins the River Suir, which forms Lower River Suir SAC (002137), approximately 7.8km northwest of the study area.

The western part of the site is drained by small unnamed streams which ultimately join the Clover Stream. This stream is also a tributary of the Drish Stream.

6.9.4 Potential Impacts

The assessment will address the potential for construction, operational and decommissioning impacts on water quality in the receiving watercourses.

The main potential impact from the construction of the wind farm development is the potential increase in runoff and sedimentation of watercourses. Rainfall run-off containing silt could potentially lead to siltation and consequent physical effects on flora and fauna in aquatic habitats.

Sediment has the potential to arise from:

- Excavations for the turbine bases, hardstand areas, substation location, compounds etc.; if left exposed, spoil heaps could lead to an increase in silt-laden run-off draining off site.
- Haulage roads passing close to watercourses could allow the migration of silt-laden run-off into watercourses.
- Tree felling could lead to an increase in sediment in the surface water run-off.
- While the cable trench is open adjacent to a watercourse and at stream crossings, this could lead to an increase in the concentration of suspended solids in the watercourse.

In addition, possible impacts on water quality during construction activity include:

- Concrete operations could contaminate receiving waters.
- Runoff from vehicle washing facilities could lead to contamination of receiving waters.
- Refuelling activities could result in fuel spillages.

Other potential impacts on hydrology and drainage that may arise from the proposed development of the wind farm site include impacts on localised flooding patterns and downstream structures as well as cumulative hydrological impacts with neighbouring developments.

During the operational phase of the wind farm, potential impacts on water quality will arise from potential spillages of lubricants, coolants and hydrocarbons in the operations of the turbine transformers as well as routine maintenance of all plant and equipment.

6.10 Chapter 10: Air Quality and Climate

6.10.1 Aspects to be Addressed

The assessment will address the potential impacts on air quality, climate and weather due to construction, operation and decommissioning of the proposed development. The assessment will also include Carbon Balance calculations for the project.

6.10.2 Assessment Methodology

Air quality monitoring conducted by the EPA at a number of locations in the vicinity of the project will be reviewed and levels compared with the air quality standards. To assess the impacts of construction dust emissions, the approach and assessment criteria will follow the following guidance; Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (2011); Guidance on the assessment of dust from demolition and construction (Institute of Air Quality Management (IAQM), 2014); and Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance (IAQM, 2011).

For the purposes of assessing the impact on air quality of emissions generated by construction traffic, the methodology described in the Design Manual for Roads and Bridges (DMRB) (Volume 11, Section 3 Air Quality, May 2007) will be used. Parameters to be assessed will include oxides of nitrogen, particulates PM10 and PM2.5, carbon monoxide and benzene.

The potential micro-climatic impacts of the proposed Littleton Wind Farm will be assessed in relation to the micro-climatic baseline, the scale of the elements of the project and the nature of use of the surrounding environment.

For the assessment of macro-climatic effects, the emissions of carbon dioxide (CO_2) and other greenhouse gases from fossil fuel power generation, which will not be required should the proposed Littleton Wind Farm become operational, will be quantified and assessed in the context of current climate change policy and protocols.

6.10.3 Receiving Environment

In terms of micro-climate, the proposed wind farm is located in a rural area corresponding to air quality zone D, Rural Ireland, in the Air Quality Regulations SI 180 of 2011, as amended. Therefore, the air quality is expected to be good.

The macro-climatic baseline is the future emission of CO2 and other greenhouse gases, which would be produced by fossil fuel power generation in the country, in the absence of the proposed wind farm.

6.10.4 Potential Impacts

The construction phase of the proposed Littleton Wind Farm has the potential to generate dust emissions, which could give rise to nuisance for local residents. To assess the impacts of construction dust emissions, the approach and assessment criteria outlined in the Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (National Roads Authority, 2011) and EPA Guidelines will be used.

Construction plant and equipment, and the traffic generated by the construction process, have the potential to give rise to emissions of oxides of nitrogen, benzene and particulates, which could impact on local air quality. The operation of the proposed wind farm is not expected to have a negative impact on air quality.

The proposed Littleton Wind Farm is expected to have a positive impact on emissions of CO2 and other greenhouse gases. It is expected that the proposed development will have a positive impact on Air Quality including NOx and Sox, a calculation of same will be included in the EIAR.

6.11 Chapter 11: Noise and Vibration

Aspects to Address

The chapter will address noise and vibration impacts from the construction, operation and decommissioning of the proposed wind farm.

Assessment Methodology

The noise assessment will be carried out on each phase of the wind farm:

- Construction phase
- Operational phase, including turbine and sub-station operations
- Decommissioning phase, including dismantling the turbines, and related traffic.

The Wind Energy Development Guidelines (2006) are currently the statutory guidelines for carrying out noise assessments for wind energy development in Ireland. . The Wind Energy Development Guidelines 2006, the Draft Wind Energy Guidelines (2019) and the Institute of Acoustics (IOA) 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' will all be considered in developing and assessing the wind farm.

The noise impact assessment will involve measurement of background noise levels and predicting noise impacts from the proposed development and nearby operational and consented developments.

The background noise levels will be used to derive noise limits in accordance with relevant guidelines at the time the development is submitted for planning. In the event that the predicted noise levels exceed the noise limits, mitigation measures will be outlined.

Construction/decommissioning noise predictions will be carried out to determine the noise levels at the nearest noise sensitive locations. Noise prediction will be carried out using British Standard BS 5228-1:2009+A1:2014, Code of practice for noise and vibration control on construction and open sites – Part 1: Noise. Predicted construction noise levels will be compared against noise levels in BS 5228:2009+A1:2014 Part 1. Where the impact significance identifies a requirement for mitigation, mitigation measures will be outlined.

Receiving Environment

All dwellings in proximity to turbines have been identified. A minimum setback distance of at least four times the tip height from dwellings will be implemented as part of the turbine layout design process.

Potential Impacts

Potential noise impacts will be addressed at the design stage by locating turbines appropriately set back from sensitive receptors and where necessary by employing turbine noise reduced modes of operation to comply with the noise limits in force at the time of application.

Key Issues/Considerations

Cumulative Noise

There are several operational wind farms within 12 km from the proposed Littleton WF. 12km is considered to be the zone of influence for cumulative noise assessment in accordance with relevant guidelines. Cumulative noise impacts will be considered at design stage and will be assessed in the EIAR with respect to proximate wind energy developments. Furthermore, cumulative noise impacts of the proposed development in combination with other planned or permitted projects in the area will be considered.

6.12 Chapter 12: Shadow Flicker

6.12.1 Aspects to be addressed

This chapter will address the potential effects of shadow flicker associated with the proposed development, i.e. the moving shadows cast by the turbine blades in times of direct sunlight.

6.12.2 Assessment Methodology

A shadow flicker assessment will be carried out using ReSoft Wind farm software which will calculate times throughout the year when a turbine, viewed from the window of a house, is in line with the sun, and therefore the potential exists for shadow flicker to occur. All occupied and unoccupied dwellings and permitted houses (that are not yet constructed) as well as any other property considered sensitive (schools etc) within 10 rotor diameters of a proposed turbine will be included in the assessment.

The effect of shadow flicker is not considered significant beyond the distance of 10 rotor diameters from each turbine location.

The outputs of the modelling assessment will be used to identify the potential direct and indirect impacts of shadow flicker on dwellings. The results will be compared with relevant guidance including:

- Section 5.12 of the 2006 Department of Arts, Heritage and the Gaeltacht (DoEHLG) Planning Guidelines on Wind Energy Developments (2006).
- Section 5.8 of the Department of Housing, Planning and Local Government's Draft Revised Wind Energy Development Guideless (2019)
- The Irish Wind Energy Association 'Best Practice Guidelines for the Irish Wind Energy Industry' (2012).

Cumulative impacts of the proposed Littleton Wind Farm and other third-party schemes will be assessed. IWEA Best Practice Guidelines (2012, Section 6.3.4) states that "any such wind farm developments within 2 km of the proposed development should be considered in a separate cumulative shadow flicker assessment. It is therefore unlikely that cumulative impact will occur from shadow flicker as there are no existing or permitted wind farms within 2km distance of the project site.

6.12.3 Receiving Environment

The general receiving environment is rural with a number of small towns and villages in the surrounding area. The majority of buildings in the vicinity of the proposed development are residential or agricultural buildings. Much of these receptors are located in clusters to the east and west of the site with sparser densities located to the north and south of the project site.

6.12.4 Potential Impacts

In times of direct sunshine, wind turbine blades could occasionally cast moving shadows on residences in close proximity to the turbines. At certain times of the year, the moving shadows of the turbine blades can periodically reduce light to a room causing the light to appear to flicker. Shadow flicker would not generally have any effect on health or safety but could on limited occasions present a brief nuisance effect.

6.13 Chapter 12: Landscape and Visual

6.13.1 Aspects to be Addressed

The landscape and visual assessment report will appraise the existing landscape character of the project area and its wider setting in order to assess the likely landscape, visual and residential amenity impacts arising from the proposed development. A Study Area of 30km is defined as set out in best practice guidance recently updated by Scottish Natural Heritage 2017. A suitable, bespoke study area will be proposed following further detailed analysis of the project.

Potential mitigation measures are also included. Aspects to be addressed in the EIAR are:

- ✓ Receiving environment, covering details on:
  - o Wider landscape context
  - o Localised site context.
  - o Landform, landcover, land use patterns and trends
  - o Key/unique landscape elements and features
  - o Defining attributes of the wider landscape
- ✓ Landscape character, covering details on:
  - o Character as outlined in CDP
  - o Associated landscape values
  - o Sensitivity levels within the landscape
  - o Statutory designations
  - o Landscape designations
  - o Scenic/amenity routes
  - o Views and prospects
  - o Features of natural and built heritage
- ✓ Landscape Policy Context
  - o Relevant policy objectives within the Tipperary County Development Plans, Landscape Character Assessment and LAPs
  - o Relevant policy objectives within neighbouring counties within the 30km Study Area (Objectives appendicised).
- ✓ Visual context
  - o Zone of Theoretical Visibility
  - o Viewshed Reference Points (Detailed findings appendicised).
  - o Route Screening Assessment (Detailed findings appendicised).

Assessment of these aspects will ultimately inform potential landscape, visual and amenity aspects, residual impacts, and in turn appropriate mitigation measures to ensure impacts are not significant.

6.13.2 Assessment Methodology

The LVIA Methodology can be summarised as undertaking the following key tasks:

- Desktop study of the project area in relation to its overall wider context;
- Visit to the project area and its environs;
- Visit to assess residential amenity impacts;
- Visit to assess route screening;

- Defining the baseline general landscape character, setting, and condition in relation to the position of the proposed development;
- Engagement with relevant landscape and amenity planning designations with the study area as outlined in the North and South Tipperary County Development Plans and the Draft Tipperary County Development Plan 2022 and any relevant policy within neighbouring county Kilkenny which fall within the 30km study area;
- Identification of quality and types of views in the areas;
- Establishing the extent of the visual envelope, i.e. the potential area of visibility of the project area in the surrounding landscape;
- Identification and evaluation of key components of the proposed development;
- Assessment of potential landscape and visual impacts, and residual impacts;
- Assessment of potential cumulative impacts with proposed/existing developments in the area;
- Preparation of Zone of Theoretical Visibility Maps (ZTVs) to a radial distance of c.30km from the project area; and
- Consideration of mitigation and enhancement measures.

The LVIA methodology is guided by the following guidance:

- Department of Environment, Heritage and Local Government 2006, Wind Energy Development Guidelines for Planning Authorities.
- Department of Housing, Planning and Local Government 2019, Draft Revised Wind Energy Development Guidelines.
- Environmental Protection Agency, 2002, Guidelines on the information to be contained in Environmental Impact Statements.
- Environmental Protection Agency, 2003, Advice Notes on current practice in the preparation of Environmental Impact Statements.
- Environmental Protection Agency, 2015, Draft Revised Guidelines on the information to be contained in Environmental Impact Statements.
- Environmental Protection Agency, 2017, Draft Revised Guidelines on the information to be contained in Environmental Impact Statements.
- Environmental Protection Agency, 2015, Draft Advice Notes on current practice in the preparation of Environmental Impact Statements.
- Landscape Institute, and Institute of Environmental Management & Assessment, 2013, Guidelines for Landscape and Visual Impact Assessment, 3rd Ed.
- Scottish Natural Heritage, 2017, Visual Representation of Wind Farms, Version 2.2.

The impact significance criteria used in the assessment are based on the EPA Guidelines, 2002 and Advice Notes, 2003 with reference also to EPA's draft 2017 revised guidelines and the 2015 draft Advice Notes.

6.13.3 Receiving Environment

The proposed Littleton wind farm is located in an extensively flat peatland context that has some sensitive landscape and visual receptors. The surrounding landscape also comprises of a rural population and encompasses a number of nearby settlements, the nearest of which (Ballinonty) is situated just over 1.7km southeast of the site boundary.

Some of the more sensitive receptors include Kilcooley Abbey and Warehouse Hill, both of which are situated to the east/southeast of the site and Liathmore Churches located outside the western boundary of the site. The site is also bound by a number of scenic routes, one of which is situated along the M8 motorway between the northern and southern extents of the site and another which is situated along the nearest regional road to the east of the site.

The proposed wind farm site is situated in the landscape archetype 'Plains' and the landscape character type 'A2 Peatlands & Wet Mixed Farmland' as defined in the County Development Plan. This principal landscape character type is sub-divided into three landscape character areas, of which, the proposed development is situated between 'LCA 8 – Littleton Raised Bog' and 'LCA 9 – Littleton Farmland Mosaic and Marginal Peatland'. LCA 8 is identified with a landscape sensitivity ranging from 'Class 1-Normal' to 'Class 3-Sensitive' although its dominant sensitivity classification is that of 'Class 3-Sensitive' ('limited' capacity to accommodate development).

Similarly to this, LCA 9 is also identified with a landscape sensitives ranging from 'Class 1-Normal' to 'Class 3-Sensitive', however its dominant sensitivity classification is that of 'Class 1-Normal' ('high' capacity to accommodate development). It is important to note that sensitivity rating in the Tipperary County Development Plan range from 'Class 0-Robust' to 'Class 5-Vulnerable'. Both of these landscape character areas have been identified with a 'medium' land use compatibility with regard to wind farm developments.

The nearest scenic views to the proposed development are New Views 10 and 11 and View 33. The nearest of these is New View 11 which is situated between the site on the M8. The view here is oriented to the north and will look across the northernmost extents of the proposal site (no turbines proposed in this aspect of the site – view is also currently characterised by existing wind turbines). View 33 is situated to the east/southeast of the site and is oriented to the east. V33 will likely have a clear view of the proposed development. A number of scenic views are also located within the wider study area, one of note is V29 from Warhouse Hill. Views here are elevated and oriented east and west and will likely have a view of the proposed development.

The entire site and its immediate surrounds are situated in an area classified as 'Areas Open for Consideration for New Wind Energy Development'. The nearest area deemed 'Unsuitable for New Wind Energy Development' occur some 3km to the east of the site.

Wind farms sites in the surrounding landscape will be identified for potential cumulative impact in the EIAR.

6.13.4 Potential Impacts

In the European Landscape Convention, landscape is defined as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'. The term "landscape" is thus defined as a zone or area as perceived by local people or visitors, whose visual features and character are the result of the action of natural and/or cultural factors. Recognition is given to the fact that landscapes evolve through time and are the result natural and human activities.

Landscape and visual impact assessment has two separate but closely related aspects. The first is visual impact, i.e. the extent to which the wind turbines in the landscape can be seen. The second is landscape character impact, i.e. effects of the wind turbines on the fabric or structure of the landscape as perceived by people. Landscape character is derived from the appearance of the land and takes account of natural and man-made features such as topography, landform, vegetation, land use and built environment and their interaction to create specific patterns that are distinctive to particular localities.

The proposed wind turbines will be large structures with the potential to have significant landscape and visual impacts. The development of wind farms, including associated infrastructure such as tracks and ancillary buildings, may have a major impact on the surrounding landscape.

Key to the development of the project will be the need for clear communication of the scale and extent of the proposed project. Clear and concise mapping of the existing areas of landscape and visual sensitivity together with photomontages of the proposed wind turbines will be essential in demonstrating the nature and extent of the development.

Zone of Theoretical Visibility Mapping (ZTV's) will be prepared based on the Department of the Environment, Heritage and Local Government's 'Wind Farm Planning Guidelines'. The ZTV's will illustrate the study area extending to 30km around the proposed project area and highlight the areas where the proposed turbines will theoretically be visible from, as well as the cumulative visual impact arising from the existing and planned wind farms in the surrounding area. These ZTV's do not take into consideration vegetation cover, changing weather conditions or the mitigating effect of distance and therefore illustrate the worst-case scenario of visibility.

Estimation of the visual impact of the proposed scheme on the landscape will be based on the visual presence of the turbines, their aesthetic impact the landscape context and the significance of the impact. The assessment will examine potential landscape and visual impact of the proposed turbines on designated landscape, properties, roads, recreation and tourism areas, including;

- Direct effects on landscape features, views, routes and areas described in the County Development Plans and Landscape Character Assessments. The review of the landscape setting will account for a 30km study area from the project boundary, thereby including parts of County Kilkenny. Assessments of and objectives for landscape character will be looked at in the Kilkenny County Development Plan to ensure a consistent and integrated appraisal of the area within this 30km area.
- Potential changes to landscape and townscape character referring to the County Landscape Character Assessments noting subtle effects that contribute to the experience of more intangible landscape characteristics. Landscape types, significance/value, sensitivity and capacity for change will be examined.
- Effects on designated landscapes, views, conservation sites (including significant archaeological sites) and other special areas of interest.
- Effects during construction and decommissioning.

Viewshed reference points (VRP) from the surrounding landscape will be identified from the desktop studies outlined above and will be verified on site. Photomontages from these viewshed reference points will be prepared for the proposed wind turbines, together with a wireframe and photomontage views of the other planned/permitted wind turbines in the landscape, to assist in demonstrating the levels of visual impact.

6.14 Chapter 14: Archaeology, Architectural and Cultural Heritage

6.14.1 Aspects to be Addressed

The assessment will address features and sites of archaeological, architectural and cultural heritage significance. The purpose of the study will be to assess the significance of the receiving cultural heritage environment and to identify and evaluate the magnitude of the impact of the proposed wind farm on the sensitivity of each cultural heritage feature within this environment and on the broader historic character of the landscape. Measures will be proposed to mitigate effects (where possible) so as to allow a fully informed decision to be made by the adjudicating authority.

6.14.2 Assessment Methodology

The assessment will comprise a desk study and field walkover survey and will be based on EPA guidelines and relevant national and international best practice guidelines.

Desk Study

A review of the following information will be carried out to inform the cultural heritage assessment report:

- A review and collation of information obtained from public and statutory consultees, for example nationwide surveys such as the Record of Monuments and Places (RMP) (including National Monuments in State Care, NIAH, RPS and landscape characterisation;
- A review of designated archaeological landscapes;
- A review of the Record of Protected Structures and Architectural Conservation Areas (ACA's) in the North Tipperary County Development Plan 2010 (as varied) and the South Tipperary County Development Plan 2009 (as varied) including the Draft Tipperary County Development Pan 2022-2028;
- A review of the National Inventory of Architectural Heritage (NIAH) building survey sites, NIAH historic gardens and designed landscapes survey sites;
- A review of artefactual material held in the National Museum of Ireland Archives National Museum of Ireland;
- Review of Bord Na Móna records and agreed code of practice with the National Monument Service;
- A literature review of published and key references appropriate to the wind farm project including material from local interest groups and historical and archaeological societies;
- Collation of information from similar or other infrastructure projects in proximity to the proposed wind farms, for example EIARs, SEAs, conservation plans, archaeological test assessments and excavations (including the Database of Irish Excavations) Cartographic sources;
- A review of place names folklore/traditions and Gaeltacht areas;
- Other documentary sources; and
- A review and interpretation of aerial photographs and LiDAR imagery to be used in combination with historic mapping to map potential cultural heritage assets.

Field survey

At design stage the assessment will include a field assessment of the wind farm site, the survey will confirm the location of recorded cultural heritage sites and will record their baseline condition; as well as the archaeological potential of all areas within the wind farm project area and areas likely to be affected by the proposed development works. Fieldwork will also identify any unrecorded features of architectural or cultural heritage merit and will assess if they will be impacted by the development.

Field walkover surveys will also be undertaken along all proposed infrastructure including cable routes and access roads

Fieldwork will also seek to identify previously unrecorded roadside cultural heritage features (such as milestones, water pumps and stone bridges etc.) and structures.

A survey of alignments and views from historic sites including stone circles and stone rows located in the surrounding landscape will be assessed.

Setting

Every landscape presents different topographical and environmental conditions, land cover and land usage and as such the location, scale and physical form of each element of wind farm projects and associated works are site specific. As a consequence, the range of potential impacts depends on the individual circumstances of each proposed turbine and the combined contribution of the overall setting of the wind farm.

Based on the Zone of Theoretical Visibility, designated architectural, archaeological and cultural heritage features will be considered up to 5km of the development boundary. All undesignated cultural heritage features will be considered up to 500m of the development boundary. Selected highly sensitive heritage assets of national and international importance will be considered within 30km of the proposed development. The assessment of potential impacts on the setting of such assets will be carried out in consultation with the Landscape and Visual consultants for the proposed development and will include a review of relevant photomontages.

The reporting process ensures that all designations relating to heritage assets as well as cultural heritage features that are revealed through research, field assessment and consultation are clearly articulated. All relevant designated heritage assets will be mapped and lists all relevant cultural heritage constraints will be prepared.

Interactions and consultation

The scale, form and layout of the proposed wind farm development requires a collaborative and iterative design development process with designers, archaeologists and landscape and visual specialists interactively engaged in the process from the outset. Consultation with statutory and non-statutory bodies will also take place throughout the process.

6.14.3 Receiving Environment

A review of the project landholding has revealed that the Sites and Monuments Record and the Record of Monuments and Places list 32 recorded archaeological sites within its boundary. These comprise a range of prehistoric timber trackways and platforms, some of which were initially identified in the 1960s while further examples were identified during archaeological surveys and excavations commissioned by Bord na Móna and National Monuments Service in 2006 and 2008.

The following overview of the site types within the landholding provides brief Archaeological Survey of Ireland scope notes for each classification:

Table 6-1: Overview of recorded archaeological sites within project area

Classification	Amount	NMS Scope Note
Class 2 togher	9	A length of peatland trackway, constructed of wood, believed to be over 15m in length. These have a clear orientation and good structural definition.
Class 3 togher	5	A short stretch of peatland trackway, constructed of wood, up to 15m in length with a discernible orientation. It may not be possible to trace them beyond a single sighting. These have evidence of deliberate structure and are interpreted as laid down to cross a small area of bog.
Road/trackway	1	A way, or section thereof, which has been deliberately constructed between places.
Unclassified togher	7	A peatland trackway/causeway constructed of wood that cannot be classified as a class 1, class 2 or class 3 togher due to its form or lack of surviving evidence.
Peatland Platforms	5	A non-linear artificially raised area, usually of wood, with or without a clear shape found in a peatland context. Although platforms can vary in size, the length rarely exceeds the width.

There is a noted concentration of these sites within a narrow area of bog in the northern end of the landholding indicating that they were constructed to take advantage of a short crossing point across the wetlands. The existing condition of the recorded sites within the landholding will be determined.

A preliminary review of the locations of National Monuments in State Ownership/Guardianship within the wider landscape has revealed that there are 14 examples within 20km of the project area and the majority of these comprise early or late medieval ecclesiastical sites as well as several late medieval tower houses. Of particular note is an ecclesiastical complex known as Liathmore Churches (NM no. 266) which is located c.480m outside the west boundary of the project area and contains a number of individual recorded archaeological sites, including the remains of two church buildings.

There are no Protected Structures or features listed in the National Inventory of Ireland located within the project area or within 1km of its boundary. In addition, a review of 19th century Ordnance Survey mapping indicates that the landholding comprised vacant peatland during that century and no farm buildings or other vernacular structures are depicted within the boundary. The potential for the presence of undesignated features of cultural heritage interest within the landholding, including features associated with early modern peat extraction works, will be reviewed during the assessment process.

6.15 Chapter 15: Traffic and Transportation, Aviation, Telecommunications and Electromagnetic Interference

Traffic and Transportation

6.15.1 Aspects to be Addressed

The traffic impact assessment will address the traffic impacts on the road network from the construction, operation and decommissioning of the proposed Littleton Wind Farm.

6.15.2 Assessment Methodology

A traffic impact assessment will be conducted in accordance with the Transport Infrastructure Ireland (TII) Traffic and Transport Assessment (TTA) Guidelines, May 2014. Data collected from road traffic surveys along the delivery route will be used in the assessment.

A route survey, including swept path analysis, will be carried out by a specialist transport consultant between the port of entry options and proposed project entrance locations. This survey will identify potential pinch points and locations that may require off site temporary upgrades to facilitate the safe transport of the turbine components to the development area.

Auto Track vehicle swept path analysis (SPA) will be conducted for all potential pinch points along the public road identified in the transport route survey, to ensure that the delivery of turbine components to the proposed wind farm site can be facilitated while also identifying any mitigation measures that may be required and identifying any third party land take requirements. SPA is also carried out for the design of proposed site access points and internal wind farm road junctions as necessary to ensure compliance with turbine manufacturer civil engineering design requirements.

The methodology for the traffic impact assessment will include a review of the traffic volumes and impacts which will be generated by the construction, operation and decommissioning of the wind farm. The likely traffic that will be generated by each phase of the project is estimated to identify potential disruptions to existing road users within the study area.

Based on the project construction methodologies, an estimate of the number of vehicles generated as a result of the project is calculated and the potential for impacts on existing public road links and junctions is considered and assessed. These estimates are used to assess the impact on the road network in numerical terms in the form of annual average daily vehicle trips (AADT).

The potential for soiling or damage to public road infrastructure through poor construction practices as well as potential health and safety hazards through poor traffic management are also identified.

The effects of the project on the existing road network are then considered and described in terms of quality, duration and significance. Mitigation measures are then proposed followed by identification of residual impacts.

The assessment uses a combination of field surveys, data counters, desktop studies and consultation.

The following guidance shall be used during the assessment of traffic and transport (non-exhaustive list):

- TII Publication: Traffic and Transport Assessment Guidelines, NRA, 2014;
- TII Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections, 2019;
- EPA Guidelines on The Information to Be Contained In Environmental Impact Assessment Reports (DRAFT), 2017;
- TII Project Appraisal Guidelines for National Roads: Estimating AADT on National Roads, October 2016;
- TII Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions) DN-GEO-03060 April 2017;
- Guidance on the preparation of the Environmental Impact Assessment Report, European Commission, 2017;
- County Development Plans.

Traffic count data shall be obtained from open-source TII traffic counter information, consultation with Tipperary County Council Roads Department and private traffic count data where required.

The traffic generated by the construction workforce, by the transport of materials and equipment as well as future maintenance-related activities will be predicted. The traffic distribution pattern on the local road network during construction will be examined and impacts determined. The potential disruption to the road network during the installation of the cables and the availability of alternative routes will be assessed, where required. Recommendations will be made to mitigate any potential traffic impacts on the road network.

Transport Infrastructure Ireland (TII) shall be consulted through the EIAR scoping process. Tipperary County Council Roads Department engineers shall also be consulted.

Site access points shall be designed in accordance with TII and County Development Plan requirements for direct access geometric design and visibility sightlines.

Cumulative traffic impacts will be considered at design stage and will be assessed in the EIAR with respect to other planned developments in the area.

6.15.3 Receiving Environment

The project site is located adjacent the R639 regional route and M8 motorway which run north east to south west, to the west of the site. The R689 is located to the east of the site. The southern section of the site is bisected by an unnamed local road which connects Littleton to New Birmingham and the L4101 local road is located at the southern extent of the site. There are a number of forestry access tracks in close proximity to the site and a bog railway runs through the site which underpasses the road network.

6.15.4 Potential Impacts

The greatest potential for traffic impact from the proposed Littleton Wind Farm is during the construction phase which will give rise to additional traffic on the road network.

The turbines will be delivered to the proposed project area in separate parts, comprising of loads for each of the towers, the rotor blades, the nacelle, the rotor hub, the turbine base and the electrical components. From the port of entry the delivery route will consist of the national primary route network as much as possible. Modifications may be required to the existing local road network to cater for the delivery of the oversized loads.

Stone aggregate will be required for the upgrading of existing tracks and construction of new roads as well as the construction of turbine bases and hardstands. All of these activities have the potential to generate significant local traffic numbers.

There will be an increase in local traffic during the construction of the wind farm associated with the workforce travelling to and from site. In addition, there is potential for an increase in local traffic due to onlookers as the turbines are erected.

There will also be temporary traffic impacts from cable laying works on the public roads. These impacts will be managed to reduce the nuisance being caused to local road users.

Aviation and Telecommunications

6.15.5 Aspects to be Addressed

The rotating blades of a wind turbine can occasionally cause interference to electro-magnetically propagated signals. Such interference could, in theory, affect all forms of electromagnetic communications including:

- Satellite communications
- RADAR
- Cellular radio communications
- Aircraft instrument landing systems
- Air traffic control
- Terrestrial microwave links
- Television broadcasts

In addition, it is possible that houses in the immediate vicinity of the turbines could require some remedial measures in relation to television reception.

The EIAR will include an assessment of any such potential impacts.

6.15.6 Assessment Methodology

An evaluation of the possible effects that the proposed development could have on aviation and existing telecommunications networks will be conducted.

A study will be undertaken to analyse the impact of the turbines on telecommunications operator's point-to-point microwave radio links. All relevant operators in the area will be consulted to identify links and to agree defined buffers where required.

This evaluation will include the generation of GIS based telecommunications constraints mapping for the areas affected. The purpose of this mapping is to identify potential negative impacts on the telecommunications network and facilitate the selection of optimum sites and turbine locations by avoiding telecommunication links where possible, and thereby limiting any potential negative impacts on service providers in the area.

The proposed assessment methodology will include:

- Consultation with Irish Aviation Authority, Department of Defence, Commission for Energy Regulation, emergency services;
- Consultation with telecommunications operators to gather the necessary data;
- Preparation of constraint mapping based on feedback on consultation and design the project with the appropriate buffers in place.
- Further specialist investigations will be carried out if the telecommunications operators identify potential impacts; and
- Where necessary, mitigation measures to be agreed with operators including:
    - Turbine relocation
    - Telecommunications link relocation
    - Underground fibre optic cables to replace microwave link
    - Submission of final detailed layout to telecoms operators.
    - Agree any layout alterations following final detailed assessment by telecoms operators or agree suitable mitigation measures if necessary.

Impacts on aviation will be considered following detailed discussions with the Irish Aviation Authority.

6.15.7 Receiving Environment

An initial desktop study has been conducted to identify telecommunication infrastructure in the area of the proposed project. The Comreg site viewer4 identifies several telecom masts in the surrounding proximities of the project.

7 no. mast locations have been identified within ca. 5 km of the project site. 4 of these are located along the M8/R639 road corridor. One mast site has been identified directly at the south of the site and two further telecommunications mast are located south and south east of the proposed wind farm site.

All operators of these masts will be contacted in relation to the project and the information will be analysed and the project will be designed around any potential constraints. This approach is proving successful on similar wind farm projects.

[4] http://siteviewer.comreg.ie/#explore

The most proximate airport/aerodrome is Kilkenny Airport, located approx. 22 km from the project site. The site is located within 3km of a Motorway so the Department of Defence will be consulted.

6.15.8 Potential Impacts

An evaluation of the possible effects that the proposed development could have on aviation and existing telecommunications networks will be conducted. A study will be undertaken to analyse the impact of the turbines on telecommunications operator's point-to-point microwave radio links.

The Irish Wind Energy Association 2012 guidelines, "Best Practice Guidelines for the Irish Wind Energy Industry", indicate that wind turbines within 20 km of a radio navigation aid have the potential to cause electro-magnetic interference with these signals. It is possible that houses in the immediate vicinity of the turbines could require some remedial measures in relation to television reception.

In practice, such measures are not difficult to implement, are relatively inexpensive and if necessary, will be undertaken by the developer in conjunction with RTÉ.

7 CUMULATIVE IMPACTS, INDIRECT IMPACT AND INTERACTION OF EFFECTS

7.1 Aspects to be Addressed

The cumulative impact of the proposed Littleton Wind Farm with other projects which are either existing, permitted or pending planning permission, or for which there is information in the public domain, at a sufficient level of detail to allow assessment, will be addressed. An example of a project within the public domain can be projects that are listed in the County Development Plan, National Development Plan or identified in the planning or consenting process. . Indirect effects and effects in different environmental media will be addressed.

The cumulative effects from the construction of the wind turbines, cabling and haul route alterations will also be assessed.

7.2 Cumulative Assessment Methodology

The assessment methodology will be based on the EPA guidance and the EU guidelines, 'Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions', published by the Office for Official Publications of the European Communities in May 1999.

The potential for significant cumulative and indirect impacts will be examined and any such potential impacts will be identified. Where the potential for significant cumulative is identified, such impacts and interaction of impacts will be included in the scope and addressed in the baseline and impact assessment studies for each of the relevant environmental media and aspects of the project. The cumulative impacts will be presented in the chapters of the EIAR which address the most relevant environmental media.

7.3 Receiving Environment

There are a number of wind energy projects located in the surrounding landscape of the proposed Littleton Wind Farm which will be considered for cumulative impact. These include the following wind farms:

- Gurteen Lower Wind Farm (c.4km southeast)
- Lisheen Wind Farm (c.4km north)
- Bruckana Wind Farm (c.8km north)
- Ballybay Wind Farm (c.9km east)
- Kill Hill Wind Farm (c.9km southwest)
- Foyle Wind Farm (c.12km east)

Furthermore, projects with planning permission for wind energy developments which have not yet been constructed will also be considered. This includes the proposed Farranrory Wind Farm (c.10km east).

Other planned, permitted or constructed projects in the area will be considered for potential cumulative impact. Furthermore, significant projects within the region will also be considered for potential cumulative impact.

7.4 Potential Impacts

If other projects of similar scale and type are under construction at the same time as the proposed Littleton Wind Farm, there would be potential for cumulative impact due to increased construction traffic, increased demand on construction materials and skills as well as potential for increased runoff to local streams, potential for in-combination visual impact and potential for increased noise impacts.

Positive cumulative impacts are also possible, for instance, improvement to air quality as a result of renewable energy projects and achievement of national and international renewable energy generation targets.

Please send all responses to: littletonwindfarm@ftco.ie

or respond by post to:

Fehily Timoney & Company
Core House
Pouladuff Road
County Cork
T12 D773

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

APPENDIX 1

List of Consultees

Local Authorities

Tipperary County Council:

- Environment Department
- Heritage Department
- Planning Department
- Roads Department

Kilkenny County Council Planning Department

Government Departments

Minister for Housing, Planning and Local Government
Minister for Culture, Heritage and the Gaeltacht (DAU)
Minister for Agriculture, Food and the Marine
Minister for Communications, Climate Action and Environment
Minister for Transport, Tourism and Sport
Minister for Defence

Telecommunications

Broadcasting Authority of Ireland (BAI)
Commission for Communications Regulation
Eircom Ltd
Electricity Supply Board
Enet Telecommunications Networks Limited
Imagine Networks Services Ltd
IT Department, Kilkenny County Council
IT Department, Laois County Council
IT Department, Tipperary County Council
Meteor Mobile Communications Limited (Eir)
Nova Networks Ltd
Ripple Communications Ltd
RTE Transmission Network Ltd
RTÉ/Saorview
Telecommunications Section, An Garda Siochána
Three Ireland (Hutchison) Limited
Viatel Ireland Ltd
Virgin Media Ireland Ltd (PP)
Vodafone Ireland Ltd

Other Interested Bodies

An Bord Pleanála
An Chomhairle Ealaíon (Arts Council)
An Garda Siochána - Thurles Branch
An Taisce
Bat Conservation Ireland
Biodiversity Ireland
Birdwatch Ireland
Butterfly Conservation Ireland
Commission for Regulation of Utilities
Eirgrid

Environmental Protection Agency (EPA)
Environmental Sciences Association of Ireland
ESB Networks
Fáilte Ireland
Forestry Service
Gas Networks Ireland
Geographical Society of Ireland
Geological Survey Ireland (GSI)
Health and Safety Authority
Health Service Executive (HSE)
Inland Fisheries Ireland (IFI)
Irish Aviation Authority
Irish Environmental Network
Irish Peatland Conservation Council
Irish Raptor Study Group
Irish Water
Irish Wildlife Trust
Irish Wind Energy Association
Kilkenny Airport
Met Eireann
National Monuments Service
National Parks and Wildlife Service (NPWS)
National Roads Authority
National Transport Authority
Office of Public Works
Office of Public Works (OPW)
Southern Regional Assembly
Sustainable Energy Authority Ireland
Teagasc
The Heritage Council
Transport Infrastructure Ireland (TII)

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

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ENVIRONMENT ISO 14001:2015 NSAI Certified

FEHILY TIMONEY

DESIGNING AND DELIVERING A SUSTAINABLE FUTURE

08 May 2025

Our Ref: P20211-FT-XX-XX-LT-PL-0002

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping & Consultation Request

Dear Sir/Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).

Fehily Timoney and Company (FT) previously contacted all technical and statutory consultees regarding this project in September 2021, and are writing to all consultees again through this scoping update letter to invite you to comment on any additional technical issues that you feel should be considered in this EIAR, which will be prepared as part of the Proposed Littleton Wind Farm planning application process.

Littleton Wind Farm DAC intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, approximately 3km east of the village of Littleton and 10km east of Thurles. The proposed development is located on a bog group consisting of the Longford Pass, Littleton and Lanespark Bogs. It is intended to make a planning application directly to An Bord Pleanála under the Strategic Infrastructure Act 2006 (as amended).

While the proposed wind farm is located in County Tipperary, the proposed connection route option for the wind farm's connection to the national electricity grid network passes through County Kilkenny, terminating in the 110kV Ballyragget Substation at Ballyragget, Co. Kilkenny.

Since the original scoping report was issued in 2021, the design of the proposed development has been refined and shall include the following key elements:

Project Element	2021 Scoping Report Description	Final Proposed Development
Prospective Applicant	Bord na Móna Powergen Ltd (a subsidiary of Bord na Móna plc.)	Littleton Wind Farm DAC (part of a 50:50 joint venture between Bord na Móna and SSE Renewables)
Wind Turbines	14-18 no. WTG's	11 no. WTG's with a tip height of 200 m.
Grid Connection	110 kV underground cable connection. Preferred route undefined.	110 kV underground cable connection to Ballyragget Substation, County Kilkenny.
Turbine Delivery Route (TDR)	To be identified.	TDR identified from Junction 4 of M8 Motorway. Loads will travel to site via. R693, R639 to site entrance location at Longford Pass.
Onsite Substation	110 kV on site substation location to be identified.	110 kV on site substation at Littleton Bog.
Borrow Pits	Undefined.	Single on-site borrow pit.
Recreational Amenity	Undefined.	Included.
Biodiversity Enhancements	Not included.	Included.

As part of the consultation process, we would be interested in receiving any feedback you may have relevant to your area of expertise with respect to the proposed Littleton Wind Farm development.

A project website has been set up on www.littletonwindfarm.ie. The website will be used to notify members of the public of project updates, project timelines, upcoming public consultation and any changes in the design and layout as a consequence of consultations. It also provides an avenue for the public to contact the project development team directly.

Please find enclosed the following documents for reference:

Appendix 1:
- List of Consultees.

Appendix 2:
- Copy of the original Littleton Wind Farm EIAR Scoping Report (2021).
  Please be cognisant of the updates since this report was prepared as outlined in the table above.

Appendix 3:
- Proposed Littleton Wind Farm Site Location Map.

Appendix 4:
- Proposed Turbine Delivery Route (TDR).

Appendix 5:
- Proposed Grid Connection Route (GCR).

We respectfully request that all feedback responses are submitted to us by Thursday 31st July 2025, in order to provide the EIAR team adequate time to consider all information.

Your responses may be provided by email or by post to the following addresses:

By Email: littletonwindfarm@ftco.ie

By Post: FAO - Trevor Byrne, Littleton Wind Farm, Fehily Timoney and Company, Core House, Pouladuff Road, Co. Cork, T12 D773

Should you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence.

Yours sincerely,

Trevor Byrne
for and on behalf of Fehily Timoney and Company

Encl.

FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

APPENDIX 1

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Minister for Agriculture, Food and the Marine
Minister for Environment, Climate & Communications
Minister for Transport
Minister for Tourism, Culture, Arts, Gaeltacht, Sport and Media
Other Interested Bodies
Southern Regional Assembly
Inland Fisheries Ireland (IFI)
Transport Infrastructure Ireland (TII)
Environmental Protection Agency (EPA)
The Heritage Council
An Taisce
An Chomhairle Ealaíon (Arts Council)
Failte Ireland
Irish Aviation Authority
Office of Public Works
Health and Safety Authority – (if site is in proximity to COMAH site)
Irish Water
An Bord Pleanala
An Garda Siochána - Thurles Branch
Bat Conservation Ireland
Biodiversity Ireland
Birdwatch Ireland
Butterfly Conservation Ireland
Commission for Regualtion of Utilities
Eirgrid
Environmental Sciences Association of Ireland
ESB Networks
Forestry Service
Gas Networks Ireland
Geographical Society of Ireland
Geological Survey Ireland (GSI)
Health Service Executive (HSE)
Irish Environmental Network

Irish Peatland Conservation Council
Irish Raptor Study Group
Irish Wildlife Trust
Irish Wind Energy Association
Kilkenny Airport
Minister for Defence
Met Eireann
National Monuments Service
National Parks and Wildlife Service (NPWS)
National Transport Authority
Sustainable Energy Authority Ireland
Teagasc
Telecommunications
Broadcasting Authority of Ireland - BAI
Commission for Communications Regulation
Eir (meteor mobile)
Eircom
ESB Telecoms
Enet Telecommunication's Network Limited
Imagine
IT Department, Kilkenny County Council
IT Department, Laois County Council
It Department, Tipperary County Council
Nova Telecom
Ripplecom
RTE Transmission Network (2RN) (same as RTE/Saorview)
RTE/Saorview
Telecommunication's Section, An Garda Siochána
Three
Viatel Ireland Ltd
Virgin Media Ireland
Vodafone (Netshare)

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APPENDIX 2

Copy of Littleton Wind Farm EIAR Scoping Report (2021)

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

LITTLETON WIND FARM

EIAR SCOPING REPORT

Prepared for: Bord na Móna Powergen Ltd.

Date: September 2021

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EIAR SCOPING REPORT

REVISION CONTROL TABLE, CLIENT, KEYWORDS AND ABSTRACT
User is responsible for Checking the Revision Status of This Document

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Client: Bord na Móna Powergen Ltd.

Keywords: Littleton, Wind Turbines, Renewable Energy, Environmental Impact Assessment Report, Scoping, Environmental, Planning Application

Abstract: This is a scoping report prepared for a proposed wind energy development near Littleton, County Tipperary. The purpose of the scoping report is to identify the content and extent of the information to be provided in the Environmental Impact Assessment Report for the project.

Please send all responses to: littletonwindfarm@ftco.ie

or respond by post to:
Fehily Timoney & Company
Core House
Pouladuff Road
County Cork

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1 INTRODUCTION

1.1 General

1.1.1 Introduction

Bord na Móna Powergen Ltd. intend to apply for planning consent for a renewable energy development referred to as Littleton Wind Farm, located approximately 3km east of the village of Littleton and 10km east of Thurles, Co. Tipperary.

A site location map is included in Figure 1-1.

Fehily Timoney & Company have been appointed as Environmental Consultants for the project and will prepare an Environmental Impact Assessment Report (EIAR) in support of the planning application. The EIAR will be prepared in accordance with the requirements of Schedule 6 of the Planning and Development Regulations 2001, as amended and the EIA Directive 2011/92/EU, as amended.

1.1.2 The Applicant

Bord na Móna Powergen Ltd. is a subsidiary of Bord na Móna plc, a publicly owned company, originally established in 1946 to develop and manage some of Ireland's extensive peat resources on an industrial scale, in accordance with government policy at the time. Bord na Móna's lands extend to approximately 80,000 hectares in total and are located mainly in the Irish midlands.

Bord na Móna has a long track record of developing energy projects, dating back to the development of the first generation of peat-fired power stations. Renewable energy is a strategic growth area for the company and is aligned with its corporate strategy, which includes reducing carbon emissions.

Bord na Móna Powergen Ltd. currently manages and operates a portfolio of thermal and renewable assets, namely Edenderry Power Plant a peat/biomass generating unit, Cushaling peaking plant, Bellacorick, Mountlucas, Oweninny Phase 1 and Bruckana wind farms, and the Drehid landfill gas facility. A number of other renewable projects are either in construction, are consented or are in the preplanning process.

In 2015, Bord na Móna published its 'Sustainability Statement 2030', which sets out the company's commitment to transition to peat-free electricity generation by 2030. Renewable energy generation, including solar power, biomass and wind power, is a key component of this transition.

In January 2021, the company announced its decision to permanently end all peat harvesting in line with its change from a traditional peat business into a climate solutions company fully focused on renewable energy generation, recycling, peatlands restoration and the development of new low carbon enterprises. The cutaway will be stabilised through the implementation of an enhanced rehabilitation programme with significant portions of these lands rewilding and supporting biodiversity and other ecosystem services. Bord na Móna has a long record of rehabilitating its existing wind farm sites and will continue to implement the enhanced rehabilitation programme alongside the development of its renewable energy projects. The Company will continue to consult with all stakeholders for both activities.

1.1.3 Purpose of the Report

This Scoping Report provides details regarding the proposed development and the subject site, including the site selection process. It also sets out the proposed scope of work for the EIAR.

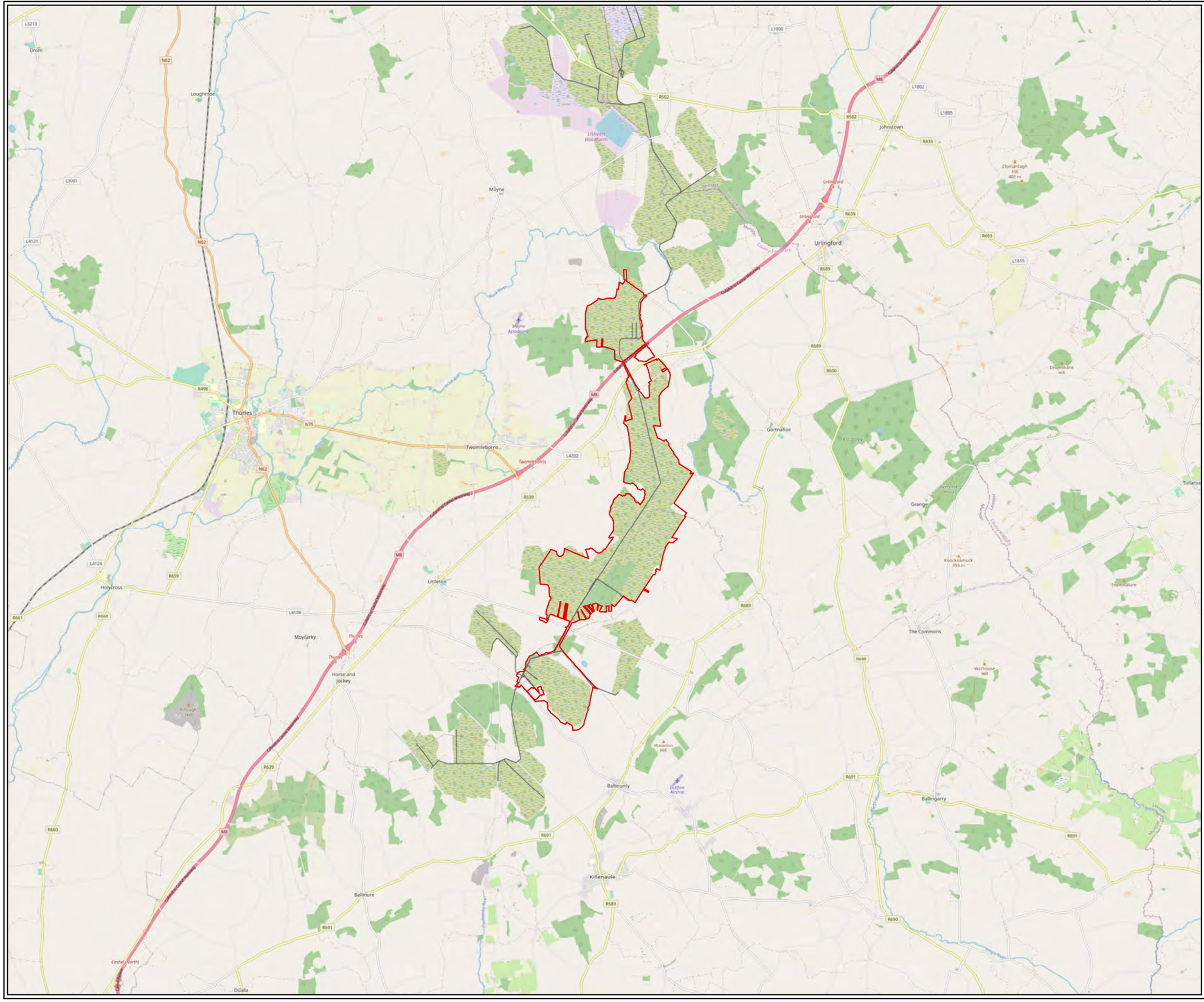
The purpose of the EIA scoping process is to identify the key points and issues which are likely to be important during the environmental impact assessment (EIA) and to eliminate those that are not. It does this by identifying sources or causes of potential environmental effects, the pathways by which the effects can happen, and the sensitive receptors, which are likely to be affected. It defines the appropriate level of detail for the information to be provided in the EIAR. In essence, the primary focus of scoping is to define the most appropriate assessment of significant effects related to the proposed development.

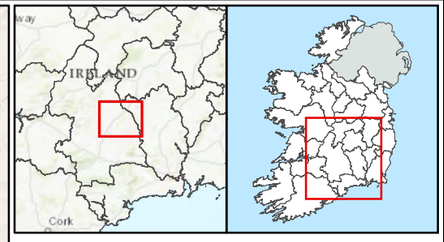
This scoping report will be distributed to a range of stakeholders who are considered to have appropriate expertise and relevant prior experience of the factors involved, knowledge of the characteristics of the project type and of the sensitivities likely to be present in the receiving environment as well as local knowledge and interest in the area. The scoping report will also be made available to individual stakeholders and the public on request.

A full list of the consultees who were issued this scoping report is included in Appendix A of this document.

Path: R:\Map Production\2020\P20-211\Workspace\Scoping Report\P20-211_GIS_Fig1-1_SiteLocation_A3.mxd

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Legend

Site Boundary

N
W E
S

0 2.5 5 10 Kilometers

TITLE: Site Location			
PROJECT: Littleton Wind Farm, Co. Tipperary			
FIGURE NO:	1.1		
CLIENT:	Bord Na Móna		
SCALE:	1:100000	**REVISION:**	0
DATE:	13/09/2021	**PAGE SIZE:**	A3

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1.2 Planning Process for the Proposed Development

The Planning and Development Act 2000 was amended in 2006 so that major infrastructure proposals could be made directly to An Bord Pleanála, rather than to the local planning authority. This is known as Strategic Infrastructure Development (SID).

In order to qualify for SID under section 37B of the Planning and Development Act 2000 (as amended), a proposed development must firstly fall within a class specified in the Seventh Schedule to the 2000 Act. Part 1 of the Seventh Schedule, as amended, specifies, inter alia, the following classes of development:

> "An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 megawatts."

Thereafter, the Board must satisfy itself that the proposed development meets one or more of the conditions set out in subsection 37A(2) of the 2000 Act, namely—

> "(a) the development would be of strategic economic or social importance to the State or the region in which it would be situate,
>
> (b) the development would contribute substantially to the fulfilment of any of the objectives in the National Spatial Strategy or in any regional spatial and economic strategy in force in respect of the area or areas in which it would be situate,
>
> (c) the development would have a significant effect on the area of more than one planning authority."

It is anticipated that the proposed development will likely have an output of at least 50 Megawatts. Should the project be of this scale, an application will be made to An Bord Pleanála (Board) seeking a determination in relation to the SID status, or otherwise, of the proposed wind energy development. If the Board determine that the development is indeed SID, the planning application will be submitted directly to An Bord Pleanála, under the provisions of Planning and Development (Strategic Infrastructure) Act 2006. Should the project be of a scale lower than the SID thresholds, an application for planning permission will be made to Tipperary County Council.

1.3 Environmental Impact Assessment and the Function of the EIAR

Under Section 172 of the Planning and Development Act, as amended, a planning application for a development which comes within a class of development specified under Schedule 5 of Part 2 of the Planning and Development Regulations must be accompanied by an Environmental Impact Assessment Report (EIAR) in accordance with the EIA Directive 2011/92/EU, as amended in 2014. The purpose of an EIAR is to provide a detailed description of the proposed development and outline potential impacts associated with the construction, operation and decommissioning of the project. Where adverse impacts are identified, mitigation measures are proposed, and the residual impacts described.

Accordingly, as the proposed development will have more than 5 no. turbines and a generating capacity of greater than 5MW, an EIAR will be prepared for the project in accordance with the Planning and Development Regulations 2001 (as amended). Furthermore, EIA is mandatory for all Schedule 7, Strategic Infrastructure Development Projects.

1.4 Contribution to the EIAR

This Scoping Report has been prepared by Fehily Timoney & Company (FT) on behalf of Bord na Móna Powergen Ltd. FT is a planning, environmental and engineering consultancy based in Cork, Dublin and Carlow, specialising in civil and environmental engineering, environmental science and planning. FT is well established as a leading consultancy in wind farm development in Ireland.

FT will be preparing the Environmental Impact Assessment Report for submission to the planning authority as described in Section 1.2 above.

Specialist contributors to the EIAR include:

- Macro Works who will prepare the landscape and visual impact assessment;
- John Cronin & Associates who will prepare the Cultural Heritage assessment.

1.5 Consultation

The stakeholder consultation process is being carried out in accordance with the Code of Practice for Wind Energy Development in Ireland-Guidelines for Community Engagement (available at: www.dccae.gov.ie).

Comments on the scope of the EIAR can be submitted by email to littletonwindfarm@ftco.ie or returned by post to Fehily Timoney & Company, Core House, Pouladuff Road, County Cork. We ask all consultees to submit responses by the 5**th of November 2021** to provide adequate time to consider all responses.

The responses from this consultation will inform the ongoing design process in addition to informing the scope of the environmental assessments.

Community & Stakeholder Consultation

Bord na Móna are operating as the Community Liaison Officer (CLO) for the proposed development and will function as a key point of contact within the local community. The CLO has been resourced to deal with all queries and will conduct informal local community consultation in the area. Feedback from the CLO will be passed on to the project design team and EIAR team on an ongoing basis in order to allow the consultation process to inform the design process.

With regard to COVID-19 and direct contact with members of the public, Bord na Móna will continue to assess the most up to date public health guidelines. With this in mind, the applicant hopes to be in a position to meet member of the public through Community Engagement Clinics. Updates will be provided to members of the public as the situation develops.

A project website has been set up for the project to inform the public of information relating to the proposed development. The website will be used to notify members of the public of project updates, project timelines, upcoming public consultation and any changes in the design and layout as a consequence of consultations. It also provides an avenue for the public to contact the project development team directly. The website is as follows www.littletonwindfarm.ie

Extensive consultation will be carried out with statutory and prescribed bodies which will include Tipperary County Council and An Bord Pleanála pursuant to the Strategic Infrastructure Development Pre-Application process.

2 STRATEGIC PLANNING CONTEXT

There is significant national, regional and local climate, planning and energy policy support for the subject development. A summary of same is provided below.

Climate Action Plan 2019

The 2019 Climate Action Plan (CAP) provides a roadmap of what must be achieved and requires 70% of all our electricity to come from renewable energy sources by 2030. This almost doubles our previous target of 40% by 2020. To achieve the 70% target, the CAP earmarks a target of 3.5GW of off-shore wind and almost doubling of existing on-shore wind from circa 4.2GW (today) to 8.2GW by 2030. To put the scale of the ambition into context it should be noted that it has taken 20+ years to achieve the current level of renewable penetration onto the Grid. The challenge is now to achieve twice as much in half the time.

The Climate Action and Low Carbon Development Bill 2021 recently approved by Government commits to an average 7% per annum reduction in overall greenhouse gas emissions from 2021 to 2030 (a 51% reduction over the decade) and to achieving net zero emissions by 2050. The 2030 and 2050 target is now set in law and all public bodies including planning authorities are obliged to perform their function in a manner consistent with national climate plans and strategies. Every sector must contribute to meeting this target by implementing policy changes as outlined in the Bill. It is likely that the CAP targets for onshore wind will increase in order to meet the requirements of the Climate Action and Low Carbon Development Bill 2021.

The proposed project if developed will help Ireland achieve its binding targets for renewable onshore wind energy.

National Planning Framework and the Southern Regional Spatial and Economic Strategy

A key goal and objective of the National Planning Framework (NPF) is identifying how the State can 'Transition to a Low Carbon Economy'. Section 1.2 recognises the need for new energy systems and transmission grids in order to deliver a more distributed, renewable focused national energy system in order to harness the potential from wind, wave and solar energy sources. Similarly, the priority of the Southern Regional Spatial & Economic Strategy (SRSES) with regard to the transition to a low carbon and climate resilient society notes that "Wind energy is currently the largest contributor of renewable energy and it has the potential to achieve between 11-16 GW of onshore wind and 30 GW of offshore wind by 2050. The sector can make a significant contribution to meeting national energy demands while attaining our energy and emissions targets for 2020 and beyond". Furthermore RPO 99 of the SRSES sets out a clear objective "to support the sustainable development of renewable wind energy at appropriate locations and related grid infrastructure in the Region in compliance with national Wind Energy Guidelines".

Tipperary County Development Plan (North & South, as varied)

In relation to Climate Change Adaption, it is a policy of the County Council to promote the reduction of energy demand and in particular, reliance on fossil fuels and the costs associated with imported energy sources. The policy also aims to reduce greenhouse gas emissions. Furthermore, The Tipperary Renewable Energy Strategy 2016 sets out planning policy and objectives for the development of renewable energy. The strategy aims to support and facilitate the development of renewable energy in line with the Government's strategic goals and European targets, while considering environmental sensitivities.

The Wind Energy Strategy for the County states it is the policy of the Council to support, in principle and in appropriate locations, the development of wind energy resources in county Tipperary. The Council recognises that there is a need to promote the development of 'green electricity' resources and to reduce fossil fuel dependency and greenhouse gas emissions in order to address the global issue of climate change, and to comply with European and International policies with regards to renewable and sustainable energy resources. The County Council's policy therefore supports the production of renewable energy in reducing dependency on fossil fuels and reducing climate change through reduction of greenhouse gas emissions.

Summary

The proposed project if development will help Ireland achieve its binding targets for renewable onshore wind energy. The principle of the development is also considered acceptable and in accordance with the Tipperary County Development Plan.

3 SITE SELECTION PROCESS

Strategic Site Selection

Bord na Móna conducted a technical review of potential candidate sites for wind energy projects, on land which is either cut away or will be cut away before 2021. This exercise reviewed a list of potentially 25 project sites, with a typical target capacity of between 50 MW and 100 MW, across the entire land bank. The main aim of this study was to gauge the sites with the best potential to deliver a successful wind farm project. The ultimate end goal of the development team was to select a project to bring forward, for which preliminary engineering designs and a planning application would be prepared.

As part of the site selection process, known constraints were applied across the entire land bank to determine unsuitable areas for wind turbines. The constraints themselves are derived from various industry and regulatory guidelines and available Geographical Information Systems (GIS) datasets. This methodology was used to generate a list of potential sites for further consideration with the level of information currently available. These sites, identified as having a higher potential for wind farm development, were then brought forward for site-specific assessment, as detailed below.

Site Specific Selection

For the site-specific assessment of candidate sites, criteria were chosen which not only covered the broad range of issues which can arise in wind farm development, but also allowed for direct comparison of the candidate sites to each other to determine their relative suitability for wind farm development. The site-specific selection criteria and outline of basis for assessment for each criterion are listed in Table 3.1:

Table 3-1: Criterion Basis for Assessment

Criterion Basis for Assessment	Criterion Basis for Assessment
Grid Access/Capacity	Grid Access/Capacity means potential of the National Grid to accommodate future projects on the network. The proximity of the project to suitable grid nodes (i.e. those with spare capacity) should increase the likelihood of a project being selected for a grid connection offer.
County Development Plans and Zoning	County Development Plans typically indicate the areas of a county which are deemed preferred, open to consideration and not suitable for wind farm development. Bord na Móna has committed not to develop wind farms in areas deemed unsuitable.
Proximity to Houses	Refers to how close turbines are to residences.
Wind Resource Assessment	The available wind resource (i.e. wind speed) directly translates into how much electrical output comes from the site.
Environmental Sensitivity	Environmental Sensitivity is the ecological sensitivity of the site based on proximity to sensitive areas within or around the site.
Cumulative Impact	Depends on the landscape's capacity to absorb wind farm developments
Aviation	Airspace control and use to be considered.

Criterion Basis for Assessment	Criterion Basis for Assessment
Land Use	Internal issue relating to the residual peat depth, production plans and alternative uses.
Communications Infrastructure	Telecoms masts and signals to be considered.
Flood Plain Analysis	Flood Plain Analysis assesses the wind farm's location in terms of historical flooding data.
Supporting Infrastructure	Sites with better road access require less modifications or upgrade to the local infrastructure to facilitate construction.

These site-specific assessments were conducted by Bord na Móna with input from relevant subject experts, where required. A score was awarded to each site under each criterion.

Site Selection Results

The site assessment scores for each criterion were determined and a shortlist of sites deemed suitable for a large-scale wind energy development was compiled. Of these sites, Littleton scored very highly along with other high-scoring sites that meet the relevant criteria. It was therefore deemed that Littleton should be progressed for detailed assessment and planning consideration. Further details on the identification of Littleton as the optimal site for the proposed development are presented under the individual site-selection criteria described below.

Grid Access / Capacity

Significant grid infrastructure existing in the local area including Thurles 110kV substation located in the townland of Ballygammane, County Tipperary, or the Lisheen Mine 110kV substation in the townland of Killoran, County Tipperary. Both substations are located approximately 7km from the proposed site.

County Development Plan Zoning

County Development Plans and Wind Energy Strategies, where available, typically indicate the areas of a county which are zoned as preferred, open to consideration or not suitable for wind farm development. The site is zoned as an 'Area Open for Consideration' for Wind Energy Development' in the Tipperary Wind Energy Strategy.

Proximity to Houses

It was found that in general Bord na Móna sites are surrounded by low density rural housing, and most sites have a relatively large proportion of their land area free from proximity issues. However, longer narrower sites had a larger proportion of their land area constrained out due to proximity issues to houses or population centres.

The site is surrounded by a number of towns and villages, however these are relatively distant from the site when compared with other locations e.g. there are 156 residences within a distance of 2km from the site.

Wind Resource Assessment

Wind resource assessment is the process by which wind power developers estimate the future energy production of a wind farm. Accurate wind resource assessments are crucial to the successful development of wind farms. The Irish Wind Atlas, published by the Sustainable Energy Authority of Ireland (SEAI), uses long term weather model data to predict the long term average wind speeds in Ireland, and is used by wind developers and local authorities to determine the best locations for future wind farm development

Environmental Sensitivity

Environmental sensitivity is a key factor in identifying suitable sites for wind farm development. The assessment of environmental sensitivity among the candidate sites included a review of proximity to Natura 2000 sites, biodiversity of the lands within the sites themselves, and acknowledgement of any other site-specific ecological data that has already been captured, for example, previously determined important populations of winter birds, bats or mammals.

Of the candidate sites, Littleton Wind Farm site was found to have areas of low ecological sensitivity and, therefore, scored high in this regard given the site area and potential to mitigate any potential negative impacts by design.

Cumulative Impacts

Cumulative impact refers to the ability of the landscape and environs to absorb multiple wind farm developments. The landscape's capacity to absorb wind farm developments can be subjective and can vary from area to area.

The potential for cumulative impact will be a significant consideration for this development given that there are other windfarms in the area, the closest of which are as follows:

- Bruckana Windfarm (40 MW).
- Lisheen Wind Farm (24 MW).
- Gorteen Lower Wind Farm (2.3 MW).
- Ballybay Wind Farm (13.8 MW).
- Kill Hill Wind Farm (36 MW).

Aviation

The M8 motorway runs to the west of most of Littleton Bog Group in a north-south direction. As such many of the bogs fall within a 3NM (i.e. 5.6 km) corridor either side of main national road routes (as listed in their 2014 position paper entitled 'Air Corps Wind Farm/Tall Structures Position Paper').

In this regard, Littleton Wind Farm did not score highly for aviation in the overall matrix. Detailed consultation and design considerations will be held with key stakeholders such as the IAA and Department of Defence. As part of the EIAR, an adequately qualified Aviation specialist shall assess the potential impact of the proposed development on aviation issues and address potential stakeholder concerns as required.

Land-Use

Coillte forestry is located at various locations close to some of the bogs within the Group, and there is an established on-site Coillte plantation in the south of Littleton Bog. Varying degrees of on-site vegetation, ranging from light scrub to established trees exist on some bogs, depending on the level of production activity and how long production has ceased.

Communications Infrastructure

Many of the sites have telecommunication point-to-point microwave signals crossing them and some sites have telecommunication masts located within the site boundaries. However, this issue can typically be overcome by engineered solutions, i.e. wind farm layout design or additional telecom relay masts. For this reason this criterion does not significantly impact on overall project viability.

Links will be identified through a detailed consultation exercise carried out with all operators and appropriate buffers will be agreed.

Flood Plain Analysis

Flood Plain Analysis assesses the wind farm's location in terms of historical flooding data. The assessment methodology used this historical flooding data to consider the percentage area of a site which has previous flooded, the percentage area within one kilometre of a site which has previously flooded and recorded flooding points within one kilometre of a site. In addition, whether the site has pumped or gravity drainage systems is also considered.

There are small pockets of localised flooding onsite during prolonged periods of wet weather, however these do not give rise to any flooding concerns for the proposed development and overall the site scored well in this regard.

Supporting Infrastructure

The proximity of the existing road and electricity transmission network were considered in terms of ease of delivery of turbine components and relative cost of potential grid connection. Littleton scored highly with regard to supporting infrastructure, in terms of road network and potential grid connection.

4 PROJECT DESCRIPTION

4.1 Proposed Wind Farm

The proposed development will be located on Littleton Bog Group which comprises 14 No. bogs and straddles the borders of Counties Tipperary, Kilkenny and Laois. The study area for the proposed development is confined to three of these bogs, namely Longford Pass, Littleton and Lanespark and covers an area of approx. 1,553.6 ha. The proposed development will be located entirely within the jurisdiction of Tipperary County Council.

The study area adjoins Popes bog to the north and Kileen bog to the south. The study area extends for approximately 12 km from north to south and from circa 1 km (at north end) to 3 km (at south end) from east to west.

A high proportion of the site is regenerating cutaway (heath, scrub, woodland) but includes open areas with large bodies of open water. Areas of remnant high bog occur scattered along the boundaries.

Littleton is generally surrounded by farmland but there are extensive conifer plantations outside the eastern and western boundaries. A conifer plantation also occurs within the southernmost part of the site.

There is an extensive network of roads in the area. The M8 motorway and the R639 run to the northwest/west of Littleton bog. The R689 and R690 run to the east and the L4101 runs to the south. The main site access points are at the north and south ends of the bog adjacent to the railway line. The study area is within the catchments of the Nore and Suir river systems.

The closest settlements to Littleton Bog are Urlingford to the north, Gortnahoe to the northeast, Twomileborris to the west, Littleton to the southwest and New Birmingham to the southeast.

The proposed development will likely comprise between 14 and 18 no. wind turbines, access roads and entrance(s), electricity substation, borrow pits, electrical cabling for grid connection, temporary construction compounds and a permanent anemometry mast. New sections of turbine access routes will also be required; the siting of which will have regard to the constraints identified onsite. All wind farm cabling, including connection to the onsite substation, will be laid underground.

The project will also include for the development of a public recreational amenity in the form of walking/cycling trails, within the proposed development site, the design for which will be developed alongside the wind farm infrastructure design. The design will also see to link into existing or proposed amenity developments in the vicinity of the site.

The layout of the proposed wind farm will be developed following consultation and further environmental investigation and assessment. The aim of this is to design a wind farm that will minimise the potential environmental effects of the project while at the same time maximising the energy yield of the wind resource passing over the project site.

The electricity generated by the proposed wind farm will be transmitted by a collector system of underground cables to the proposed on-site substation. The proposed development will also comprise underground cables from the development to the National Grid connection point as well as improvements to the public road network for the delivery of turbine components.

4.2 Grid Connection

Central to the proposal, is the supply of power from the proposed Littleton Wind Farm to the Irish electricity network via underground cable to either the existing Thurles 110kV substation located in the townland of Ballygammane, County Tipperary, approximately 7km west of the site, or the Lisheen Mine 110kV substation in the townland of Killoran, County Tipperary, approximately 7km north of the site.

The proposed grid connection cable will connect the proposed on-site substation to the existing Thurles or Lisheen Mine substation via underground cable. The grid connection cable will leave the on-site substation and cross an area within the site before entering the public road. The grid route will then follow the public road to the point of connection at one of the existing substations on the national grid. The final grid-route and substation will be decided in consultation with Eirgrid.

Connection will be sought under the Enduring Connection Process (ECP) grid access regime. The grid connection will be considered in the Environmental Impact Assessment Report.

4.3 Turbine Delivery Route

Wind turbine components will enter the country through selected ports and these components will include:

- Blades,
- Tower sections
- Nacelles.

The components will then be delivered to site by specialist transport vehicles and assembled on-site.

Wind turbine components are expected to be transported to the proposed site via the motorway network, which runs immediately to the west of the proposed development site, however, the turbine delivery route is subject to study and assessment to determine the most appropriate route.

The turbine delivery route will be detailed and assessed in the EIAR.

5 STRUCTURE AND SCOPE OF THE EIAR

5.1 Content of the EIAR – Statutory Requirements

The EIAR will be prepared in accordance with Schedule 6 of the Planning and Development Regulations 2001, as amended, which sets out the contents of an EIAR. In addition, Directive 2011/92/EU as amended by Directive 2014/52/EU, which was adopted into EU law on 16 April 2014, will also be included in the preparation of this EIAR.

The purpose of the EIAR is to provide in particular:

a) a description of the project comprising information on the site, design, size and other relevant features of the project;

b) a description of the likely potential significant effects of the project on the environment;

c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;

d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;

e) a non-technical summary of the information referred to in points (a) to (d); and

f) any additional information relevant to the specific characteristics of the wind farm project proposed.

The EIAR will identify, describe and assess the direct and indirect significant effects of the project on the following factors:

a) population and human health

b) biodiversity, with particular attention to protected species and habitats

c) land, soil, water, air and climate

d) material assets, cultural heritage and the landscape

e) the interaction between the factors referred to in points (a) to (d).

5.2 EIAR Methodology

5.2.1 General

The EPA and the European Commission (EC) have published guidelines on the preparation of environmental impact assessment reports, namely:

- Draft Advice Notes on Preparing Environmental Impact Statements (EPA, 2015);
- Draft Guidance on the information to be contained in Environmental Impact Assessment Reports (Environmental Protection Agency (EPA), 2017);

- Environmental Impact Assessment of Projects - Guidance on Scoping (European Commission (EC), 2018);
- Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (EC, 2017);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018).

The EIAR team will have regard to these guidelines in the preparation of the EIAR.

The team will also have regard to best practice guidance for individual environmental topics. Regard will also be paid to the 'Best Practice Guidelines for the Irish Wind Energy Industry' published by the Irish Wind Energy Association and the 'Wind Energy Development Guidelines' published by the Department of Environment, Heritage and Local Government (2006) and the subsequent Draft Revised Wind Energy Development Guidelines (2019).

There are two different EIAR structures which are commonly used and which the EPA guidelines accept as equally valid. The structure, which the EIAR team proposes to use for the EIAR for the proposed Littleton Wind Farm project, is the grouped format structure.

Using this structure there is a separate chapter for each topic, e.g. air quality, biodiversity, hydrology. The description of the existing environment, the proposed development and the potential impacts, mitigation measures and residual impacts are grouped in the chapter. The grouped format makes it easy to investigate topics of interest and facilitates cross-reference to specialist studies.

Given the need to ensure that the EIAR is readily accessible to the general public, as well as to the statutory authorities, the EIAR team has proposed to structure the EIAR as described below:

Chapter 1:	Introduction
Chapter 2:	Background to the Proposed Development
Chapter 3:	Consideration of Reasonable Alternatives
Chapter 4:	Description of the Proposed Development
Chapter 5:	Population and Human Health
Chapter 6:	Biodiversity
Chapter 7:	Ornithology
Chapter 8:	Land, Soils and Geology
Chapter 9:	Hydrology, Hydrogeology and Water Quality
Chapter 10:	Air Quality and Climate
Chapter 11:	Noise and Vibration
Chapter 12:	Shadow Flicker
Chapter 13:	Landscape and Visual Impact
Chapter 14:	Archaeological, Architectural and Cultural Heritage
Chapter 15:	Material Assets (to include Traffic and Transportation, Aviation, Telecommunications and Electromagnetic Interference);
Chapter 16:	Interaction of Effects
Chapter 17:	Schedule of Mitigation and Monitoring Measures

5.2.2 EIAR Chapter Structure

The broad methodology framework used in each chapter will include the following:

- Introduction
- Assessment Methodology
- Existing Environment
- Potential Impacts
- Mitigation Measures
- Monitoring Measures
- Residual Impacts

Introduction

This section introduces the environmental topic to be assessed and the areas to be examined within the assessment.

Assessment Methodology

Specific topic related methodologies are outlined in this section. This will include the methodology used in describing the existing environment and undertaking the impact assessment. It is important that the methodology is documented so that the reader understands how the assessment was undertaken. This can also be used as a reference if future studies are required.

Existing Environment

An accurate description of the existing environment is necessary to predict the likely significant impacts of a new development. Existing baseline environmental monitoring data can also be used as a valuable reference for the assessment of actual impacts from a development once it is in operation.

To describe the existing environment, desktop reviews of existing data sources will be undertaken for each specialist area relying on published reference reports and datasets to ensure the objectivity of the assessment. Desktop studies will also be supplemented by specialised field walkovers or studies in order to confirm the accuracy of the desktop study and to gather more baseline environmental information for incorporation into the EIAR.

The existing environment will be evaluated to highlight the character of the existing environment that is distinctive and what the significance of this is. The significance of a specific environment can be derived from legislation, national policies, local plans and policies, guidelines or professional judgements. The sensitivity of the environment will also be described.

Potential Impacts

In this section, individual specialists predict how the receiving environment will interact with the proposed development. The full extent of the proposed development's effects and emissions before the proposed mitigation measures are introduced is outlined. Impacts from both the construction and operation phases of the proposed development are outlined. Interactions and cumulative impacts with other environmental topics are also included in this evaluation.

The evaluation of the significance of the impact is also undertaken. For most chapters pre-existing standardised criteria for the significance of impacts will be used in accordance with the guidelines set out in the EPA (2017) Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports. Such criteria can include Irish legislation, international standards, European Commission and EPA guidelines or good practice guidelines. Where appropriate criteria do not exist the assessment methodology section states the criteria used to evaluate the significance.

The EPA Advice Notes on Current Practice (EPA, 2003) provides guidance on the topics which would usually be addressed when preparing an EIAR for different classes of development. The Advice Notes highlight typical issues, which would arise for each development class. The proposed development set out within this scoping report falls under Project Type 33 'installations for harnessing wind power for energy production (wind farms)'.

Mitigation Measures

If significant impacts are anticipated mitigation measures will be devised to minimise impacts on the environment. Mitigation measures by avoidance, by reduction and by remedy can be outlined.

Monitoring Measures

If monitoring measures are required during the various phases of the proposed development these will be set out and specified.

Residual Impacts

The assessment identifies the likely impact that will occur after the proposed mitigation measures have been put in place. These impacts are described in detail and assessment of their significance undertaken.

5.2.3 EIAR Report Structure

The structure proposed for the EIAR is as follows:

Volume 1 - Non-Technical summary

Volume 2 - Main EIAR

Volume 3 - Appendices of the EIAR

Volume 4 – Photomontages.

6 ENVIRONMENTAL ISSUES TO BE ADDRESSED IN THE EIAR

The following section discusses the general contents of each chapter of the EIAR as listed in Section 5.2.1:

6.1 Chapter 1: Introduction

The Introduction Chapter will set out the context of the EIAR including an introduction to the applicant and a short description of the proposed development. The requirements for Environmental Impact Assessment will be addressed along with the EIAR methodology, structure and outline of cumulative projects. Contributors to the EIAR will also be detailed in this Chapter along with the relevant expertise.

6.2 Chapter 2: Background to the Proposed Development

Chapter 2 will set out the context of the proposed development which will discuss the need for the proposed project with regard to climate change, renewable energy targets and energy security. The policy context will also be discussed in this chapter. Chapter 2 will summarise International, European, National and Local Energy and Planning Policy, in the context of the proposed project.

6.3 Chapter 3: Consideration of Reasonable Alternatives

The reasonable alternatives, which were considered, when developing the overall configuration of the proposed Littleton Wind Farm will be described and the technology options for the project will be outlined in Chapter 3: Consideration of Reasonable Alternatives.

The reasonable alternatives studied with respect to the Littleton Wind Farm will be outlined under the following headings:

- Locations – This will include a discussion of the overall project site selection process for the Littleton Wind Farm based on the landholding available to the applicant. It will include a summary of the project site selection report which will be included in the EIAR outlining details of the criteria used to determine project site suitability for wind energy development including:
    - Wind resource;
    - Proximity to residential dwellings;
    - Land Zoning in County Development Plans;
    - Established and Future Land-Use;
    - Ecological Conservation Designations;
    - Landscape Designations; and
    - Ease of Access etc.
- Access – Details of the criteria used to select the network of access tracks that will provide access from the public road network to the project site (and to each turbine within the site) in addition to those that will provide internal connections (as an alternative to using public roads) between turbines will be outlined.

This will include information on the availability of existing track, suitable ground conditions, terrain, local road infrastructure etc.

- Connection to the National Grid – Details of the criteria used to select the proposed grid connection route will be provided. This will include an assessment of alternative grid connection route options, if relevant.

The environmental and plan-led considerations considered in the selection of the preferred alternatives will be outlined.

6.4 Chapter 4: Description of the Proposed Development

This chapter will provide a detailed description of the proposed development including the following:

- Proposed Development Layout;
- Development Components, including all internal infrastructure (roads, hardstands, cable routes, borrow pits etc), grid connection, turbine delivery and associated works;
- Description of the Proposed Turbines;
- Temporary Site Facilities and Works (construction compounds, accommodation works etc).;
- Community Benefit Proposals;
- Amenity and Recreation Proposals;
- Access and Transportation;
- Site Drainage;
- Construction Phase Management and Methodologies;
- Operational Phase; and
- Decommissioning Phase.

A Construction and Environmental Management Plan (CEMP) will be prepared and presented as an Appendix to the EIAR. The control measures that will be implemented to manage the risk of soil and water pollution, emissions of dust and noise, construction waste management and traffic impacts will be explained within this document.

6.5 Chapter 5: Population and Human Health

6.5.1 Aspects to be Addressed

The Population and Human Health Chapter of the EIAR will assess the likely significant effects of the proposed development on Population and Human Health with a particular reference to the following:

Population
The potential impacts of the proposed Littleton Wind Farm on population trends and statistics (density, age) will be addressed in this chapter.

Human Health & Safety
The potential impacts on human health from the proposed Littleton Wind Farm will be assessed in terms of potential effects on human health and safety. Other relevant technical topics of the EIAR will be crossed referenced in this Chapter as required.

Socio-economic Activity
The potential impacts of the proposed Littleton Wind Farm on employment and economic activities of the region and locality.

Land-use
The assessment will address the potential impacts of the proposed windfarm on existing and proposed land use.

Recreation, Amenity and Tourism
The assessment will address the potential impacts of the proposed Littleton Wind Farm on residential amenity, recreational facilities and activities and tourism of the region.

6.5.2 Assessment Methodology

Population
With the purpose of analysing population trends and statistics on the proposed area, population data from the Central Statistics Office will be obtained for the study area defined by electoral division, including the area of the grid route corridor. The statistics of this data is compared against county and state trends. Population data will be sourced from the CSO which will be analysed against population trends within the development area defined by electoral division which will include the grid route.

Human Health & Safety
The assessment will contain a desk study review of the potential impacts of the construction, operation and decommissioning of renewable energy developments on human health using published and verified sources of information. The assessment will contain a desk study review of the impacts of the construction, operation and decommissioning of renewable energy developments on health and safety using published and verified sources of information.

Socio-economic Activity

Data from the Central Statistics Office will be used to define the socio-economic baseline. Desktop research and consultation will provide an indication of economic activity in the study area. The potential positive and negative impacts of the proposed wind farm on employment and economic activity both directly and indirectly, will be assessed.

Land-use

The land uses in the area, which could potentially be affected by the proposed development, will be described using Corine 2018 land cover data which classifies landcover nationwide and desktop research. This data will be verified by subsequent walkovers and site surveys.

Recreation, Amenity and Tourism

All areas of scenic beauty in addition to heritage, culture and leisure facilities and activities in the study area will be identified. Residential amenities and recreational facilities, such as forestry in public ownership, walking paths, sports facilities, will be recorded and potential impacts assessed.

An assessment will then be conducted for each element of the proposed Littleton Wind Farm to ascertain any potential impacts that may arise which could directly or indirectly affect recreational activity or an amenity. This assessment will be prepared giving cognisance to other disciplines such as cultural heritage and archaeology, hydrology and ecology.

A review will be completed of several published studies and surveys which have been conducted both in Ireland by Fáilte Ireland and in the UK on the attitude of tourists to wind farms. A study of the potential impacts that the proposed development may have on the tourism of the region will be carried out by reviewing Fáilte Ireland surveys, appraising the existing patterns of the tourism within the county, and appraising the impacts that wind farms have on tourism in other counties and countries.

Proposed recreation, amenity and tourism facilities and improvements as part of the Littleton Wind Farm Project will be discussed in this section and included as part of the assessment.

6.5.3 Receiving Environment

The project site is located in County Tipperary, approximately 10km east of Thurles. The closest settlements to the proposed development are as follows:

- Ballynonty – c. 2km south
- New Birmingham – c. 2.5km west
- Gortnahoo – c. 2.5km north east
- Twomileborris – c. 3km west
- Littleton – c. 3.5km west

Given the spatial extent of the Littleton Bog Group, there are very few dwellings located in close proximity to the site, with most dwellings located along the surrounding road network, including the R639, R689 and local roads located to the north and south of the site. There are 156 dwellings within 2km of the site.

The proposed wind farm site falls within the electoral divisions (EDs) of Longfordpass, Twomileborris, Buolick, Poyntstown, New Birmingham, Killenaule and Littleton. The population of these EDs is 4,678 persons (Census 2016). The population density of this areas is 30 persons per square kilometre, lower than both the county-wide density and the state-wide density which is 37 and 67 persons per square kilometre respectively.

Landcover includes peat bogs, coniferous forestry, pastures and small areas of transitional woodland scrub, agricultural lands and transitional woodland-shrub. The land use on site was previously for the exploitation of peat. The surrounding area is largely agricultural with pockets of commercial forestry throughout.

Existing wind farm developments are located to the north of the project site, including the Bruckana and Lisheen Mine Wind Farms, to the east, including the Cnoc, Ballybay and Foyle Wind Farms and to the south west, the Kill Hill Wind Farm.

Walking and hiking trails are located in the area and horse riding is noted as a popular recreation activity in the surrounding region. There are no significant tourism recreation and amenity features in the area of the site. The Lough Doire Bhile loop is located south of Littleton and north east of Lanespark. This consists of a looped walkway around a lake and includes a carpark, signage and picnic areas. The Twomileborris/St. Kevins soccer club is located approx. 2km west of the site and two horse riding grounds are located approx. 2km east of the site and 1km south of the site.

6.5.4 Potential Impacts

Population

The potential impacts arising from the proposed development on population numbers and density during construction operation and decommissioning will be assessed.

Human Health & Safety

The potential affects arising from the proposed development which can impact on human health and human safety during construction, operational and decommissioning will be considered in this chapter.

Socio-Economics

The proposed development will have an impact on the local economy through job creation, local authority commercial rate payments and a Community Benefit Scheme. These will be developed in full and considered in the EIAR.

Land Use

The proposed development will require land take for the access tracks, wind turbines bases and adjacent hard-standings and sub-station footprints. The current land uses will remain other than within this land take. Full details will be contained in this chapter of the EIAR.

Recreation, Amenity and Tourism

The potential impact of the proposed wind farm development on the receiving environment for recreation, amenity and tourism will be assessed in this chapter in relation to the construction, operation and decommissioning phases. Potential construction impacts include full or partial closure of roads used within the area, for installation of cables and/or delivery of turbine components.

There is potential for disruption to access routes and walking paths, however any disruption will be mitigated where possible by maintaining access for people throughout or rerouting paths, and where this is not possible, in minimising the impact, clearly communicating the timing and scope of works to the local community. This section will also cross reference other technical chapters of the EIAR, for example, to determine potential impact on cultural heritage assets and to determine potential visual impact to tourism or recreation assets during the operational phase. Possibilities for improvements to recreation facilities in the area will also be considered.

6.6 Chapter 6: Biodiversity

6.6.1 Aspects to be Addressed

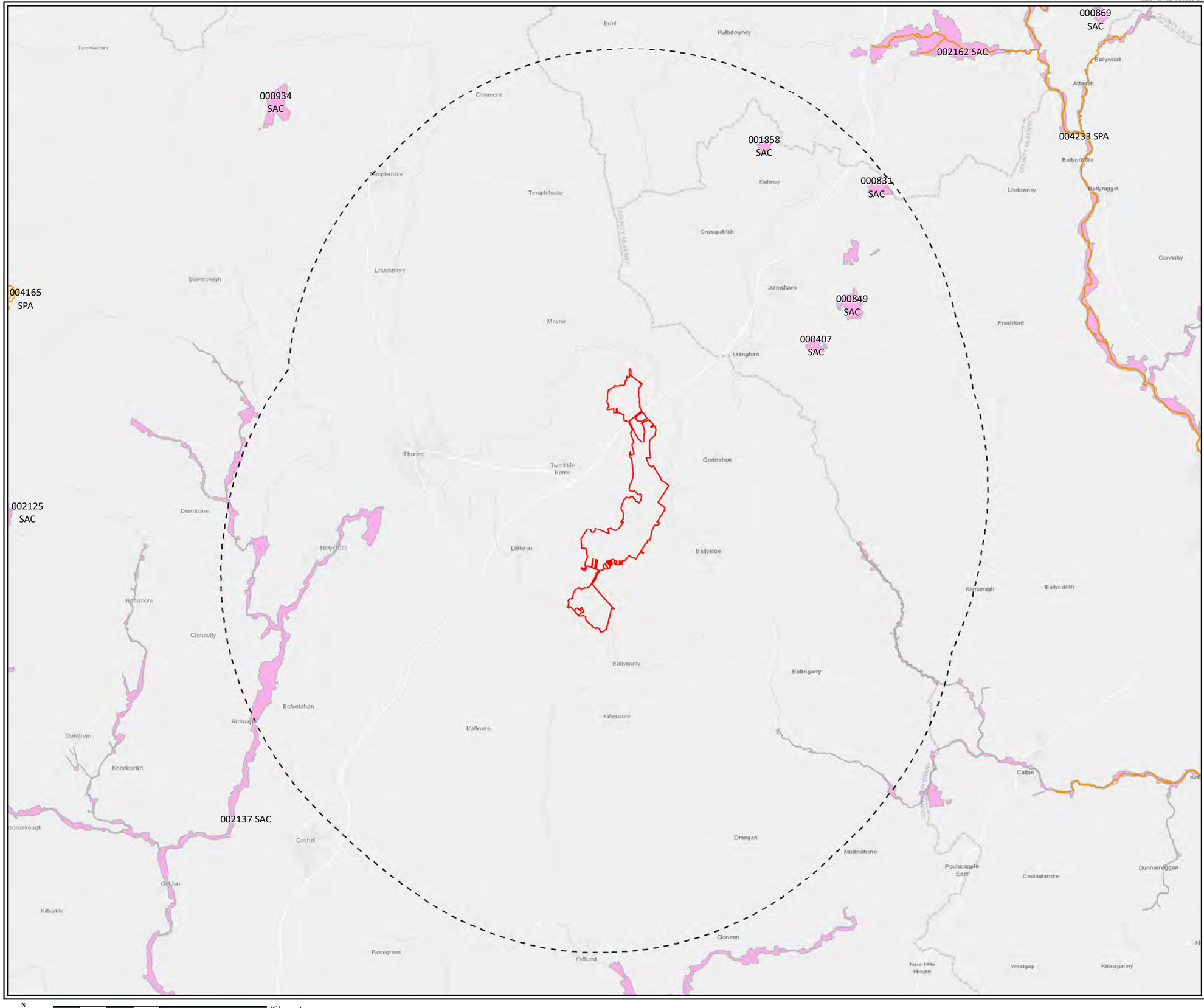
This chapter of the EIAR will address the terrestrial and freshwater aquatic habitats and species, including those of conservation concern within and in close proximity to the proposed wind farm; including along and in close proximity to the on-site cable routes; on and in close proximity to the sub-station, tree felling and any required replanting. It will also address the potential impacts on ecology from the proposed underground cable between the proposed wind farm and the grid connection point as well as any proposed alterations to the public road network required for the delivery of turbine components.

In particular, the assessment will focus on:

- European sites i.e. Special Areas of Conservation designated under the EU Habitats Directive (Council Directive 92/43/EEC) and Special Protection Areas designated under the EU Birds Directive (Directive 2009/147 EC), within the Zone of Influence of the proposed sites and routes. Potential pathways for significant effects to European sites shall also be considered.
- Other designated sites such as Natural Heritage Areas, proposed Natural Heritage Areas, Nature Reserves and Refuges for Fauna or Flora.
- Ecologically important habitats including habitats listed in Annex I of the Habitats Directive.
- Species protected under the Wildlife Acts along with Annex II and IV of the Habitats Directive.
- Aquatic species and habitat linked hydrologically to the proposed development
- Rare and protected flora including species listed under the Flora Protection Order (2015).
- Invasive species particularly those listed in schedule III of Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011,
- Habitats that can be considered as corridors and ‘stepping stones’ for the purposes of article 10 of the Habitats Directive.
- Red data book species.
- And biodiversity in general.

Path: R:\Map Production\2020\P20-211\Workspace\Scoping Report\P20-211_GIS_Fig5-1_EuropeanSitesWithin15km_A3.mxd

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Legend

- Site Boundary
- 15km Buffer of Site Boundary
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)

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TITLE:	European Sites within 15km of the Proposed Development		
PROJECT:	Littleton Wind Farm, Co. Tipperary		
FIGURE NO:	5.1		
CLIENT:	Bord Na Móna		
SCALE:	1:175000	**REVISION:**	0
DATE:	13/09/2021	**PAGE SIZE:**	A3

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6.6.2 Assessment Methodology

Desk studies will be undertaken in which ecological databases, such as those of the National Parks and Wildlife Service (NPWS), EPA and NBDC will be consulted. The NPWS, Inland Fisheries Ireland and the main environmental non-governmental organisations will be consulted including Bat Conservation Ireland.

Habitats shall be appraised and evaluated according to their occurrence as protected habitats under Annex I of the EU Habitats Directive (92/43/EEC) and for their capacity to support rare, threatened and endangered species. The methodology used to assess the impact on habitats is based on NRA guidelines (2009[1]), CIEEM guidelines and EPA guidelines. The habitat mapping exercise will have regard to the 'Best Practice Guidance for Habitat Survey and Mapping' (Smith *et al.*, 2011[2]) published by the Heritage Council. In addition to habitat identification, each habitat will be assessed for its ecological significance, based on the National Roads Authority (NRA) Site Evaluation Scheme (NRA, 2009). Annex I habitat surveys are likely to be required, especially for blanket bog, fen and heath habitats known to occur on site.

Botanical surveys for rare plants shall also be undertaken. Rare bee orchids (purple with some yellow variants) are known to be located in the Longfordpass North townland and historical records of blue fleabane are present. Surveys will also be undertaken for invasive plants. Invasive Japanese knotweed is known to occur at Longfordpass.

Given the downstream hydrological from the project's location to the Lower River Suir cSAC (002137), aquatic surveys are required to establish the existing baseline and to examine the potential for protected aquatic species to utilise the watercourses draining the site. Surveys shall be required for aquatic Annex I habitats, freshwater pearl mussel, white-clawed crayfish and fish.

Bat surveys will be undertaken in accordance with 'Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation' (Scottish Natural Heritage, 2019[3]). Winter and breeding roost surveys will be required. Activity surveys will also be required during the bat activity season April to September as per Bat Conservation Ireland and Bat Conservation Trust Guidelines. Three rounds of static detector surveys (spring, summer and autumn) will be required and also a survey at height that will be conducted at the same time as the static detector surveys (using a met mast).

The proposed site will require surveying for terrestrial mammal species including *inter alia* badger, red squirrel, Irish hare, Irish stoat, pine marten, hedgehog and otter. A targeted marsh fritillary survey is required due to the potential for marsh fritillary habitat on-site and historical records within the study area. During the course of ecological surveys of the site, other species of fauna shall be recorded and considered in the ecological appraisal (there are historical records of common frog and smooth newts on site).

[1] NRA (2009). Environmental Assessment and Construction Guidelines. Published by the National Roads Authority.

[2] Smith, G.F., O'Donoghue, P, O'Hora K., and Delaney, E. (2011). Best Practice Guidance for Habitat Survey and Mapping. Published by the Heritage Council.

[3] Scottish Natural Heritage, Natural England, Natural Resources Wales, Renewable UK, Scottish Power Renewables, Ecotricity Ltd, the University of Exeter and the Bat Conservation Trust (2019): Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation.

6.6.3 Potential Impacts

This chapter of the EIAR will address the nationally designated sites, terrestrial and freshwater (aquatic) habitats and species, including those of conservation concern on and in close proximity to the proposed wind farm and including along and in close proximity to the proposed cable route and proposed haul route.

The ecological evaluation of the site and its' biodiversity will be assessed according to NRA (2009). Once the value of the identified ecological receptors (features and resources) is determined, the next step will be to assess the potential impact and resulting effect of the proposed development on the identified key ecological receptors.

This will be carried out with regard to the criteria outlined in various impact assessment guidelines (NRA, 2009; CIEEM, 2018). The impacts will be assessed under a number of parameters such as magnitude, extent, timing, frequency, duration and reversibility. The impact significance criteria detailed in the EPA guidelines (EPA, 2017) will be used where applicable.

Potential impacts that will be considered at design sage of the proposed wind farm on Biodiversity include:

- Direct loss of habitat due to the footprint of the area;
- Damage to adjacent habitats during construction which could potentially be affected by construction activity;
- Impacts during construction on the hydrology of water dependant habitats
- Impacts on water quality both at a local level and regional level due to pollution run-off whether during or post construction;
- Impacts on aquatic species during construction or due to pollution events etc;
- Disturbance to local wildlife, including loss of habitat, disturbance and displacement;
- Damage to or habitat loss of important wildlife corridors or stepping stones during construction. Fragmentation of same at a larger more regional level as a result of habitat loss;
- The introduction of alien invasive species during construction;
- Impacts on the conservation status or constituent parts of designated sites.
- Potential impacts associated with tree felling and any required replanting on designated sites, habitats, Biodiversity.

Potential impacts on European (Natura 2000) sites because of the proposed development will be assessed though the appropriate assessment process.

6.6.4 Appropriate Assessment

An Appropriate Assessment Screening Report and a Natura Impact Statement (NIS) will be prepared in respect of the proposed development, so as to enable the competent authorities to carry out an Appropriate Assessment as required by Article 6(3) of Council Directive 92/43/EEC ("the Habitats Directive") and section 177U of the Planning and Development Act 2000, as amended ("the 2000 Act"). The potential impact to European sites due to tree felling and any proposed replanting shall also be considered.

Where negative effects on a European site cannot be discounted during the Screening for Appropriate Assessment, a Natura Impact Statement will be prepared. The NIS will be a detailed, targeted assessment of the nature and potential significance of direct and indirect impacts arising from the proposed project to assessed if the project will not adversely affect the integrity of a European site.

European sites, as defined in the 2000 Act, comprise both Special Protection Areas (SPAs) for birds and candidate Special Areas of Conservation (cSACs) for habitats and other species, and are designated by Member States pursuant to the requirements of Council Directive 79/409/EEC, now Directive 2009/147/EU, on the conservation of wild birds ("the Birds Directive") and the Habitats Directive, respectively.

There are six SACs located within 15 km from the proposed wind farm site:

1. The Loughans SAC (000407) located c. 7.8 km northeast;
2. Lower River Suir cSAC (002137) located 7.9 km southwest;
3. River Barrow and River Nore cSAC (002162) located 8.9 km southeast;
4. Spahill and Clomontagh Hill cSAC (000849) located 9.8 km northeast;
5. Galmoy Fen SAC (001858) located 11.8 km northeast;
6. Cullahill Mountain SAC (000831) located 13.8 km northeast.

No SPAs are located within 15 km from the proposed wind farm site. The nearest are:

1. River Nore SPA (004233) located c. 18.9 km;
2. Slievefelim to Silvermines Mountains SPA (004165) located c. 27 km northwest;
3. Slieve Bloom Mountains SPA (004160) located 27.7 km northeast;
4. Lough Derg (Shannon) SPA (004058) located 46.3 km northeast.

The site is hydrologically connected to the Lower River Suir cSAC to the southwest (c. 13.2 km instream distance).

Among the qualifying interests protected under the Lower River Suir cSAC designation for this site are eight aquatic species (freshwater pearl mussel, sea lamprey, brook lamprey, river lamprey, twaite shad, salmon, white-clawed crayfish and otter) and seven habitats. The qualifying interest aquatic habitats include water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation and alluvial forests.

The other five SACs lack a downstream hydrological or hydrogeological connection (in separate sub-catchments) to the site and are designated for habitats that are contained within the SAC site boundaries. The considerable remove between the site and the SPAs is outside of the core foraging ranges for avian conservation interest species.

The Loughans SAC and Spahill and Clomantagh Hill are also designated proposed National Heritage Areas (pNHAs).

In addition, there are no NHAs and four other pNHAs within 10 km of the site boundary:

1. Laffansbridge pNHA (000965) located c.3.6 km south
2. Kilcooly Abbey Lake pNHA (000958) located c.5 km east
3. Killough Hill pNHA (000959) located c.8.4 km west
4. Cabragh Wetlands pNHA (001934) located c.9.6 km west

The site is hydrologically connected to Laffansbridge pNHA (c. 6.2 km instream-distance) and Cabragh Wetlands pNHA (c. 14.1 km instream-distance) from the south and west, respectively. Laffansbridge pNHA is designated for calcareous grassland habitats and Cabragh Wetlands is designated for wetland habitats and waterfowl.

The other pNHAs lack a downstream hydrological or hydrogeological connection (different sub-catchment) to the site and/or are designated for habitats that are contained within the pNHA site boundaries. Kilcooly Abbey Lake pNHA is designated for aquatic flora, otters and waterfowl.

For each European Site, the qualifying interests or special conservation interests of each European site will be identified, and the potential effects summarised.

Potential effects on species or habitats will be evaluated with respect to the scale, extent and nature of the effect, for example the area of habitat affected, changes in hydrodynamics, the percentage reduction in species density, potential changes in species distribution. The duration of the effect will be determined in terms of the duration of the works and the amount of time required for the species and / or habitat to be replaced or to recover from the effects. Information on the main alternatives studied by the developer and why they were excluded will also be provided within the AA process.

During the AA process, mitigation measures can be developed to reduce / avoid effects on European Sites.

6.7 Chapter 7: Ornithology

This chapter of the EIAR will address potential impact on Ornithology , including those of conservation concern within and in close proximity to the proposed wind farm; including along and in close proximity to the on-site cable routes; on and in close proximity to the sub-station, tree felling and any required replanting. It will also address the potential impacts on Ornithology from the proposed underground cable between the proposed wind farm and the grid connection point as well as any proposed alterations to the public road network required for the delivery of turbine components.

In particular, the assessment will focus on:

- Birds listed in Annex I of the Birds Directive as well as red and amber listed bird species.

Desk studies will be undertaken in which ecological databases, such as those of the National Parks and Wildlife Service (NPWS), EPA and NBDC will be consulted. The NPWS and the main environmental non-governmental organisations will be consulted.

Bird survey methods have been selected following a review of best practice guidelines, including guidance available from Scottish Natural Heritage (SNH), and following consultation with NPWS and other bodies such as BirdWatch Ireland. Bird surveys have been previously conducted in the winters of 2012/2013 and 2013/2014. Bird Surveys for the proposed development commenced in October 2019 and took place over winter season of 2019-2020 (Oct – March) and Breeding Season of 2020 (April – September). These surveys were carried out by Biosphere on behalf of the applicant. FT took over surveying work for the proposed development in October 2020 and are ongoing at the site.

The scope of the bird survey includes vantage point surveys (from 14 locations around the site), transect surveys, point counts, hen harrier roost surveys and a barn owl survey. Kingfisher and merlin surveys are required due to historical and recent survey records within the study area. Breeding curlew are known to occur in the townland of Derryhogan and breeding colonies of black-headed gull are known to occur throughout the site.

6.7.1 Potential Impacts

Potential impacts of the proposed wind farm on Ornithology includes:

- Disturbance to birds, due to habitat loss;
- The potential collision risk to birds and bats;
- Displacement or disturbance of bird species (including breeding areas) during all phases of the project;
- Displacement or disturbance to breeding waders from areas within the proposed wind turbine envelope;
- Barrier effect on migrating birds, whereby individual species' dispersal or migration routes are affected by the placement of turbines which effectively cause a barrier;

6.8 Chapter 8: Land, Soils and Geology

6.8.1 Aspects to be addressed

The assessment will address soils, subsoils and bedrock geology underlying the proposed wind farm site as well as hydrogeology. The assessment will also consider ground conditions and peat stability.

6.8.2 Assessment Methodology

The methodology for the soils and geology assessment will be in accordance with the guidelines published by the Institute of Geologists of Ireland in 2013, 'Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements'.

Desktop assessments will be followed by site walkovers. Each site walkover will include peat probes and/or use of a hand vane/gouge cores at selected locations to confirm the presence and/or depth of peat (if present) across the project area and to record and identify geological features of interest and drainage. In addition, the following will also be conducted:

- A review of the characteristics of the entire project area (ground and groundwater conditions, topography, vegetation cover/condition and peat formation, if any, across the project area)
- Identification of past and present land use of the project area (peat harvesting, forestry etc.) and their current impact on the existing ground and groundwater conditions
- Identification of potential borrow pit locations (if required)
- Identification of areas for possible reinstatement of peat or other materials and the development of a peat and spoil management plan
- Identification of potential for peat landslide - With reference to slope stability issues in areas where peat is present, reference will be made to the Guidance Note for Peat Landslide Hazard and Risk Assessments Best Practice Guide for Proposed Electricity Generation Developments (2nd Edition, 2017). A peat stability report will be prepared for the site.

Appropriate site investigation works will be undertaken to allow for the characterisation of the ground and groundwater conditions, following guidance in Peat Landslide Hazard and Risk Assessments: Best Practice Guide for proposed Electricity Generation Developments (2nd Edition, 2017).

The data gathered will be used to inform the final location of all turbines and associated infrastructure. An earthworks balance calculation will be prepared for the overall development to assess where excavated material can be beneficially re-used. In addition, an assessment of the volumes of raw material will be made which will in turn be used to validate the size of borrow pits identified.

6.8.3 Receiving Environment

The quaternary geology underlying the proposed wind farm site is predominantly comprised of 'Cut over raised Peat'. There are small pockets of 'Till derived from Limestones' located throughout the south and north sections of the site.

The bedrock underlying the proposed site is composed of multiple formations. Within the centre of the proposed site, the underlying bedrock comprises Ballysteen Formation and is described as dark muddy limestone, shale. There is a small pocket to the north-east of the site which is described as oolitic limestone (Lisduff Oolite Member), described as a thickly bedded, pale blue-grey well jointed oolite. An area south of the proposed site has underlying bedrock identified as Waulsortian Formation and is described as massive, un-bedded lime-mudstone. The Waulsortian Formation has also been identified throughout the north-west of the site location but is described as dolomitised, massive, fine-grained limestone. Throughout the south-east, south-west and north-west corners of the site, the underlying bedrock has been identified as Crosspatrick Formation and is described as pale grey cherty crinoidal limestone.

The proposed development lies within two groundwater bodies (GWB). The centre of the proposed site lies within the Templemore A GWB, which has a flow regime classed as poorly productive bedrock. The rest of the site is located within the Thurles GWB, which as a flow regime classed as Karstic.

Multiple groundwater aquifers have been identified within the site boundary. Within the centre of the proposed site, the aquifer is described as a locally important aquifer – bedrock which is moderately productive only in local zones. There is a small pocket to the north-east of the site with is described as a locally important aquifer – bedrock which is generally moderately productive. The south of the proposed site has an aquifer described as a regionally important aquifer – karstified. The north-west area of the site is described as a regionally important aquifer – karstified (diffuse). Throughout the south-east, south-west and north-west corners of the site, the groundwater aquifer has been identified as a locally important aquifer – bedrock which is generally moderately productive.

No karst features have been identified within the site boundary.

A Geological Heritage Area is noted within the site boundary. The geological heritage area is identified as Littleton Bog, and is described as an extensive area of peatland in a wide and extensive flat plain northwest of Slieve Ardagh.

There have been no recorded landslide events on-site or within 10km of the site boundary.

6.8.4 Potential Impacts

The potential impacts of the development of the wind farm on the land, soils, geology, hydrogeology and slope stability are:

- The excavation and removal of soil and rock and interference with any existing drainage has the potential for direct permanent effect that, without mitigation, could alter the existing hydrogeological balance;
- The construction of the turbines, hardstanding areas, substation, access tracks, borrow pits and cable trenches has the potential to cause hydrogeological impacts by modifying the natural groundwater levels adjacent to the excavation. This in turn may deprive ditches and steams of their natural supply of water which may lead to reduced base flow and recharge to the bedrock aquifer;
- Areas which are underlain by peat deposits are susceptible to slope stability issues, including peat slides and bursts, when changes are made to topography, hydrogeology and hydrology of the area.
- The use of granular fill and other materials for the construction of the internal roads and hardstanding areas has the potential to impact on the source quarries or borrow pits;

- Excavations have the potential to increase erosion and sediment release that could also have additional impacts on water quality due to sedimentation of water courses;
- Soil compaction may occur due to movement of construction and maintenance traffic;
- Removal of sub soils may result in the exposure of the underlying rock to sources of contamination and may increase the vulnerability of the aquifer, whether or not the rock is exposed;
- Chemical pollution may occur as a result of an accidental spillage or leakage of chemicals, runoff from vehicle washing facilities, unset concrete, storage of fuels or refuelling activities, etc. Chemical pollutants may enter the groundwater and have implications for ecology and any wells in the area, particularly those located down-gradient of the project; and
- Sanitary waste arising from temporary construction compounds could lead to contamination of groundwater.

6.9 Chapter 9: Hydrology, Hydrogeology and Water Quality

6.9.1 Aspects to be Addressed

The assessment will address impacts on hydrology and water quality associated with the proposed Littleton Wind Farm project.

6.9.2 Assessment Methodology

Site visits will be undertaken to establish the constraints relating to hydrology and to acquire a basic knowledge of water management on the site. The information gained on these site visits will provide input into the design layout with the aim of minimising river/stream crossings, providing a buffer to hydrological features and avoiding areas of significant flood risk.

The desk study will involve setting out the principles for surface water management and treatment for the site specific land use at the proposed wind farm. The study will consist of a review of existing baseline data including water quality data from the EPA, River Basin Management Plans and flood risk data from the OPW. The review will include the County Development Plan and consideration of the policies and objectives of the Plan in relation to surface water and flooding.

Any concerns expressed by consultees such as Inland Fisheries Ireland and the local authority, relating to hydrology and drainage, will be addressed. Additional water sampling will be carried out to fill any gaps in baseline data.

Once the design layout is fixed, a further site visit will be scheduled in to undertake a walkover of the site, to confirm that the proposed development infrastructure is appropriately sited. All the streams locations crossed by the proposed layout and grid cable route will be inspected and crossing method of the grid cable will be proposed.

The following will also be included as part of the assessment for Hydrology:

- Identify potential impacts of the proposed development on hydrology (hydrodynamics and flooding).
- Identify potential cumulative hydrological impacts of the proposed development with any neighbouring wind farms.
- Consider potential drainage into sensitive catchments.
- Site drainage investigation will involve identification of drainage sub-catchments, studying the requirement(s) of cross-drainage works, etc.
- Identification of mitigation measures for flooding and pollution of receiving waters.
- Identification of residual impacts.

The Hydrology Chapter will include a section on flood risk identification and assessment. This will include an assessment of the potential increase to flooding elsewhere and it will examine the potential flood risk to the proposed development. The type of development will be assessed in accordance with the Planning System and Flood Risk Management Guidelines for Planning Authorities, November 2009 (as amended). Where parts of the development are located on areas encroaching on floodplains, this may require additional drainage measures and further measures required to mitigate flood risk.

Mitigation, such as attenuation of surface water run-off from the site, will be proposed where increases in flood risk are deemed to be significant. In the case of essential infrastructure such as a sub-station, these are not permitted to be in a floodplain.

For the internal roads, stream crossings will be identified, and a preliminary design of the proposed stream crossings will be prepared and assessed in the EIAR. The accommodation of overland flow will be assessed and suitable locations for the treatment of discharges identified.

6.9.3 Receiving Environment

The proposed wind farm is located within Suir_SC_040 sub-catchment. The southern part of the site drains into the Breegagh Stream and North Glenogoole Stream. Both streams run in southeast-northwest direction. The North Glenogoole Stream is a tributary of the Black (Two Mile Borris).

The eastern part of the site is bounded by 2 streams, the Black (Two Mile Borris) Stream and Old Deer Park Stream. These streams are tributaries of the Drish Stream.

Drish Stream joins the River Suir, which forms Lower River Suir SAC (002137), approximately 7.8km northwest of the study area.

The western part of the site is drained by small unnamed streams which ultimately join the Clover Stream. This stream is also a tributary of the Drish Stream.

6.9.4 Potential Impacts

The assessment will address the potential for construction, operational and decommissioning impacts on water quality in the receiving watercourses.

The main potential impact from the construction of the wind farm development is the potential increase in runoff and sedimentation of watercourses. Rainfall run-off containing silt could potentially lead to siltation and consequent physical effects on flora and fauna in aquatic habitats.

Sediment has the potential to arise from:

- Excavations for the turbine bases, hardstand areas, substation location, compounds etc.; if left exposed, spoil heaps could lead to an increase in silt-laden run-off draining off site.
- Haulage roads passing close to watercourses could allow the migration of silt-laden run-off into watercourses.
- Tree felling could lead to an increase in sediment in the surface water run-off.
- While the cable trench is open adjacent to a watercourse and at stream crossings, this could lead to an increase in the concentration of suspended solids in the watercourse.

In addition, possible impacts on water quality during construction activity include:

- Concrete operations could contaminate receiving waters.
- Runoff from vehicle washing facilities could lead to contamination of receiving waters.
- Refuelling activities could result in fuel spillages.

Other potential impacts on hydrology and drainage that may arise from the proposed development of the wind farm site include impacts on localised flooding patterns and downstream structures as well as cumulative hydrological impacts with neighbouring developments.

During the operational phase of the wind farm, potential impacts on water quality will arise from potential spillages of lubricants, coolants and hydrocarbons in the operations of the turbine transformers as well as routine maintenance of all plant and equipment.

6.10 Chapter 10: Air Quality and Climate

6.10.1 Aspects to be Addressed

The assessment will address the potential impacts on air quality, climate and weather due to construction, operation and decommissioning of the proposed development. The assessment will also include Carbon Balance calculations for the project.

6.10.2 Assessment Methodology

Air quality monitoring conducted by the EPA at a number of locations in the vicinity of the project will be reviewed and levels compared with the air quality standards. To assess the impacts of construction dust emissions, the approach and assessment criteria will follow the following guidance; Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (2011); Guidance on the assessment of dust from demolition and construction (Institute of Air Quality Management (IAQM), 2014); and Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance (IAQM, 2011).

For the purposes of assessing the impact on air quality of emissions generated by construction traffic, the methodology described in the Design Manual for Roads and Bridges (DMRB) (Volume 11, Section 3 Air Quality, May 2007) will be used. Parameters to be assessed will include oxides of nitrogen, particulates PM10 and PM2.5, carbon monoxide and benzene.

The potential micro-climatic impacts of the proposed Littleton Wind Farm will be assessed in relation to the micro-climatic baseline, the scale of the elements of the project and the nature of use of the surrounding environment.

For the assessment of macro-climatic effects, the emissions of carbon dioxide (CO_2) and other greenhouse gases from fossil fuel power generation, which will not be required should the proposed Littleton Wind Farm become operational, will be quantified and assessed in the context of current climate change policy and protocols.

6.10.3 Receiving Environment

In terms of micro-climate, the proposed wind farm is located in a rural area corresponding to air quality zone D, Rural Ireland, in the Air Quality Regulations SI 180 of 2011, as amended. Therefore, the air quality is expected to be good.

The macro-climatic baseline is the future emission of CO2 and other greenhouse gases, which would be produced by fossil fuel power generation in the country, in the absence of the proposed wind farm.

6.10.4 Potential Impacts

The construction phase of the proposed Littleton Wind Farm has the potential to generate dust emissions, which could give rise to nuisance for local residents. To assess the impacts of construction dust emissions, the approach and assessment criteria outlined in the Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (National Roads Authority, 2011) and EPA Guidelines will be used.

Construction plant and equipment, and the traffic generated by the construction process, have the potential to give rise to emissions of oxides of nitrogen, benzene and particulates, which could impact on local air quality. The operation of the proposed wind farm is not expected to have a negative impact on air quality.

The proposed Littleton Wind Farm is expected to have a positive impact on emissions of CO2 and other greenhouse gases. It is expected that the proposed development will have a positive impact on Air Quality including NOx and Sox, a calculation of same will be included in the EIAR.

6.11 Chapter 11: Noise and Vibration

Aspects to Address

The chapter will address noise and vibration impacts from the construction, operation and decommissioning of the proposed wind farm.

Assessment Methodology

The noise assessment will be carried out on each phase of the wind farm:

- Construction phase
- Operational phase, including turbine and sub-station operations
- Decommissioning phase, including dismantling the turbines, and related traffic.

The Wind Energy Development Guidelines (2006) are currently the statutory guidelines for carrying out noise assessments for wind energy development in Ireland. . The Wind Energy Development Guidelines 2006, the Draft Wind Energy Guidelines (2019) and the Institute of Acoustics (IOA) 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' will all be considered in developing and assessing the wind farm.

The noise impact assessment will involve measurement of background noise levels and predicting noise impacts from the proposed development and nearby operational and consented developments.

The background noise levels will be used to derive noise limits in accordance with relevant guidelines at the time the development is submitted for planning. In the event that the predicted noise levels exceed the noise limits, mitigation measures will be outlined.

Construction/decommissioning noise predictions will be carried out to determine the noise levels at the nearest noise sensitive locations. Noise prediction will be carried out using British Standard BS 5228-1:2009+A1:2014, Code of practice for noise and vibration control on construction and open sites – Part 1: Noise. Predicted construction noise levels will be compared against noise levels in BS 5228:2009+A1:2014 Part 1. Where the impact significance identifies a requirement for mitigation, mitigation measures will be outlined.

Receiving Environment

All dwellings in proximity to turbines have been identified. A minimum setback distance of at least four times the tip height from dwellings will be implemented as part of the turbine layout design process.

Potential Impacts

Potential noise impacts will be addressed at the design stage by locating turbines appropriately set back from sensitive receptors and where necessary by employing turbine noise reduced modes of operation to comply with the noise limits in force at the time of application.

Key Issues/Considerations

Cumulative Noise

There are several operational wind farms within 12 km from the proposed Littleton WF. 12km is considered to be the zone of influence for cumulative noise assessment in accordance with relevant guidelines. Cumulative noise impacts will be considered at design stage and will be assessed in the EIAR with respect to proximate wind energy developments. Furthermore, cumulative noise impacts of the proposed development in combination with other planned or permitted projects in the area will be considered.

6.12 Chapter 12: Shadow Flicker

6.12.1 Aspects to be addressed

This chapter will address the potential effects of shadow flicker associated with the proposed development, i.e. the moving shadows cast by the turbine blades in times of direct sunlight.

6.12.2 Assessment Methodology

A shadow flicker assessment will be carried out using ReSoft Wind farm software which will calculate times throughout the year when a turbine, viewed from the window of a house, is in line with the sun, and therefore the potential exists for shadow flicker to occur. All occupied and unoccupied dwellings and permitted houses (that are not yet constructed) as well as any other property considered sensitive (schools etc) within 10 rotor diameters of a proposed turbine will be included in the assessment.

The effect of shadow flicker is not considered significant beyond the distance of 10 rotor diameters from each turbine location.

The outputs of the modelling assessment will be used to identify the potential direct and indirect impacts of shadow flicker on dwellings. The results will be compared with relevant guidance including:

- Section 5.12 of the 2006 Department of Arts, Heritage and the Gaeltacht (DoEHLG) Planning Guidelines on Wind Energy Developments (2006).
- Section 5.8 of the Department of Housing, Planning and Local Government's Draft Revised Wind Energy Development Guideless (2019)
- The Irish Wind Energy Association 'Best Practice Guidelines for the Irish Wind Energy Industry' (2012).

Cumulative impacts of the proposed Littleton Wind Farm and other third-party schemes will be assessed. IWEA Best Practice Guidelines (2012, Section 6.3.4) states that "any such wind farm developments within 2 km of the proposed development should be considered in a separate cumulative shadow flicker assessment. It is therefore unlikely that cumulative impact will occur from shadow flicker as there are no existing or permitted wind farms within 2km distance of the project site.

6.12.3 Receiving Environment

The general receiving environment is rural with a number of small towns and villages in the surrounding area. The majority of buildings in the vicinity of the proposed development are residential or agricultural buildings. Much of these receptors are located in clusters to the east and west of the site with sparser densities located to the north and south of the project site.

6.12.4 Potential Impacts

In times of direct sunshine, wind turbine blades could occasionally cast moving shadows on residences in close proximity to the turbines. At certain times of the year, the moving shadows of the turbine blades can periodically reduce light to a room causing the light to appear to flicker. Shadow flicker would not generally have any effect on health or safety but could on limited occasions present a brief nuisance effect.

6.13 Chapter 12: Landscape and Visual

6.13.1 Aspects to be Addressed

The landscape and visual assessment report will appraise the existing landscape character of the project area and its wider setting in order to assess the likely landscape, visual and residential amenity impacts arising from the proposed development. A Study Area of 30km is defined as set out in best practice guidance recently updated by Scottish Natural Heritage 2017. A suitable, bespoke study area will be proposed following further detailed analysis of the project.

Potential mitigation measures are also included. Aspects to be addressed in the EIAR are:

- ✓ Receiving environment, covering details on:
  - o Wider landscape context
  - o Localised site context.
  - o Landform, landcover, land use patterns and trends
  - o Key/unique landscape elements and features
  - o Defining attributes of the wider landscape
- ✓ Landscape character, covering details on:
  - o Character as outlined in CDP
  - o Associated landscape values
  - o Sensitivity levels within the landscape
  - o Statutory designations
  - o Landscape designations
  - o Scenic/amenity routes
  - o Views and prospects
  - o Features of natural and built heritage
- ✓ Landscape Policy Context
  - o Relevant policy objectives within the Tipperary County Development Plans, Landscape Character Assessment and LAPs
  - o Relevant policy objectives within neighbouring counties within the 30km Study Area (Objectives appendicised).
- ✓ Visual context
  - o Zone of Theoretical Visibility
  - o Viewshed Reference Points (Detailed findings appendicised).
  - o Route Screening Assessment (Detailed findings appendicised).

Assessment of these aspects will ultimately inform potential landscape, visual and amenity aspects, residual impacts, and in turn appropriate mitigation measures to ensure impacts are not significant.

6.13.2 Assessment Methodology

The LVIA Methodology can be summarised as undertaking the following key tasks:

- Desktop study of the project area in relation to its overall wider context;
- Visit to the project area and its environs;
- Visit to assess residential amenity impacts;
- Visit to assess route screening;

- Defining the baseline general landscape character, setting, and condition in relation to the position of the proposed development;
- Engagement with relevant landscape and amenity planning designations with the study area as outlined in the North and South Tipperary County Development Plans and the Draft Tipperary County Development Plan 2022 and any relevant policy within neighbouring county Kilkenny which fall within the 30km study area;
- Identification of quality and types of views in the areas;
- Establishing the extent of the visual envelope, i.e. the potential area of visibility of the project area in the surrounding landscape;
- Identification and evaluation of key components of the proposed development;
- Assessment of potential landscape and visual impacts, and residual impacts;
- Assessment of potential cumulative impacts with proposed/existing developments in the area;
- Preparation of Zone of Theoretical Visibility Maps (ZTVs) to a radial distance of c.30km from the project area; and
- Consideration of mitigation and enhancement measures.

The LVIA methodology is guided by the following guidance:

- Department of Environment, Heritage and Local Government 2006, Wind Energy Development Guidelines for Planning Authorities.
- Department of Housing, Planning and Local Government 2019, Draft Revised Wind Energy Development Guidelines.
- Environmental Protection Agency, 2002, Guidelines on the information to be contained in Environmental Impact Statements.
- Environmental Protection Agency, 2003, Advice Notes on current practice in the preparation of Environmental Impact Statements.
- Environmental Protection Agency, 2015, Draft Revised Guidelines on the information to be contained in Environmental Impact Statements.
- Environmental Protection Agency, 2017, Draft Revised Guidelines on the information to be contained in Environmental Impact Statements.
- Environmental Protection Agency, 2015, Draft Advice Notes on current practice in the preparation of Environmental Impact Statements.
- Landscape Institute, and Institute of Environmental Management & Assessment, 2013, Guidelines for Landscape and Visual Impact Assessment, 3rd Ed.
- Scottish Natural Heritage, 2017, Visual Representation of Wind Farms, Version 2.2.

The impact significance criteria used in the assessment are based on the EPA Guidelines, 2002 and Advice Notes, 2003 with reference also to EPA's draft 2017 revised guidelines and the 2015 draft Advice Notes.

6.13.3 Receiving Environment

The proposed Littleton wind farm is located in an extensively flat peatland context that has some sensitive landscape and visual receptors. The surrounding landscape also comprises of a rural population and encompasses a number of nearby settlements, the nearest of which (Ballinonty) is situated just over 1.7km southeast of the site boundary.

Some of the more sensitive receptors include Kilcooley Abbey and Warehouse Hill, both of which are situated to the east/southeast of the site and Liathmore Churches located outside the western boundary of the site. The site is also bound by a number of scenic routes, one of which is situated along the M8 motorway between the northern and southern extents of the site and another which is situated along the nearest regional road to the east of the site.

The proposed wind farm site is situated in the landscape archetype 'Plains' and the landscape character type 'A2 Peatlands & Wet Mixed Farmland' as defined in the County Development Plan. This principal landscape character type is sub-divided into three landscape character areas, of which, the proposed development is situated between 'LCA 8 – Littleton Raised Bog' and 'LCA 9 – Littleton Farmland Mosaic and Marginal Peatland'. LCA 8 is identified with a landscape sensitivity ranging from 'Class 1-Normal' to 'Class 3-Sensitive' although its dominant sensitivity classification is that of 'Class 3-Sensitive' ('limited' capacity to accommodate development).

Similarly to this, LCA 9 is also identified with a landscape sensitives ranging from 'Class 1-Normal' to 'Class 3-Sensitive', however its dominant sensitivity classification is that of 'Class 1-Normal' ('high' capacity to accommodate development). It is important to note that sensitivity rating in the Tipperary County Development Plan range from 'Class 0-Robust' to 'Class 5-Vulnerable'. Both of these landscape character areas have been identified with a 'medium' land use compatibility with regard to wind farm developments.

The nearest scenic views to the proposed development are New Views 10 and 11 and View 33. The nearest of these is New View 11 which is situated between the site on the M8. The view here is oriented to the north and will look across the northernmost extents of the proposal site (no turbines proposed in this aspect of the site – view is also currently characterised by existing wind turbines). View 33 is situated to the east/southeast of the site and is oriented to the east. V33 will likely have a clear view of the proposed development. A number of scenic views are also located within the wider study area, one of note is V29 from Warhouse Hill. Views here are elevated and oriented east and west and will likely have a view of the proposed development.

The entire site and its immediate surrounds are situated in an area classified as 'Areas Open for Consideration for New Wind Energy Development'. The nearest area deemed 'Unsuitable for New Wind Energy Development' occur some 3km to the east of the site.

Wind farms sites in the surrounding landscape will be identified for potential cumulative impact in the EIAR.

6.13.4 Potential Impacts

In the European Landscape Convention, landscape is defined as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'. The term "landscape" is thus defined as a zone or area as perceived by local people or visitors, whose visual features and character are the result of the action of natural and/or cultural factors. Recognition is given to the fact that landscapes evolve through time and are the result natural and human activities.

Landscape and visual impact assessment has two separate but closely related aspects. The first is visual impact, i.e. the extent to which the wind turbines in the landscape can be seen. The second is landscape character impact, i.e. effects of the wind turbines on the fabric or structure of the landscape as perceived by people. Landscape character is derived from the appearance of the land and takes account of natural and man-made features such as topography, landform, vegetation, land use and built environment and their interaction to create specific patterns that are distinctive to particular localities.

The proposed wind turbines will be large structures with the potential to have significant landscape and visual impacts. The development of wind farms, including associated infrastructure such as tracks and ancillary buildings, may have a major impact on the surrounding landscape.

Key to the development of the project will be the need for clear communication of the scale and extent of the proposed project. Clear and concise mapping of the existing areas of landscape and visual sensitivity together with photomontages of the proposed wind turbines will be essential in demonstrating the nature and extent of the development.

Zone of Theoretical Visibility Mapping (ZTV's) will be prepared based on the Department of the Environment, Heritage and Local Government's 'Wind Farm Planning Guidelines'. The ZTV's will illustrate the study area extending to 30km around the proposed project area and highlight the areas where the proposed turbines will theoretically be visible from, as well as the cumulative visual impact arising from the existing and planned wind farms in the surrounding area. These ZTV's do not take into consideration vegetation cover, changing weather conditions or the mitigating effect of distance and therefore illustrate the worst-case scenario of visibility.

Estimation of the visual impact of the proposed scheme on the landscape will be based on the visual presence of the turbines, their aesthetic impact the landscape context and the significance of the impact. The assessment will examine potential landscape and visual impact of the proposed turbines on designated landscape, properties, roads, recreation and tourism areas, including;

- Direct effects on landscape features, views, routes and areas described in the County Development Plans and Landscape Character Assessments. The review of the landscape setting will account for a 30km study area from the project boundary, thereby including parts of County Kilkenny. Assessments of and objectives for landscape character will be looked at in the Kilkenny County Development Plan to ensure a consistent and integrated appraisal of the area within this 30km area.
- Potential changes to landscape and townscape character referring to the County Landscape Character Assessments noting subtle effects that contribute to the experience of more intangible landscape characteristics. Landscape types, significance/value, sensitivity and capacity for change will be examined.
- Effects on designated landscapes, views, conservation sites (including significant archaeological sites) and other special areas of interest.
- Effects during construction and decommissioning.

Viewshed reference points (VRP) from the surrounding landscape will be identified from the desktop studies outlined above and will be verified on site. Photomontages from these viewshed reference points will be prepared for the proposed wind turbines, together with a wireframe and photomontage views of the other planned/permitted wind turbines in the landscape, to assist in demonstrating the levels of visual impact.

6.14 Chapter 14: Archaeology, Architectural and Cultural Heritage

6.14.1 Aspects to be Addressed

The assessment will address features and sites of archaeological, architectural and cultural heritage significance. The purpose of the study will be to assess the significance of the receiving cultural heritage environment and to identify and evaluate the magnitude of the impact of the proposed wind farm on the sensitivity of each cultural heritage feature within this environment and on the broader historic character of the landscape. Measures will be proposed to mitigate effects (where possible) so as to allow a fully informed decision to be made by the adjudicating authority.

6.14.2 Assessment Methodology

The assessment will comprise a desk study and field walkover survey and will be based on EPA guidelines and relevant national and international best practice guidelines.

Desk Study

A review of the following information will be carried out to inform the cultural heritage assessment report:

- A review and collation of information obtained from public and statutory consultees, for example nationwide surveys such as the Record of Monuments and Places (RMP) (including National Monuments in State Care, NIAH, RPS and landscape characterisation;
- A review of designated archaeological landscapes;
- A review of the Record of Protected Structures and Architectural Conservation Areas (ACA's) in the North Tipperary County Development Plan 2010 (as varied) and the South Tipperary County Development Plan 2009 (as varied) including the Draft Tipperary County Development Pan 2022-2028;
- A review of the National Inventory of Architectural Heritage (NIAH) building survey sites, NIAH historic gardens and designed landscapes survey sites;
- A review of artefactual material held in the National Museum of Ireland Archives National Museum of Ireland;
- Review of Bord Na Móna records and agreed code of practice with the National Monument Service;
- A literature review of published and key references appropriate to the wind farm project including material from local interest groups and historical and archaeological societies;
- Collation of information from similar or other infrastructure projects in proximity to the proposed wind farms, for example EIARs, SEAs, conservation plans, archaeological test assessments and excavations (including the Database of Irish Excavations) Cartographic sources;
- A review of place names folklore/traditions and Gaeltacht areas;
- Other documentary sources; and
- A review and interpretation of aerial photographs and LiDAR imagery to be used in combination with historic mapping to map potential cultural heritage assets.

Field survey

At design stage the assessment will include a field assessment of the wind farm site, the survey will confirm the location of recorded cultural heritage sites and will record their baseline condition; as well as the archaeological potential of all areas within the wind farm project area and areas likely to be affected by the proposed development works. Fieldwork will also identify any unrecorded features of architectural or cultural heritage merit and will assess if they will be impacted by the development.

Field walkover surveys will also be undertaken along all proposed infrastructure including cable routes and access roads

Fieldwork will also seek to identify previously unrecorded roadside cultural heritage features (such as milestones, water pumps and stone bridges etc.) and structures.

A survey of alignments and views from historic sites including stone circles and stone rows located in the surrounding landscape will be assessed.

Setting

Every landscape presents different topographical and environmental conditions, land cover and land usage and as such the location, scale and physical form of each element of wind farm projects and associated works are site specific. As a consequence, the range of potential impacts depends on the individual circumstances of each proposed turbine and the combined contribution of the overall setting of the wind farm.

Based on the Zone of Theoretical Visibility, designated architectural, archaeological and cultural heritage features will be considered up to 5km of the development boundary. All undesignated cultural heritage features will be considered up to 500m of the development boundary. Selected highly sensitive heritage assets of national and international importance will be considered within 30km of the proposed development. The assessment of potential impacts on the setting of such assets will be carried out in consultation with the Landscape and Visual consultants for the proposed development and will include a review of relevant photomontages.

The reporting process ensures that all designations relating to heritage assets as well as cultural heritage features that are revealed through research, field assessment and consultation are clearly articulated. All relevant designated heritage assets will be mapped and lists all relevant cultural heritage constraints will be prepared.

Interactions and consultation

The scale, form and layout of the proposed wind farm development requires a collaborative and iterative design development process with designers, archaeologists and landscape and visual specialists interactively engaged in the process from the outset. Consultation with statutory and non-statutory bodies will also take place throughout the process.

6.14.3 Receiving Environment

A review of the project landholding has revealed that the Sites and Monuments Record and the Record of Monuments and Places list 32 recorded archaeological sites within its boundary. These comprise a range of prehistoric timber trackways and platforms, some of which were initially identified in the 1960s while further examples were identified during archaeological surveys and excavations commissioned by Bord na Móna and National Monuments Service in 2006 and 2008.

The following overview of the site types within the landholding provides brief Archaeological Survey of Ireland scope notes for each classification:

Table 6-1: Overview of recorded archaeological sites within project area

Classification	Amount	NMS Scope Note
Class 2 togher	9	A length of peatland trackway, constructed of wood, believed to be over 15m in length. These have a clear orientation and good structural definition.
Class 3 togher	5	A short stretch of peatland trackway, constructed of wood, up to 15m in length with a discernible orientation. It may not be possible to trace them beyond a single sighting. These have evidence of deliberate structure and are interpreted as laid down to cross a small area of bog.
Road/trackway	1	A way, or section thereof, which has been deliberately constructed between places.
Unclassified togher	7	A peatland trackway/causeway constructed of wood that cannot be classified as a class 1, class 2 or class 3 togher due to its form or lack of surviving evidence.
Peatland Platforms	5	A non-linear artificially raised area, usually of wood, with or without a clear shape found in a peatland context. Although platforms can vary in size, the length rarely exceeds the width.

There is a noted concentration of these sites within a narrow area of bog in the northern end of the landholding indicating that they were constructed to take advantage of a short crossing point across the wetlands. The existing condition of the recorded sites within the landholding will be determined.

A preliminary review of the locations of National Monuments in State Ownership/Guardianship within the wider landscape has revealed that there are 14 examples within 20km of the project area and the majority of these comprise early or late medieval ecclesiastical sites as well as several late medieval tower houses. Of particular note is an ecclesiastical complex known as Liathmore Churches (NM no. 266) which is located c.480m outside the west boundary of the project area and contains a number of individual recorded archaeological sites, including the remains of two church buildings.

There are no Protected Structures or features listed in the National Inventory of Ireland located within the project area or within 1km of its boundary. In addition, a review of 19th century Ordnance Survey mapping indicates that the landholding comprised vacant peatland during that century and no farm buildings or other vernacular structures are depicted within the boundary. The potential for the presence of undesignated features of cultural heritage interest within the landholding, including features associated with early modern peat extraction works, will be reviewed during the assessment process.

6.15 Chapter 15: Traffic and Transportation, Aviation, Telecommunications and Electromagnetic Interference

Traffic and Transportation

6.15.1 Aspects to be Addressed

The traffic impact assessment will address the traffic impacts on the road network from the construction, operation and decommissioning of the proposed Littleton Wind Farm.

6.15.2 Assessment Methodology

A traffic impact assessment will be conducted in accordance with the Transport Infrastructure Ireland (TII) Traffic and Transport Assessment (TTA) Guidelines, May 2014. Data collected from road traffic surveys along the delivery route will be used in the assessment.

A route survey, including swept path analysis, will be carried out by a specialist transport consultant between the port of entry options and proposed project entrance locations. This survey will identify potential pinch points and locations that may require off site temporary upgrades to facilitate the safe transport of the turbine components to the development area.

Auto Track vehicle swept path analysis (SPA) will be conducted for all potential pinch points along the public road identified in the transport route survey, to ensure that the delivery of turbine components to the proposed wind farm site can be facilitated while also identifying any mitigation measures that may be required and identifying any third party land take requirements. SPA is also carried out for the design of proposed site access points and internal wind farm road junctions as necessary to ensure compliance with turbine manufacturer civil engineering design requirements.

The methodology for the traffic impact assessment will include a review of the traffic volumes and impacts which will be generated by the construction, operation and decommissioning of the wind farm. The likely traffic that will be generated by each phase of the project is estimated to identify potential disruptions to existing road users within the study area.

Based on the project construction methodologies, an estimate of the number of vehicles generated as a result of the project is calculated and the potential for impacts on existing public road links and junctions is considered and assessed. These estimates are used to assess the impact on the road network in numerical terms in the form of annual average daily vehicle trips (AADT).

The potential for soiling or damage to public road infrastructure through poor construction practices as well as potential health and safety hazards through poor traffic management are also identified.

The effects of the project on the existing road network are then considered and described in terms of quality, duration and significance. Mitigation measures are then proposed followed by identification of residual impacts.

The assessment uses a combination of field surveys, data counters, desktop studies and consultation.

The following guidance shall be used during the assessment of traffic and transport (non-exhaustive list):

- TII Publication: Traffic and Transport Assessment Guidelines, NRA, 2014;
- TII Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections, 2019;
- EPA Guidelines on The Information to Be Contained In Environmental Impact Assessment Reports (DRAFT), 2017;
- TII Project Appraisal Guidelines for National Roads: Estimating AADT on National Roads, October 2016;
- TII Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions) DN-GEO-03060 April 2017;
- Guidance on the preparation of the Environmental Impact Assessment Report, European Commission, 2017;
- County Development Plans.

Traffic count data shall be obtained from open-source TII traffic counter information, consultation with Tipperary County Council Roads Department and private traffic count data where required.

The traffic generated by the construction workforce, by the transport of materials and equipment as well as future maintenance-related activities will be predicted. The traffic distribution pattern on the local road network during construction will be examined and impacts determined. The potential disruption to the road network during the installation of the cables and the availability of alternative routes will be assessed, where required. Recommendations will be made to mitigate any potential traffic impacts on the road network.

Transport Infrastructure Ireland (TII) shall be consulted through the EIAR scoping process. Tipperary County Council Roads Department engineers shall also be consulted.

Site access points shall be designed in accordance with TII and County Development Plan requirements for direct access geometric design and visibility sightlines.

Cumulative traffic impacts will be considered at design stage and will be assessed in the EIAR with respect to other planned developments in the area.

6.15.3 Receiving Environment

The project site is located adjacent the R639 regional route and M8 motorway which run north east to south west, to the west of the site. The R689 is located to the east of the site. The southern section of the site is bisected by an unnamed local road which connects Littleton to New Birmingham and the L4101 local road is located at the southern extent of the site. There are a number of forestry access tracks in close proximity to the site and a bog railway runs through the site which underpasses the road network.

6.15.4 Potential Impacts

The greatest potential for traffic impact from the proposed Littleton Wind Farm is during the construction phase which will give rise to additional traffic on the road network.

The turbines will be delivered to the proposed project area in separate parts, comprising of loads for each of the towers, the rotor blades, the nacelle, the rotor hub, the turbine base and the electrical components. From the port of entry the delivery route will consist of the national primary route network as much as possible. Modifications may be required to the existing local road network to cater for the delivery of the oversized loads.

Stone aggregate will be required for the upgrading of existing tracks and construction of new roads as well as the construction of turbine bases and hardstands. All of these activities have the potential to generate significant local traffic numbers.

There will be an increase in local traffic during the construction of the wind farm associated with the workforce travelling to and from site. In addition, there is potential for an increase in local traffic due to onlookers as the turbines are erected.

There will also be temporary traffic impacts from cable laying works on the public roads. These impacts will be managed to reduce the nuisance being caused to local road users.

Aviation and Telecommunications

6.15.5 Aspects to be Addressed

The rotating blades of a wind turbine can occasionally cause interference to electro-magnetically propagated signals. Such interference could, in theory, affect all forms of electromagnetic communications including:

- Satellite communications
- RADAR
- Cellular radio communications
- Aircraft instrument landing systems
- Air traffic control
- Terrestrial microwave links
- Television broadcasts

In addition, it is possible that houses in the immediate vicinity of the turbines could require some remedial measures in relation to television reception.

The EIAR will include an assessment of any such potential impacts.

6.15.6 Assessment Methodology

An evaluation of the possible effects that the proposed development could have on aviation and existing telecommunications networks will be conducted.

A study will be undertaken to analyse the impact of the turbines on telecommunications operator's point-to-point microwave radio links. All relevant operators in the area will be consulted to identify links and to agree defined buffers where required.

This evaluation will include the generation of GIS based telecommunications constraints mapping for the areas affected. The purpose of this mapping is to identify potential negative impacts on the telecommunications network and facilitate the selection of optimum sites and turbine locations by avoiding telecommunication links where possible, and thereby limiting any potential negative impacts on service providers in the area.

The proposed assessment methodology will include:

- Consultation with Irish Aviation Authority, Department of Defence, Commission for Energy Regulation, emergency services;
- Consultation with telecommunications operators to gather the necessary data;
- Preparation of constraint mapping based on feedback on consultation and design the project with the appropriate buffers in place.
- Further specialist investigations will be carried out if the telecommunications operators identify potential impacts; and
- Where necessary, mitigation measures to be agreed with operators including:
    - Turbine relocation
    - Telecommunications link relocation
    - Underground fibre optic cables to replace microwave link
    - Submission of final detailed layout to telecoms operators.
    - Agree any layout alterations following final detailed assessment by telecoms operators or agree suitable mitigation measures if necessary.

Impacts on aviation will be considered following detailed discussions with the Irish Aviation Authority.

6.15.7 Receiving Environment

An initial desktop study has been conducted to identify telecommunication infrastructure in the area of the proposed project. The Comreg site viewer4 identifies several telecom masts in the surrounding proximities of the project.

7 no. mast locations have been identified within ca. 5 km of the project site. 4 of these are located along the M8/R639 road corridor. One mast site has been identified directly at the south of the site and two further telecommunications mast are located south and south east of the proposed wind farm site.

All operators of these masts will be contacted in relation to the project and the information will be analysed and the project will be designed around any potential constraints. This approach is proving successful on similar wind farm projects.

[4] http://siteviewer.comreg.ie/#explore

The most proximate airport/aerodrome is Kilkenny Airport, located approx. 22 km from the project site. The site is located within 3km of a Motorway so the Department of Defence will be consulted.

6.15.8 Potential Impacts

An evaluation of the possible effects that the proposed development could have on aviation and existing telecommunications networks will be conducted. A study will be undertaken to analyse the impact of the turbines on telecommunications operator's point-to-point microwave radio links.

The Irish Wind Energy Association 2012 guidelines, "Best Practice Guidelines for the Irish Wind Energy Industry", indicate that wind turbines within 20 km of a radio navigation aid have the potential to cause electro-magnetic interference with these signals. It is possible that houses in the immediate vicinity of the turbines could require some remedial measures in relation to television reception.

In practice, such measures are not difficult to implement, are relatively inexpensive and if necessary, will be undertaken by the developer in conjunction with RTÉ.

7 CUMULATIVE IMPACTS, INDIRECT IMPACT AND INTERACTION OF EFFECTS

7.1 Aspects to be Addressed

The cumulative impact of the proposed Littleton Wind Farm with other projects which are either existing, permitted or pending planning permission, or for which there is information in the public domain, at a sufficient level of detail to allow assessment, will be addressed. An example of a project within the public domain can be projects that are listed in the County Development Plan, National Development Plan or identified in the planning or consenting process. . Indirect effects and effects in different environmental media will be addressed.

The cumulative effects from the construction of the wind turbines, cabling and haul route alterations will also be assessed.

7.2 Cumulative Assessment Methodology

The assessment methodology will be based on the EPA guidance and the EU guidelines, 'Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions', published by the Office for Official Publications of the European Communities in May 1999.

The potential for significant cumulative and indirect impacts will be examined and any such potential impacts will be identified. Where the potential for significant cumulative is identified, such impacts and interaction of impacts will be included in the scope and addressed in the baseline and impact assessment studies for each of the relevant environmental media and aspects of the project. The cumulative impacts will be presented in the chapters of the EIAR which address the most relevant environmental media.

7.3 Receiving Environment

There are a number of wind energy projects located in the surrounding landscape of the proposed Littleton Wind Farm which will be considered for cumulative impact. These include the following wind farms:

- Gurteen Lower Wind Farm (c.4km southeast)
- Lisheen Wind Farm (c.4km north)
- Bruckana Wind Farm (c.8km north)
- Ballybay Wind Farm (c.9km east)
- Kill Hill Wind Farm (c.9km southwest)
- Foyle Wind Farm (c.12km east)

Furthermore, projects with planning permission for wind energy developments which have not yet been constructed will also be considered. This includes the proposed Farranrory Wind Farm (c.10km east).

Other planned, permitted or constructed projects in the area will be considered for potential cumulative impact. Furthermore, significant projects within the region will also be considered for potential cumulative impact.

7.4 Potential Impacts

If other projects of similar scale and type are under construction at the same time as the proposed Littleton Wind Farm, there would be potential for cumulative impact due to increased construction traffic, increased demand on construction materials and skills as well as potential for increased runoff to local streams, potential for in-combination visual impact and potential for increased noise impacts.

Positive cumulative impacts are also possible, for instance, improvement to air quality as a result of renewable energy projects and achievement of national and international renewable energy generation targets.

Please send all responses to: littletonwindfarm@ftco.ie

or respond by post to:

Fehily Timoney & Company
Core House
Pouladuff Road
County Cork
T12 D773

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CONSULTANTS IN ENGINEERING,
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APPENDIX 1

List of Consultees

Local Authorities

Tipperary County Council:

- Environment Department
- Heritage Department
- Planning Department
- Roads Department

Kilkenny County Council Planning Department

Government Departments

Minister for Housing, Planning and Local Government
Minister for Culture, Heritage and the Gaeltacht (DAU)
Minister for Agriculture, Food and the Marine
Minister for Communications, Climate Action and Environment
Minister for Transport, Tourism and Sport
Minister for Defence

Telecommunications

Broadcasting Authority of Ireland (BAI)
Commission for Communications Regulation
Eircom Ltd
Electricity Supply Board
Enet Telecommunications Networks Limited
Imagine Networks Services Ltd
IT Department, Kilkenny County Council
IT Department, Laois County Council
IT Department, Tipperary County Council
Meteor Mobile Communications Limited (Eir)
Nova Networks Ltd
Ripple Communications Ltd
RTE Transmission Network Ltd
RTÉ/Saorview
Telecommunications Section, An Garda Siochána
Three Ireland (Hutchison) Limited
Viatel Ireland Ltd
Virgin Media Ireland Ltd (PP)
Vodafone Ireland Ltd

Other Interested Bodies

An Bord Pleanála
An Chomhairle Ealaíon (Arts Council)
An Garda Siochána - Thurles Branch
An Taisce
Bat Conservation Ireland
Biodiversity Ireland
Birdwatch Ireland
Butterfly Conservation Ireland
Commission for Regulation of Utilities
Eirgrid

Environmental Protection Agency (EPA)
Environmental Sciences Association of Ireland
ESB Networks
Fáilte Ireland
Forestry Service
Gas Networks Ireland
Geographical Society of Ireland
Geological Survey Ireland (GSI)
Health and Safety Authority
Health Service Executive (HSE)
Inland Fisheries Ireland (IFI)
Irish Aviation Authority
Irish Environmental Network
Irish Peatland Conservation Council
Irish Raptor Study Group
Irish Water
Irish Wildlife Trust
Irish Wind Energy Association
Kilkenny Airport
Met Eireann
National Monuments Service
National Parks and Wildlife Service (NPWS)
National Roads Authority
National Transport Authority
Office of Public Works
Office of Public Works (OPW)
Southern Regional Assembly
Sustainable Energy Authority Ireland
Teagasc
The Heritage Council
Transport Infrastructure Ireland (TII)

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CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

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QUALITY ISO 9001:2015 NSAI Certified
ENVIRONMENT ISO 14001:2015 NSAI Certified

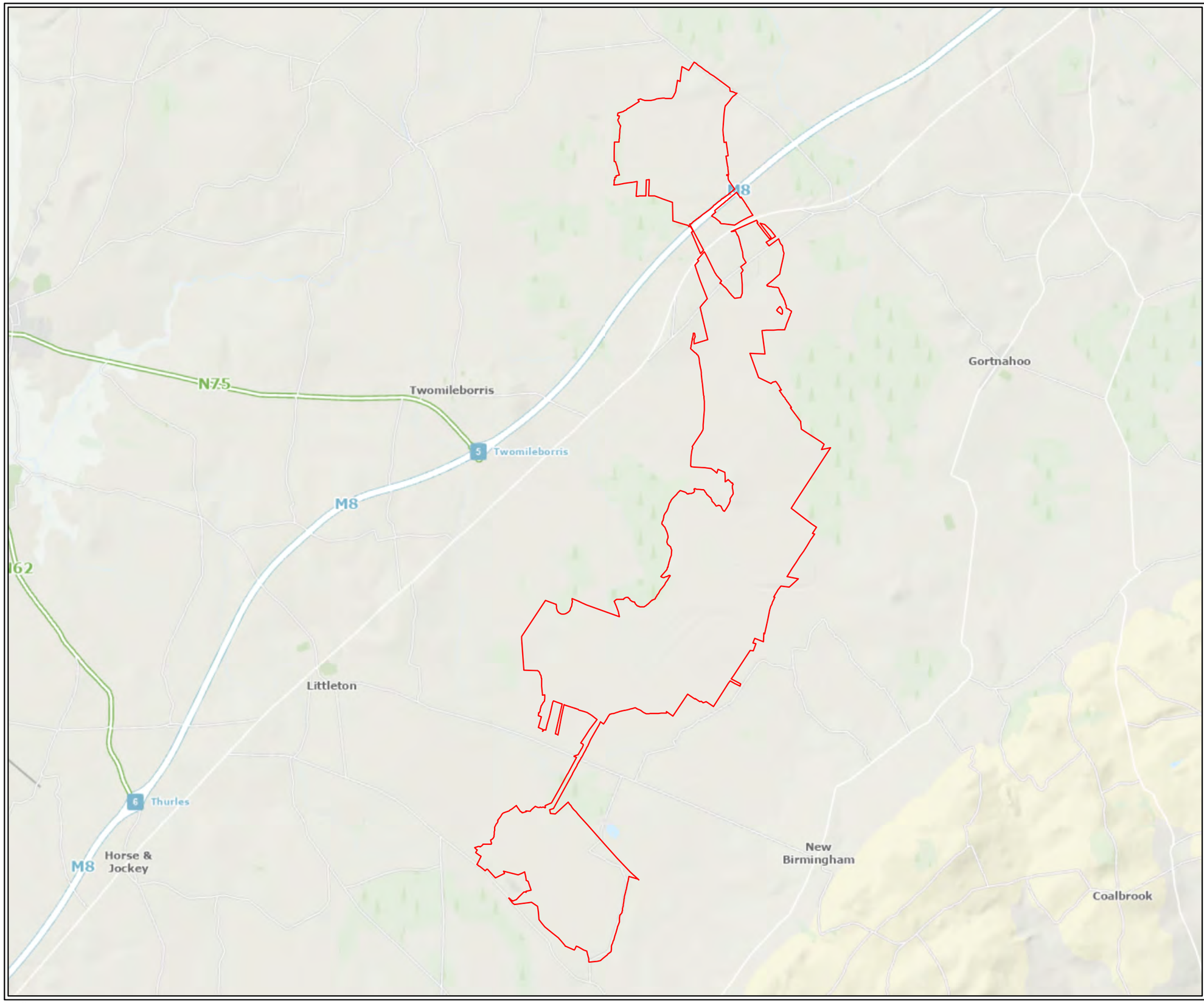
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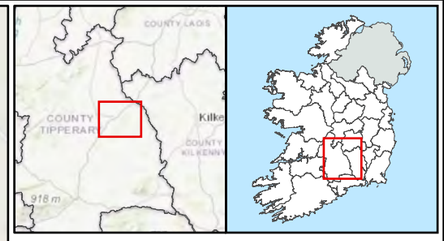
DESIGNING AND DELIVERING
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APPENDIX 3

Proposed Littleton Wind Farm Site Location Map

World Topographic Map: Esri, HERE, Garmin, FAO, USGS
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Legend

Proposed Site Location

TITLE:	Proposed Littleton Wind Farm Site Location Map
PROJECT:	Littleton Wind Farm
FIGURE NO:	INFO
SCALE: 1:50,000	REVISION: 0
DATE: 09/04/2025	PAGE SIZE: A3

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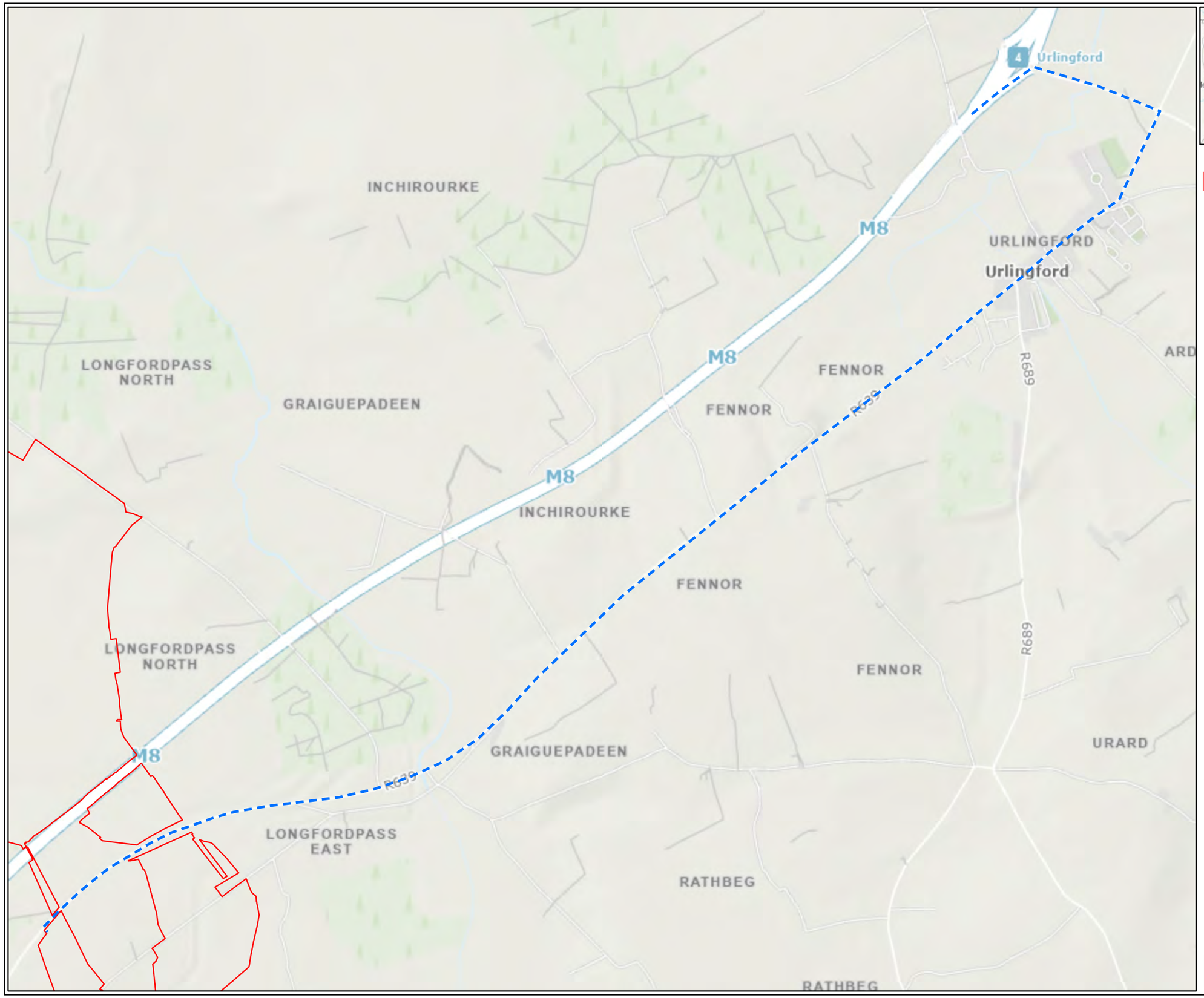
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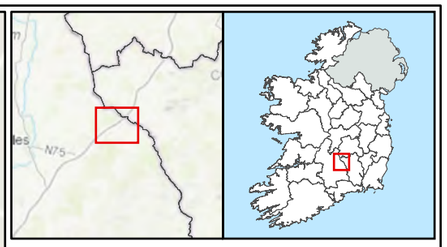
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APPENDIX 4

Proposed Turbine Delivery Route (TDR)

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Legend

- Proposed Site Location
- Proposed Turbine Delivery Route

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TITLE: Proposed Turbine Delivery Route (TDR)			
PROJECT: Littleton Wind Farm			
FIGURE NO:	INFO		
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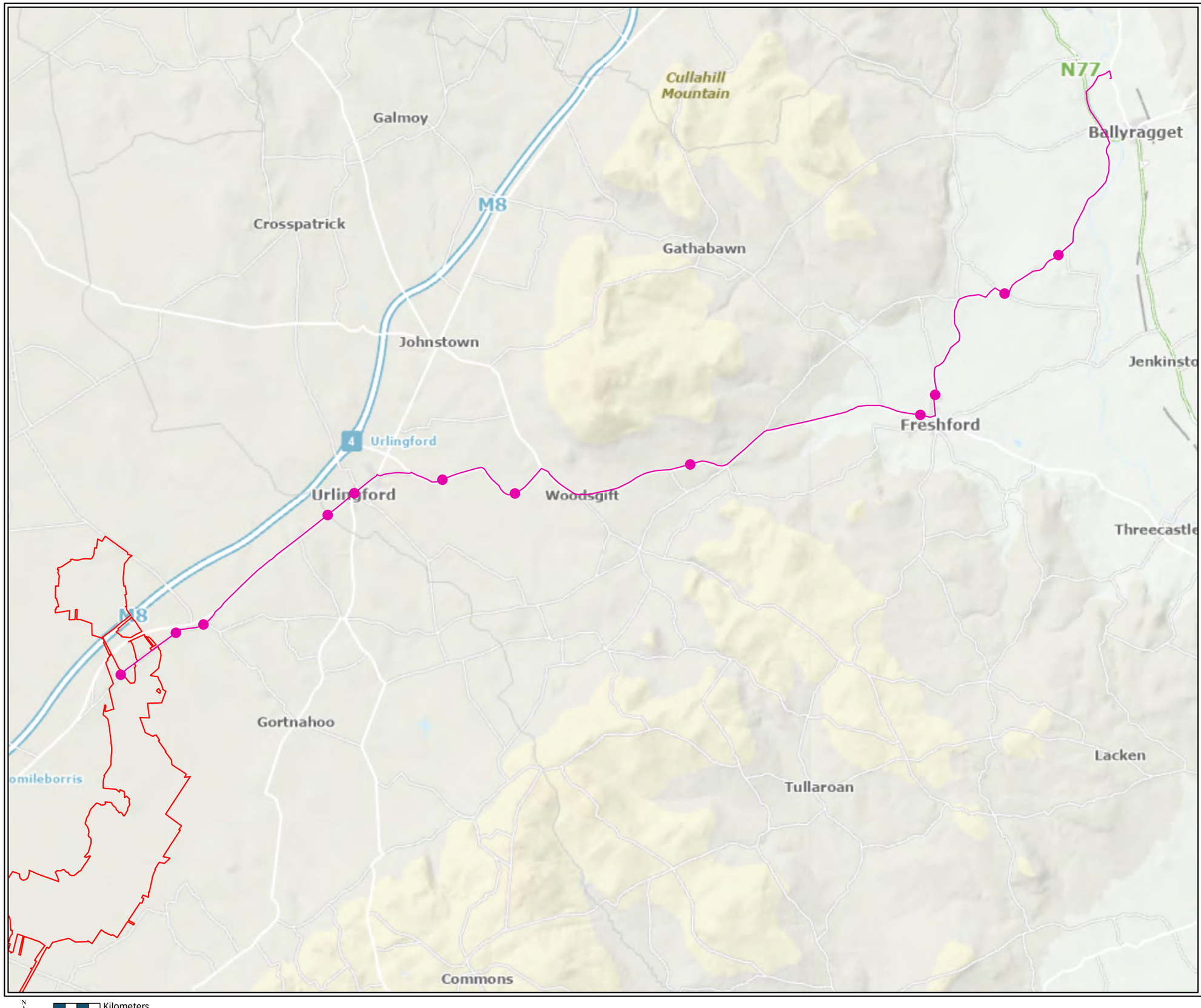
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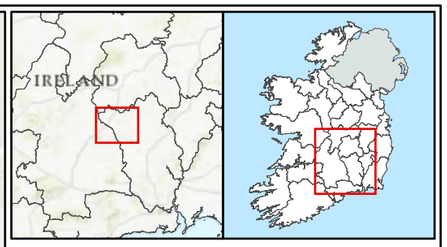
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APPENDIX 5

Proposed Grid Connection Route (GCR)

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Legend

- Proposed Site Location
- Alternative Grid Route
- Alternative Grid Pinch Points

TITLE:	Proposed Grid Connection Route (GCR)
PROJECT:	Littleton Wind Farm
FIGURE NO:	INFO
SCALE: 1:80,000	REVISION: 0
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Scoping Responses 2021

Cathal Creedon

From: Roger Woods <rwoods@bai.ie>
Sent: Friday 17 September 2021 13:32
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Eamon

The BAI does not perform an in-depth analysis of the effect of wind turbines on FM networks. However, we are not aware of any issues from existing windfarms into existing FM networks. Also, the proposed windfarms are not located close to any existing or planned FM transmission sites.

Regards

Roger

Senior Executive Engineer
Broadcasting Authority of Ireland
2-5 Warrington Place
Dublin D02 XP29

Tel: 01 6441200
Fax: 01 6441299

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Tá an ríomhphost seo agus aon iatán a ghabhann leis rúnda agus is leis an duine sin amháin a bhfuil siad seolta chuige/chuici a bhaineann siad. Muna duitse an ríomhphost seo, ní ceart é a léamh ná a scaoileadh chuig aon tríú páirtí. Iarrtar ort teachtaireacht a sheoladh chuig an seoltóir nó chuig info@bai.ie, agus an ríomhphost seo a scrios.

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 09:47
To: Roger Woods <rwoods@bai.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards

Eamon Hutton
Senior Project Planner

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Cathal Creedon

From: info <info@biodiversityireland.ie>
Sent: Friday 17 September 2021 09:18
To: Littleton Wind farm
Subject: Automatic reply: P20-211 - Littleton Wind Farm EIAR and Planning Services

Thank you for emailing the National Biodiversity Data Centre.

Whilst we endeavour to reply as soon as possible, due to the increase in the number of inquiries we are receiving, we would like to let you know that we may not be able to reply to your email as promptly as we would like.

If there are any **urgent issues** you would like to raise, please contact us at 051-306240.

Common Queries

Please read the information below which may assist you in the interim period whilst you are waiting for a reply from a staff member. If you are satisfied that the information below has answered your question, please let us know by sending an additional email stating "*Issue resolved*":

1) How to record sightings of nature: If you are hoping to report/record your observation of a particular species, please go to Ireland's Citizen Science Portal where you will be able to make your submission: http://records.biodiversityireland.ie/. Visit our tutorial webpage for an instruction guide on how to record species: http://biodiversityireland.ie/downloads/tutorials/

2) Need help looking for a species ID? If you are looking for assistance to ID a species and we haven't had a chance to get around to your email, why not visit some online Facebook groups such as: *Insects/Invertebrates of Ireland*; *Flora and Fauna of Ireland*; *Ireland Plant Identification Forum; Wildflowers & Fungi of Ireland & UK*.

Why not purchase some identification guides? Trying looking online, or head over to the Data Centre's shop for some ideas: http://biodiversityireland.ie/shop/

3) All-Ireland Pollinator Plan: If you would like to view our guideline documents and how-to-guides along with videos and other resources relating to the plan, please visit: http://pollinators.ie/.

4) Data Requests & Submissions: If you wish to request data from the National Biodiversity Database, please download a *Dataset Request Form* and return it to us signed and complete. If you wish to submit data to us, please download our *Record Template* document, follow the data submission format, fill in the metadata fields and return it to us with your records. All data is of course much appreciated as we continue to grow this national resource.

5) Would you like to report the occurrence of Japanese Knotweed or seek some advice? Please visit: http://www.biodiversityireland.ie/projects/invasive-species/japanese-knotweed/

6) Having issues with our mobile phone application 'Biodiversity Data Capture'? Please be advised:

- that this app has been designed for REAL-TIME recording IN THE FIELD; this app DOES NOT SUPPORT RETROSPECTIVE RECORDING so please do not use the application when you are not at the location of the record as it will generate an incorrect grid reference.
- users are able to record some of Ireland's MOST COMMON and COMMONLY RECOGNISED SPECIES; this app DOES NOT CONTAIN AN EXHAUSTIVE CHECKLIST of Ireland's biodiversity.
- includes AUTOMATED SPATIAL REFERENCING so you don't have to worry about figuring out your grid reference or lat-long figure [requires location services to be turned on].

Cathal Creedon

From: info <info@biodiversityireland.ie>
Sent: Friday 17 September 2021 09:20
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Eamon,

Thanks for your email.

The National Biodiversity Data Centre do not have the capacity to give advice on developments.

All the best,
Niamh.

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 09:18
To: info <info@biodiversityireland.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Cathal Creedon

From: CorporateSupport.Unit <CorporateSupport.Unit@decc.gov.ie>
Sent: Friday 17 September 2021 16:19
To: Littleton Wind farm
Cc: CorporateSupport.Unit
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services
Attachments: 7. Minister for Environment, Climate & Communications.pdf; P20-211_Scoping Report.pdf

Good afternoon Marie,
Please be advised that the contact email address for the Department of Environment, Climate and Communications where this Department is a statutory consultee for EIA/SEA/EIS/NIS/Planning notices is CorporateSupport.Unit@decc.gov.ie

One of the attachments is 7Mb and one of our contacts has a mailbox limit of 5Mb. Unfortunately I am unable to split the large document at the moment for IT reasons. Is this document available online and if so can you forward a link please?

An alternative is if you are able to send a reduced file size version of P20-211 Scoping Report pdf to CorporateSupport.Unit@decc.gov.ie

Thank you for your assistance.

Regards,
Enda Brady,
Corporate Support Unit,
Department of Environment, Climate and Communications.
087 623 7714

From: Customer Service
Sent: 17 September 2021 14:33
To: CorporateSupport.Unit
Cc: Customer Service
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi All

Please see below scoping report, for your attention

Kind regards,
Shannen

From: Littleton Wind farm [mailto:littletonwindfarm@ftco.ie]
Sent: 17 September 2021 07:34
To: Customer Service
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

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If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards,
Marie Geary
for Eamon Hutton
Senior Project Engineer

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Tá eolas sa teachtaireacht leictreonach seo (agus b'fhéidir sa chomhaid ceangailte leis) a d'fhéadfadh bheith príobháideach nó faoi rún. Is le h-aghaidh an duine/na ndaoine nó le h-aghaidh an aonáin atá ainmnithe thuas agus le haghaidh an duine/na ndaoine sin amháin atá an t-eolas. Murab ionann tusa agus an té a bhfuil an teachtaireacht ceaptha dó bíodh a fhios agat nach gceadaítear nochtadh, cóipeáil, scaipeadh nó úsáid an eolais agus/nó an chomhaid seo. Más trí earráid a fuair tú an teachtaireacht leictreonach seo cuir, más é do thoil é, an té ar sheol an teachtaireacht ar an eolas láithreach. Deimhnítear leis seo freisin nár aims odh víreas sa phost seo tar éis a scanadh.

Cathal Creedon

From: Customer Service <Customer.Service@decc.gov.ie>
Sent: Friday 17 September 2021 07:34
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Thank you for contacting the Department of the Environment, Climate and Communications.

Please note; For information regarding Digital Covid Certificates, please visit - gov.ie - EU Digital COVID Certificate (www.gov.ie)

For queries relating **to Digital Covid Certificates**, please contact the **Helpline** on 1800 807 008 or the **Department of Health** – press_office@health.gov.ie

For Covid-19 **travel related queries**, please contact the **Department of Foreign Affairs** - (01) 613 1700

Otherwise, our Customer Service team will review your query and forward it to the relevant Division who can provide you with a comprehensive answer.

You should receive this response within 20 working days as stated in our Customer Service Charter. If you do not receive a response within this time, or if you have any further queries, please do not hesitate to contact us.

Due to measures taken recently in relation to the COVID-19 virus, it may take longer than usual for us to answer your query. We thank you for your patience.

Go raibh maith agat as teagmháil a dhéanamh leis an Roinn Comhshaoil, Aeráide agus Cumarsáide.

Athbhreithneoidh an fhoireann Seirbhíse do Chustaiméirí d'fhiosrú agus cuirfidh siad ar aghaidh chuig an Rannán ábhartha é a bheidh in ann freagra cuimsitheach a sholáthar duit.

Tabhair faoi deara le do thoil; Chun faisnéis a fháil maidir le Teastais Digiteacha COVID, téigh chuig gov.ie - gov.ie - Teastas Digiteach COVID (www.gov.ie)

Le haghaidh ceisteanna a bhaineann leis na Teastais Digiteacha COVID, téigh i dteagmháil leis an Líne Chabhrach ar 1800 807 008 nó an Roinn Sláinte - press_office@health.gov.ie

Maidir le ceisteanna a bhaineann le taisteal agus COVID-19, déan teagmháil leis an Roinn Gnóthaí Eachtracha le do thoil - - (01) 613 1700

Ba chóir go bhfaighfeá an freagra seo laistigh de 20 lá oibre mar a luaitear inár gCairt um Sheirbhís do Chustaiméirí. Muna bhfaigheann tú freagra laistigh den tréimhse seo, nó má tá tuilleadh fiosruithe agat, ná bíodh drogall ort teagmháil a dhéanamh linn.

De bharr na mbeart a glacadh le gairid maidir leis an víreas COVID-19, d'fhéadfadh sé tarlú go nglacann sé níos mó ama orainn ná mar is gnáth d'fhiosrú a fhreagairt. Gabhaimid buíochas leat as do chuid foighne.

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Cathal Creedon

From: Manager DAU <Manager.DAU@housing.gov.ie>
Sent: Tuesday 2 November 2021 15:48
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services
Attachments: G Pre00244-2021 - P20-211 Wind Farm.pdf

A Chara,

Please find attached Nature Conservation recommendations for the above mentioned pre-planning application.

Regards
Diarmuid

Diarmuid Buttimer
Executive Officer

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage
Aonad na nIarratas ar Fhorbairt
Development Applications Unit
Oifigí an Rialtais
Government Offices
Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman, Y35 AP90
Newtown Road, Wexford, County Wexford, Y35 AP90

—

Diarmuid.Buttimer@housing.gov.ie
Manager.DAU@housing.gov.ie

From: Manager DAU
Sent: Friday 17 September 2021 14:31
To: 'littletonwindfarm@ftco.ie' <littletonwindfarm@ftco.ie>
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Our Ref: G Pre002442021 (Please quote in all related correspondence)

A Chara

I acknowledge receipt of your recent consultation.

In the event of observations, you will receive a co-ordinated heritage-related response by email from Development Applications Unit (DAU).

The normal target turnaround for pre-planning and other general consultations is six weeks from date of receipt. In relation to general consultations from public bodies under the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 to 2011, the Department endeavours to meet deadline dates, where requested.

If you have not heard from DAU and wish to receive an update, please email **manager.dau@housing.gov.ie**.

Regards
Diarmuid

Diarmuid Buttimer
Executive Officer

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage
Aonad na nIarratas ar Fhorbairt
Development Applications Unit
Oifigí an Rialtais
Government Offices
Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman, Y35 AP90
Newtown Road, Wexford, County Wexford, Y35 AP90

Diarmuid.Buttimer@housing.gov.ie
Manager.DAU@housing.gov.ie

From: Ministers Office TCAGSM [mailto:Ministers.Office@tcagsm.gov.ie]
Sent: Friday 17 September 2021 08:37
To: Manager DAU <Manager.DAU@housing.gov.ie>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Daniel Hutton
Minister's Office

An Roinn Turasóireachta, Cultúir, Ealaíon, Gaeltachta, Spóirt agus Meán
Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media
23 Sráid Chill Dara, Baile Átha Cliath, 2, D02 TD30
23 Kildare Street, Dublin 2, D02 TD30

Mobile +353 (0)85 877 6241 - T +353 (0)1 631 3849
www.gov.ie

From: Littleton Wind farm [mailto:littletonwindfarm@ftco.ie]
Sent: Friday 17 September 2021 07:33
To: Ministers Office TCAGSM <Ministers.Office@tcagsm.gov.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards,
Marie Geary
for Eamon Hutton
Senior Project Engineer

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Tá an t-eolas sa ríomhphost seo faoi rún, chomh maith le gach comhad atá ceangailte leis, agus i gcomhair úsáid an duine nó an chórais a bhfuil sé dírithe air amháin. Má fhaigheann tú an ríomhphost seo trí bhotún, cuir scéal chugainn ag webmaster@chg.gov.ie. Tá an ríomhphost seo arna sheiceáil ag scanóir víreas agus dealramh air go bhfuil sé glan.

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Is faoi rún agus chun úsáide an té nó an aonán atá luaite leis, a sheoltar an ríomhphost seo agus aon comhad atá nasctha leis. Má bhfuair tú an ríomhphost seo trí earráid, déan teagmháil le bhainisteoir an chórais.

Deimhnítear leis an bhfo-nóta seo freisin go bhfuil an teachtaireacht ríomhphoist seo scuabtha le bogearraí frithvíorais chun víorais ríomhaire a aimsiú.

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Cathal Creedon

From: GCU - Reform Communications and Emergency Planning Divisional Mailbox <GeneralCo-OrdinationUnit@transport.gov.ie>
Sent: Tuesday 19 October 2021 15:24
To: Littleton Wind farm
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services
Attachments: 20211013 Dot response Littleton Wind Farm.docx

Hi Eamon,

Please find attached response from the Department of Transport to the Proposed Littleton Wind Farm Environmental Impact Assessment Report.

Thanks and regards,

Geraldine

Geraldine Maher
(she/her) (what's this?)

Reform, Communications Emergency Planning Division

An Roinn Iompair
Department of Transport

Lána Líosain, Baile Átha Cliath, D02 TR60
Leeson Lane, Dublin, D02 TR60

geraldinemaher@transport.gov.ie www.transport.gov.ie

Working remotely at present, contactable by email



****
Tá eolas sa teachtaireacht leictreonach seo a d'fhéadfadh bheith príobháideach nó faoi rún agus b'fhéidir go mbeadh ábhar rúnda nó pribhléideach ann. Is le h-aghaidh an duine/na ndaoine nó le h-aghaidh an aonáin atá ainmnithe thuas agus le haghaidh an duine/na ndaoine sin amháin atá an t-eolas. Tá cosc ar rochtain don teachtaireacht leictreonach seo do aon duine eile. Murab ionann tusa agus an té a bhfuil an teachtaireacht ceaptha dó bíodh a fhios agat nach gceadaítear nochtadh, cóipeáil, scaipeadh nó úsáid an eolais agus/nó an chomhaid seo agus b'fhéidir d'fhéadfadh bheith mídhleathach.

Tá ár Ráiteas Príobháideachta le fáil ar www.transport.gov.ie

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****

Cathal Creedon

From: Info@Eirgrid.com
Sent: Monday 20 September 2021 14:59
To: Littleton Wind farm
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

Follow Up Flag: Follow up
Flag Status: Completed

Good afternoon Eamon,

We hereby acknowledge receipt of your below mail and have no comments to make.

With kind regards.

ustomers & Connections

EIRGRID

www.eirgrid.com

From: Littleton Wind farm [mailto:littletonwindfarm@ftco.ie]
Sent: 17 September 2021 09:22
To: Info - EirGrid
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

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Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
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EirGrid plc - Transmission System Operator, Ireland.
The Oval, 160 Shelbourne Road, Ballsbridge, Dublin 4, D04 FW28.

Oibritheoir Eangach Leictreachais na hÉireann.
160 Bóthar Shíol Bhroin, Droichead na Dothra, Baile Átha Cliath 4, D04 FW28.

Registered Office
The Oval, 160 Shelbourne Road, Ballsbridge, Dublin 4, D04 FW28.
Registered in Ireland No. 338522 V.A.T. No. IE 6358522H
TELEPHONE + 353 (0)1 677 1700
EMAIL info@eirgrid.com
FAX + 353 (0)1 661 5375
WEB www.eirgrid.com

Directors:
Brendan Tuohy CHAIR, Mark Foley CHIEF EXECUTIVE
Dr Theresa Donaldson, Shane Brennan, Tom Coughlan, Lynne Crowther, Michael Hand, Eileen Maher, Liam O'Halloran, John Trethowan, Martin Corrigan (Company Secretary)
****
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Séanadh:

Tá faisnéis (agus/nó ceangaltáin) a d'fhéadfadh a bheith faoi phribhléid nó faoi rún sa teachtaireacht leictreonach seo. Tá an t-ábhar uile beartaithe a bheith d'úsáid an duine aonair nó an aonáin chuig a ndírítear é amháin. Sa chás nach tú an faighteoir beartaithe, bíodh fios agat go bhfuil cosc ar aon nochtadh, cóipeáil, dáileadh nó úsáid d'ábhair na teachtaireachta seo. Is iad tuairimí nó barúlacha an údair amháin na tuairimí nó na barúlacha a léirítear sa teachtaireacht seo, agus b'fhéidir nach ionann iad agus tuairimí nó barúlacha EirGrid. Má shíleann tú go bhfuair tú an ríomhphost seo trí earráid, cuir é seo in iúl don seoltóir láithreach le do thoil. Cé go scanann EirGrid ríomhphoist agus ceangaltáin, ní thugann siad ráthaíocht go mbíonn ceachtar acu saor ó víreas ná ní ghlacann siad aon

dliteanas as aon damáiste a dhéantar de thoradh víreas.
****

Cathal Creedon

From: Peter O`Brien <peter.obrien@enet.ie>
Sent: Friday 17 September 2021 09:59
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Follow Up Flag: Follow up
Flag Status: Flagged

Hi,

Can you send the proposed area in a Google Earth kml file so that I can review against our network?

Regards,
Peter

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday, September 17, 2021 9:52 AM
To: Peter O`Brien <peter.obrien@enet.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

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Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Cathal Creedon

From: Peter O`Brien <peter.obrien@enet.ie>
Sent: Wednesday 8 November 2023 09:13
To: Sinead Lynch
Cc: Trevor Byrne; Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm - Telecommunications Impact Assessment

Hi Sinead,

Thank you for sending the revised turbine locations,
None of our current links will now be affected,

Best Regards,
Peter

Peter O`Brien | Licensed Link planner
A: Enet House, National Technology Park, Castletroy, Co Limerick, V946P52
M: +353867744313 | **W:** www.enet.ie



Registered in Ireland, Registration No. 332982
Registered Offices: Enet House, National Technology Park, Castletroy, Co Limerick, V94 6P52
enet is a registered business name of e-nasc éireann teoranta



From: Sinead Lynch <sinead.lynch@ftco.ie>
Sent: Tuesday, November 7, 2023 11:47 AM
To: Peter O`Brien <peter.obrien@enet.ie>
Cc: Trevor Byrne <trevor.byrne@ftco.ie>; Littleton Wind farm <littletonwindfarm@ftco.ie>
Subject: FW: P20-211 - Littleton Wind Farm - Telecommunications Impact Assessment

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Hi Peter,

My colleague previously contacted you in 2021 regarding a proposed wind farm development at Littleton Bog, County Tipperary. See email thread below for previous correspondence.
Since that initial email, the wind turbine layout design has changed. Details of the proposed project layout are outlined below.

The proposed wind farm project consists of 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m. 1 no. permanent meteorological mast to a height of 100 m above ground level.
The turbine and met mast location coordinates (ITM) are shown in the table below and I have attached a KMZ file of these locations which can be viewed in google earth.

Turbine ID	ITM Coordinates (X)	ITM Coordinates (Y)
T1	624121	657241
T2	623554	656586
T8	623067	654422
T7	622484	655013
T3	624059	655927
T4	622863	655965
T5	623227	655459
T10	621249	651425
T6	623561	654979
T9	620913	651814
T11	621584	651035
Met Mast	621775	654525

Please consider the location of the updated layout with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me.

Kind regards,
Sinéad

FEHILY TIMONEY

Sinéad Lynch
Project Engineer

Fehily Timoney and Company
Unit 3/4, Northwood House, Northwood Crescent, Dublin, D09 X899
t: +353 1 658 3500
www.fehilytimoney.ie

From: Peter O`Brien <peter.obrien@enet.ie>
Sent: Friday, April 16, 2021 10:36 AM
To: Eamon Hutton <eamon.hutton@ftco.ie>
Subject: RE: P20-211 - Littleton Wind Farm - Telecommunications Impact Assessment

Hi Eamon,

We have one link possibly affected, see below:

A-End Coordinates	A-End Antenna Height	B-End Coordinates	B-End Antenna Height	Link Frequency
52°38'40.91"N 7°31'47.47"W	10m	52°44'55.95"N 7°57'36.25"W	5m	11GHz

Regards,
Peter

From: Eamon Hutton <eamon.hutton@ftco.ie>
Sent: Friday, April 16, 2021 10:19 AM
To: Peter O`Brien <peter.obrien@enet.ie>
Subject: P20-211 - Littleton Wind Farm - Telecommunications Impact Assessment

Good afternoon,

I am contacting you to advise that Bord Na Mona intend to apply for planning consent for a wind farm development at Littleton Bog, County Tipperary, consisting of up to 20 no. wind turbines. The Commission for Communications Regulation have recommended that we contact you in relation to potential interferences to telecommunications services as a result of the proposed wind farm.

I have attached the coordinates (ITM) of the proposed turbines below and a KMZ file which can be viewed in google earth. If you should require any further information, please do not hesitate to contact me. I can also provide coordinates in an alternative format if required.

Please consider the location of this project with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me by email or telephone.

Turbine	ITM Coordinates				
ID	X	Y		Latitude	Longitude
T1	623208	658449		52.676707	-7.656805
T2	623440	657911		52.671865	-7.653418
T3	623832	657547		52.668574	-7.647651
T4	624193	657103		52.664573	-7.642348
T5	623113	657303		52.666411	-7.658288
T6	623509	656887		52.662657	-7.652475
T7	623787	656416		52.658412	-7.648393
T8	622708	656272		52.657161	-7.664355
T9	623234	655938		52.654143	-7.656606
T10	623945	655876		52.653556	-7.646096
T11	622739	655430		52.649592	-7.663956
T12	623529	655333		52.648693	-7.652281
T13	623306	654704		52.64305	-7.655626
T14	622512	654790		52.643855	-7.667351
T15	621824	654615		52.642308	-7.67752
T16	622941	654089		52.637536	-7.661052
T17	621611	653893		52.63583	-7.680716
T18	621454	650819		52.608202	-7.683246
T19	621385	651505		52.614369	-7.684208
T20	620692	651652		52.615724	-7.694438

Kind regards,
Eamon Hutton

Eamon Hutton
Project Planner

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 4133
www.fehilytimoney.ie

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Cathal Creedon

From: Wexford Receptionist <REC_WEX@epa.ie>
Sent: Friday 17 September 2021 09:18
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

A Chara,
Your correspondence on 17th Sept has been forwarded for attention

Kind Regards,

Ed Kehoe

Duty Receptionist / Programme Officer I Organisational Services Team
Office of Communications and Corporate Services, Wexford
Fáilteoir ar Dualgas / Oifigeach Cláir I Foireann Seirbhísí Eagraíochtúla
An Oifig Cumarsáide agus Seirbhísí Corparáideacha,Loch Garman

Environmental Protection Agency

053-9160600 (Direct dial)
info@epa.ie
www.epa.ie

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 09:03
To: Wexford Receptionist <REC_WEX@epa.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards,
Marie Geary
for Eamon Hutton
Senior Project Planner

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Cathal Creedon

From: EIAPlanning <eiaplanning@epa.ie>
Sent: Friday 24 September 2021 15:21
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services
Attachments: S_04 Form -Request for a Scoping Opinion IE_IPC_Waste.docx

Dear Ms Geary,

We acknowledge receipt of your email, letter and EIAR Scoping Report for the proposed Littleton Wind Farm, located in East County Tipperary.
If you are requesting a Scoping Opinion (on the scope and level of detail to be included in an EIAR) under the provisions of the EPA Act 1992 as amended or the Waste Licensing Regulations 2004 as amended,
please complete the attached Scoping request form and send it to eiaplanning@epa.ie with any relevant information attached.

Kind regards,

Environmental Licensing Programme

Environmental Licencing Programme
Office of Environmental Sustainability
An Clár um Cheadúnú Comhshaoil
Oifig um Inbhuanaitheacht Chomhshaoil

Environmental Protection Agency

053-916 0600 (Switch)
eiaplanning@epa.ie
www.epa.ie

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 09:03
To: Wexford Receptionist <REC_WEX@epa.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Sir/Madam,

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Kind Regards,
Marie Geary
for Eamon Hutton
Senior Project Planner

Marie Geary
Staff Secretary

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Cathal Creedon

From: esbnetworks@esb.ie
Sent: Friday 17 September 2021 09:26
To: Littleton Wind farm
Subject: Re: P20-211 - Littleton Wind Farm EIAR and Planning Services [#349237]

Bhain do rphost ESB Networks amach. Tá muid faoi an-chuid brú faoi láthair. Seans go dtógfaidh sé níos faide orainn teacht ar ais chugat ná mar is gnách, ach tá muid ag déanamh ár ndíchill na ceisteanna go léir a fhreagairt a luaithe is féidir.

Chun éigeandáil a thuairisc nó eolas a thabhairt faoi idirbhrisí soláthair glaoigh le do thoil ar 1800 372 999 nó +35321 238 2410 láithreach.
Go Raibh Maith Agat.

Your email has reached ESB Networks. We are currently experiencing a high volume. Our response times may take longer than expected, but we are working to answer all queries as soon as possible

To report a dangerous situation or for information on supply interruptions please call 1800 372 999 or +353 21 238 2410 immediately.
Thank You.

ESB Networks Customer Care | T: 1800372757 | +353 21 2386555 | F: +353 21 4844261 | www.esbnetworks.ie

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Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

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Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
Staff Secretary

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Please consider the Environment before printing this email.

* ** *** ** * ** *** ** * ** *** ** *
Tá an t-eolas sa ríomhphost seo agus in aon chomhad a ghabhann leis rúnda agus ceaptha le haghaidh úsáide an té nó an aonáin ar seoladh chuige iad agus na húsáide sin amháin.
Is tuairimí nó dearcthaí an údair amháin aon tuairimí nó dearcthaí ann, agus ní gá gurb ionann iad agus tuairimí nó dearcthaí ESB.
Má bhfuair tú an ríomhphost seo trí earráid, ar mhiste leat é sin a chur in iúl don seoltóir.
Scanann ESB ríomhphoist agus ceangaltáin le haghaidh víreas, ach ní ráthaíonn sé go bhfuil ceachtar díobh saor ó víreas agus ní glacann dliteanas ar bith as aon damáiste de dhroim víreas.
https://esbnetworks.ie/contact-us

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* ** *** ** * ** *** ** * ** *** ** *

Cathal Creedon

From: planning applications <planning.applications@failteireland.ie>
Sent: Tuesday 12 October 2021 10:35
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services
Attachments: Fáilte Ireland EIAR Guidelines.pdf

Hello Eamon,

Thank you for contacting Fáilte Ireland regarding the proposed renewable energy development referred to as the Littleton Wind Farm.
Please see attached a copy of Fáilte Ireland's Guidelines for the Treatment of Tourism in an EIA, which you may find informative for the preparation of the Environmental Impact Assessment for the proposed project. The purpose of this report is to provide guidance for those conducting Environmental Impact Assessment and compiling an Environmental Impact Assessment Reports (EIAR), or those assessing EIARs, where the project involves tourism or may have an impact upon tourism. These guidelines are non-statutory and act as supplementary advice to the EPA EIAR Guidelines outlined in section 2.

Regards & thanks,

Yvonne

Yvonne Jackson
Product Development-Environment & Planning Support | Fáilte Ireland

88-95 Amiens Street, Dublin 1, D01 WR86
Currently working Remotely | **M** +353 (0)86 0357590

LinkedIn | Twitter | YouTube | Facebook

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 09:10
To: planning applications <planning.applications@failteireland.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

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Dear Sir/Madam,

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If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
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Cathal Creedon

From: renewablegas <renewablegas@gasnetworks.ie>
Sent: Friday 17 September 2021 16:55
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Eamon,

Thank you for your email below. I will escalate your request internally in GNI and will revert if there is an issues raised. If you have any further questions please don't hesitate to contact me on the number below.

Kind regards,

Yvonne

Yvonne

Gas Networks Ireland
NSC, Finglas, Dublin 11

M: 086 1748 911
E: yvonne.connolly@gasnetworks.ie

Progress is natural, which is why we're moving Ireland towards a cleaner energy future.

gasnetworks.ie | Find us on Twitter



From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday, September 17, 2021 8:25:52 AM
To: networksinfo@gasnetworks.ie <networksinfo@gasnetworks.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services
Attachments: P20-211_Scoping Report.pdf 32. Gas Networks Ireland.pdf image001.jpg 094200c9-4c7b-441a-9b6b-a959c888d0f5.png image002.png image003.png

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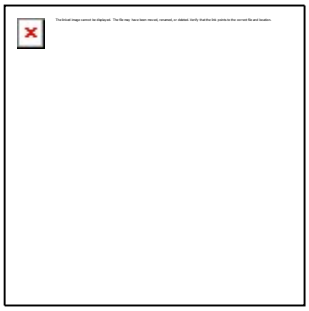
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Kind Regards
Eamon Hutton
Senior Project Planner



Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560

www.fehilytimoney.ie



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---

Tá an fhaisnéis á seachadadh dírithe ar an duine nó ar an eintiteas chuig a bhfuil sí seolta amháin agus féadfar ábhar faoi rún, faoi phribhléid nó ábhar atá íogair ó thaobh tráchtála de a bheith mar chuid de. Tá aon athsheachadadh nó scaipeadh den fhaisnéis, aon athbhreithniú ar nó aon úsáid eile a bhaint as, nó aon ghníomh a dhéantar ag brath ar an bhfaisnéis seo ag daoine nó ag eintitis nach dóibh siúd an fhaisnéis seo, toirimiscthe agus féadfar é a bheith neamhdhleathach. Níl Líonraí Gáis Éireann faoi dhliteanas maidir le seachadadh iomlán agus ceart na faisnéise sa chumarsáid seo nó maidir le haon mhoill a bhaineann léi. Ní ghlacann Líonraí Gáis Éireann le haon dliteanas faoi ghnímh nó faoi iarmhairtí bunaithe ar úsáid thoirmiscthe na faisnéise seo. Níl Líonraí Gáis Éireann faoi dhliteanas maidir le seachadadh ceart agus iomlán na faisnéise sa chumarsáid seo nó maidir le haon mhoill a bhaineann léi. Má fuair tú an teachtaireacht seo in earráid, más é do thoil é, déan teagmháil leis an seoltóir agus scrios an t-ábhar ó gach aon ríomhaire.
Féadfar ríomhphost a bheith soghabhálach i leith truaillithe, idircheaptha agus i leith leasaithe neamhúdaraithe. Ní ghlacann Líonraí Gáis Éireann le haon fhreagracht as athruithe nó as idircheapadh a rinneadh ar an ríomhphost seo i ndiaidh é a sheoladh nó as aon dochar do chórais na bhfaighteoirí déanta ag an teachtaireacht seo nó ag a ceangaltáin. Más é do thoil é, tabhair faoi deara chomh maith go bhféadfar monatóireacht a dhéanamh ar theachtaireachtaí chuig nó ó Líonraí Gáis Éireann chun comhlíonadh le polasaithe agus le caighdeáin Líonraí Gáis Éireann a chinntiú agus chun ár ngnó a chosaint. Líonraí Gáis Éireann cuideachta ghníomhaíochta ainmnithe, faoi theorainn scaireanna, atá corpraithe in Éirinn leis an uimhir chláraithe 555744 agus a tá hoifig chláraithe ag Bóthar na nOibreacha Gáis, Corcaigh, T12 RX96.

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Thank you for your attention.

Cathal Creedon

From: Networksinfo <Networksinfo@gasnetworks.ie>
Sent: Friday 17 September 2021 09:26
To: Littleton Wind farm
Subject: Thank you for contacting Gas Networks Ireland
Attachments: image002.jpg

Gas Networks Ireland

Thank you for contacting Gas Networks Ireland.

Our Customer Care Opening Hours are Mon-Fri 8am-8pm and Sat 9am-5.30pm.

If you smell gas, contact our 24 hour emergency service 1850 20 50 50 immediately.

See our website gasnetworks.ie for more information.

Find us on Twitter & Facebook

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Thank you for your attention.

Cathal Creedon

From: GSI Planning <GSIPlanning@GSI.ie>
Sent: Tuesday 2 November 2021 13:48
To: Littleton Wind farm
Cc: Clare Glanville; GSI Planning
Subject: 21_339 [P20-211] Proposed_Littleton_Wind_Farm_EIAR_Scoping_&_Consultation_Request
Attachments: GSI datasets relevant to EIA & SEA_20210421.pdf; 21_339 Proposed Littleton Windfarm EIAR Scoping and Consultation Request.pdf

Dear Eamon,

With reference to your email received on the 17th September, concerning the consultation request for the proposed Littleton Windfarm, please find attached response and dataset sheet from Geological Survey Ireland.

If you have any further queries or if we can be of further assistance, please do not hesitate to contact me Trish Smullen, or my colleague Clare Glanville at GSIPlanning@gsi.ie.

Yours sincerely,

Trish Smullen
Geological Survey Ireland

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 09:28
To: Clare Glanville <Clare.Glanville@decc.gov.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards
Eamon Hutton
Senior Project Planner

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Tá eolas sa teachtaireacht leictreonach seo (agus b'fhéidir sa chomhaid ceangailte leis) a d'fhéadfadh bheith príobháideach nó faoi rún. Is le h-aghaidh an duine/na ndaoine nó le h-aghaidh an aonáin atá ainmnithe thuas agus le haghaidh an duine/na ndaoine sin amháin atá an t-eolas. Murab ionann tusa agus an té a bhfuil an teachtaireacht ceaptha dó bíodh a fhios agat nach gceadaítear nochtadh, cóipeáil, scaipeadh nó úsáid an eolais agus/nó an chomhaid seo. Más trí earráid a fuair tú an teachtaireacht leictreonach seo cuir, más é do thoil é, an té ar sheol an teachtaireacht ar an eolas láithreach. Deimhnítear leis seo freisin nár aims odh víreas sa phost seo tar éis a scanadh.

Cathal Creedon

From: Manager DAU <Manager.DAU@housing.gov.ie>
Sent: Friday 17 September 2021 14:31
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Our Ref: G Pre002442021 (Please quote in all related correspondence)

A Chara

I acknowledge receipt of your recent consultation.

In the event of observations, you will receive a co-ordinated heritage-related response by email from Development Applications Unit (DAU).

The normal target turnaround for pre-planning and other general consultations is six weeks from date of receipt. In relation to general consultations from public bodies under the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 to 2011, the Department endeavours to meet deadline dates, where requested.

If you have not heard from DAU and wish to receive an update, please email **manager.dau@housing.gov.ie.**

Regards
Diarmuid

Diarmuid Buttimer
Executive Officer

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage
Aonad na nIarratas ar Fhorbairt
Development Applications Unit
Oifigí an Rialtais
Government Offices
Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman, Y35 AP90
Newtown Road, Wexford, County Wexford, Y35 AP90

Diarmuid.Buttimer@housing.gov.ie
Manager.DAU@housing.gov.ie

From: Ministers Office TCAGSM [mailto:Ministers.Office@tcagsm.gov.ie]
Sent: Friday 17 September 2021 08:37
To: Manager DAU <Manager.DAU@housing.gov.ie>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Daniel Hutton
Minister's Office

An Roinn Turasóireachta, Cultúir, Ealaíon, Gaeltachta, Spóirt agus Meán
Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media

23 Sráid Chill Dara, Baile Átha Cliath, 2, D02 TD30
23 Kildare Street, Dublin 2, D02 TD30
Mobile +353 (0)85 877 6241 - T +353 (0)1 631 3849
www.gov.ie

From: Littleton Wind farm [mailto:littletonwindfarm@ftco.ie]
Sent: Friday 17 September 2021 07:33
To: Ministers Office TCAGSM <Ministers.Office@tcagsm.gov.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards,
Marie Geary
for Eamon Hutton
Senior Project Engineer

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Tá an t-eolas sa ríomhphost seo faoi rún, chomh maith le gach comhad atá ceangailte leis, agus i gcomhair úsáid an duine nó an chórais a bhfuil sé dírithe air amháin. Má fhaigheann tú an ríomhphost seo trí bhotún, cuir scéal chugainn ag webmaster@chg.gov.ie. Tá an ríomhphost seo arna sheiceáil ag scanóir víreas agus dealramh air go bhfuil sé glan.

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Is faoi rún agus chun úsáide an té nó an aonán atá luaite leis, a sheoltar an ríomhphost seo agus aon comhad atá nasctha leis. Má bhfuair tú an ríomhphost seo trí earráid, déan teagmháil le bhainisteoir an chórais.

Deimhnítear leis an bhfo-nóta seo freisin go bhfuil an teachtaireacht ríomhphoist seo scuabtha le bogearraí frithvíorais chun víorais ríomhaire a aimsiú.

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Cathal Creedon

From: IAA INFORMATION <iaainfo@IAA.ie>
Sent: Friday 17 September 2021 09:12
To: Littleton Wind farm
Subject: Automatic reply: P20-211 - Littleton Wind Farm EIAR and Planning Services

Follow Up Flag: Follow up
Flag Status: Flagged

Thank you for contacting the Irish Aviation Authority. Your email will be responded to within ten working days.

If your query is in relation to a licence please email licensing@iaa.ie

Kind regards,
Irish Aviation Authority

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Cathal Creedon

From: O'LEARY Geraldine <Geraldine.O'LEARY@IAA.ie>
Sent: Thursday 30 September 2021 13:36
To: Littleton Wind farm
Subject: FAO: EAMONN HUTTON - REF: P21-211/LETT/EH/MG

Follow Up Flag: Follow up
Flag Status: Flagged

Reference: P21-211/Lett/EH/MG

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping and Consultation Request.

Dear Mr. Hutton,

Thank you for your letter/scoping report and request for comments in relation to the proposed windfarm to be located approximately 3km east of the village of Littleton and 10km east of Thurles, Co. Tipperary.

As the number of proposed turbines, the blade tip height and elevations of each turbine and the layout is not provided, Safety Regulation Division - Aerodromes cannot make any specific comments at this time.

The development appears to be approximately 22kms West of Kilkenny Airport, as such, it is likely that the following general observations would be proffered during a formal planning process: In the event of planning consent being granted, the applicant should be conditioned to contact the Irish Aviation Authority to: (1) agree an aeronautical obstacle warning light scheme for the wind farm development, (2) provide as-constructed coordinates in WGS84 format together with ground and blade tip height elevations at each wind turbine location and (3) notify the Authority of intention to commence crane operations with at least 30 days prior notification of their erection.

Yours sincerely,

Deirdre Forrest
Corporate Affairs

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Cathal Creedon

From: Paul Brunel <Paul.Brunel@imaginegroup.ie>
Sent: Monday 27 September 2021 13:19
To: Littleton Wind farm
Cc: Ronnie O'Neill
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

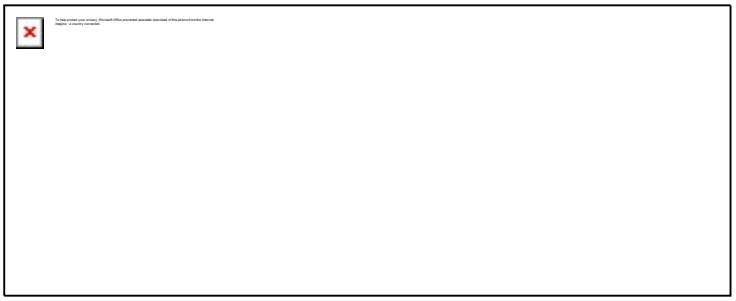
Follow Up Flag: Follow up
Flag Status: Flagged

To whom it may concern,
We acknowledge receipt of you email below.

Kind Regards,

Paul Brunel.
Transmission Planning.
Ph: 086 388 1962

Imagine Group.
Sandyford Business Centre.
Blackthorn Road, Sandyford, D18 AW89



From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday, September 17, 2021 9:53:43 AM
To: Ronnie O'Neill <Ronnie.ONeill@imaginegroup.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

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Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in

receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Cathal Creedon

From: IWT Info <info@iwt.ie>
Sent: Friday 17 September 2021 14:54
To: Littleton Wind farm
Subject: Re: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Eamon,

Thank you for contacting the Irish Wildlife Trust.

We do not have the capacity to consider or respond to all scoping / consultation request at the moment. We will endeavour to respond if possible.

Regards,
The Irish Wildlife Trust

On Fri, 17 Sept 2021 at 09:32, Littleton Wind farm <littletonwindfarm@ftco.ie> wrote:

> Dear Sir/Madam,
>
> Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.
>
> Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.
>
> If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.
>
> Kind Regards
>
> Eamon Hutton
>
> Senior Project Planner

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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--

HELP SUPPORT OUR WORK - Join the IWT Today - https://iwt.ie/support-us/become-a-member/
Irish Wildlife Trust, 8 Cabra Road, Dublin 7, D07T1W2
Registered Charity (CRA) Number: 20010966
Facebook: IrishWildlifeTrust
Twitter: @irishwildlife
Phone: 01 445 7259

Cathal Creedon

From: CorporateMessages <CorporateMessages@laoiscoco.ie>
Sent: Friday 17 September 2021 10:11
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Good morning Eamon,

Thank you for your email - Littleton Wind Farm EIAR and Planning Services- which I have forwarded to our Planning Section for their attention. They will correspond with you directly in due course.

Best regards,

Alice Kirwan,
Corporate Affairs, Laois County Council,
County Hall, Portlaoise.
057 8664094
akirwan@laoiscoco.ie

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 09:55
To: CorporateMessages <CorporateMessages@laoiscoco.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

You don't often get email from littletonwindfarm@ftco.ie. Learn why this is important

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
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Cathal Creedon

From: Met Eireann <met.eireann@met.ie>
Sent: Friday 17 September 2021 11:49
To: Littleton Wind farm
Subject: Automatic reply: P20-211 - Littleton Wind Farm EIAR and Planning Services

???
Thank you for your email, due to the large volume of emails received into this account, it can take up to 2 weeks to respond.
I endeavour to answer your email as quickély as possible. I thank you for your patience.
If your query is in relation to a legal report, please email: legal@met.ie
Regards,
Annmarie Woods
Customer Liaison Officer
www.met.ie.

Go raibh maith agat as do r-phost. Mar gheall ar líon mór ríomhhphoist a fhaightear isteach sa chuntas seo, d'fhéadhfadh sé suas le 2 sheachtain a thógáil freagra a thabhairt. Déanaim iarracht do r-phoist a fhreagairt chomh tapa agus is féidir. Gabhaim buíochas leat as do chuid foighne.
Má bhaineann do cheist le tuarascáil dlí, seol ríomhphost chuig: legal@met.ie go díreach.
Is mise le meas.
AineMaire Conchoille
Oifigeach Idirchaidrimh le Custaméirí
www.met.ie

****

This e-mail and any files transmitted with it are confidential and intended solely for the addressee. If you have received this email in error please notify the sender.

This e-mail message has also been scanned for the presence of computer viruses.

Ta an riomhphost seo, agus aon chomhad ata nasctha leis, faoi run agus is don te a seoladh chuige amhain e. Ma tharla go bhfuair tu an riomhphost seo tri dhearmad cuir in iul don te a sheol e led' thoil.

Ta an teachtaireacht riomhphoist seo scuabtha le bogearrai frithvireas.

****

Cathal Creedon

From: noreplyntacrm ntacrm <noreplyntacrm@nationaltransport.ie>
Sent: Friday 17 September 2021 09:46
To: Littleton Wind farm
Subject: Your enquiry has been received. Case reference #: CAS-106857-C8X5S7 NTA:00000080000145711

CASE REFERENCE #: CAS-106857-C8X5S7

DEPARTMENT RESPONSIBLE:

Dear Sir or Madam,

Thank you for contacting the National Transport Authority. Your enquiry has been received and will be dealt with as soon as possible. We aim to respond to all enquiries within 15 working days. A copy of your enquiry is displayed below.

Kind regards,
National Transport Authority

A Dhuine Uaisle,

Go raibh maith agat as ucht do theagmháil leis Údarás Náisiúnta Iompair. Fuarthas d'fhiosrúchán agus déileálfar leis chomh luath agus is féidir. Tá sé mar aidhm againn gach fiosrúchán a fhreagairt laistigh de 15 lá oibre. Taispeántar cóip d'fhiosrúchán thíos.

Le dea-ghuí,
An t-Údarás Náisiúnta Iompair

Description: **CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. Dear Sir/Madam, Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton. Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021. If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below. Kind Regards Eamon Hutton Senior Project Planner Marie Geary Staff Secretary Fehily Timoney and Company Core House, Pouladuff Road, Cork, T12 D773 t: 353 21**

496 9560 www.fehilytimoney.ie This message is for the intended recipient only. It may contain confidential or proprietary information. If you receive this message in error, please immediately delete it, destroy all copies of it and notify the sender. You must not use or disclose any part of this message if you are not the intended recipient. We may monitor all email communication through our networks. Any views expressed in this message are those of the individual sender, except where the message states otherwise. We take reasonable precautions to ensure our emails are virus free. However, we cannot accept responsibility for any virus transmitted by us and recommend that you subject any incoming email to your own virus checking procedure. Fehily Timoney is registered in Ireland as a private company limited by shares. Registration No. 180497. Registered office: Core House, Pouladuff Road, Cork, Ireland

Subject: **P20-211 - Littleton Wind Farm EIAR and Planning Services**
Contact Name: **littletonwindfarm@ftco.ie**
Email Address: **littletonwindfarm@ftco.ie**



Tá eolas sa teachtaireacht leictreonach seo a d'fhéadfadh bheith príobháideach nó faoi rún agus b'fhéidir go mbeadh ábhar rúnda nó pribhléideach ann. Is le h-aghaidh an duine/na ndaoine nó le h-aghaidh an aonáin atá ainmnithe thuas agus le haghaidh an duine/na ndaoine sin amháin atá an t-eolas. Tá cosc ar rochtain don teachtaireacht leictreonach seo do aon duine eile. Murab ionann tusa agus an té a bhfuil an teachtaireacht ceaptha dó bíodh a fhios agat nach gceadaítear nochtadh, cóipeáil, scaipeadh nó úsáid an eolais agus/nó an chomhaid seo agus b'fhéidir d'fhéadfadh bheith mídhleathach.
The information in this email is confidential and may be legally privileged. It is intended solely for the addressee. Access to this email by anyone else is unauthorised. If you are not the intended recipient, any disclosure, copying, distribution or any action taken or omitted to be taken in reliance on it is prohibited and may be unlawful. The NTA processes personal data provided to it in accordance with its privacy notice, available at https://www.nationaltransport.ie/privacy-statement/
'.

Cathal Creedon

From: Sustainable Energy Authority of Ireland <info@seai.ie>
Sent: Friday 17 September 2021 10:17
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services CRM:00350007014

Dear Eamon,

Thank you for contacting SEAI.

We acknowledge receipt of your email and confirm that we have forwarded it to the relevant department on your behalf.

If you have any further queries, please do not hesitate to contact us.

Yours sincerely,

Orla

SEAI is funded by the Government of Ireland through the Department of Communications, Climate Action and Environment.

Tá SEAI maonithe ag Rialtas na hÉireann tríd an Rionn Cumarsáide, Gníomhaithe ar son na hAeráide agus Comhshaoil.

---------- Original Message ----------
From: Eamon Hutton <littletonwindfarm@ftco.ie>;
Received: Fri Sep 17 2021 09:46:29 GMT+0100 (Irish Standard Time)
To: Reception . <info@seai.ie>; Reception <info@seai.ie>;
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

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Kind Regards
Eamon Hutton

Senior Project Planner

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560

www.fehilytimoney.ie

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SEAI supports pride

** Please note, SEAI Dublin Office has relocated to 3 Park Place, Upper Hatch Street, Dublin 2**

The Sustainable Energy Authority of Ireland (SEAI) works with the public, businesses, government and communities to achieve a cleaner energy future. SEAI is funded by the Government of Ireland through the Department of the Environment, Climate and Communications.

In line with current public health guidelines, many SEAI staff are working from home. In these circumstances, while it may suit us to send emails outside of normal business hours, we do not expect a response or action outside your own working hours.

This email may contain information which is confidential and/or privileged. The information is intended solely for the use of the individual or entity named above. If you are not the intended recipient, be aware that any disclosure, copying, distribution or use of the contents is prohibited. If you have received this electronic transmission in error, please notify the sender by telephone or

return email and delete the material from your computer.
SEAI
Tel: +353 (0) 1 8082100
Web: www.seai.ie

Cathal Creedon

From: Sinead Lynch
Sent: Tuesday 7 November 2023 12:25
To: MobileNetworksTXN@eir.ie
Cc: Trevor Byrne; Littleton Wind farm
Subject: P20-211 - Littleton Wind Farm - Telecommunications Impact Assessment
Attachments: Turbine Layout.kml; Met Mast Location.kml

Good afternoon,

I am contacting you to advise that Bord Na Mona intend to apply for planning consent for a wind farm development at Littleton Bog, County Tipperary. The Commission for Communications Regulation have recommended that we contact you in relation to potential interferences to telecommunications services as a result of the proposed wind farm.

The proposed wind farm project consists of 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m. 1 no. permanent meteorological mast to a height of 100 m above ground level.

I have attached the coordinates (ITM) of the proposed turbines below and a KML file which can be viewed in google earth.

Please consider the location of this project with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me.

Turbine ID	ITM Coordinates (X)	ITM Coordinates (Y)
T1	624121	657241
T2	623554	656586
T8	623067	654422
T7	622484	655013
T3	624059	655927
T4	622863	655965
T5	623227	655459
T10	621249	651425
T6	623561	654979
T9	620913	651814
T11	621584	651035
Met Mast	621775	654525

Kind regards,
Sinéad

FEHILY TIMONEY

Sinéad Lynch
Project Engineer

Fehily Timoney and Company
Unit 3/4, Northwood House, Northwood Crescent, Dublin, D09 X899
t: +353 1 658 3500
www.fehilytimoney.ie

Cathal Creedon

From: Sinead Lynch
Sent: Tuesday 7 November 2023 11:47
To: Peter O`Brien
Cc: Trevor Byrne; Littleton Wind farm
Subject: FW: P20-211 - Littleton Wind Farm - Telecommunications Impact Assessment
Attachments: Turbine Layout.kml; Met Mast Location.kml

Hi Peter,

My colleague previously contacted you in 2021 regarding a proposed wind farm development at Littleton Bog, County Tipperary. See email thread below for previous correspondence.
Since that initial email, the wind turbine layout design has changed. Details of the proposed project layout are outlined below.

The proposed wind farm project consists of 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m. 1 no. permanent meteorological mast to a height of 100 m above ground level.
The turbine and met mast location coordinates (ITM) are shown in the table below and I have attached a KMZ file of these locations which can be viewed in google earth.

Turbine ID	ITM Coordinates (X)	ITM Coordinates (Y)
T1	624121	657241
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T10	621249	651425
T6	623561	654979
T9	620913	651814
T11	621584	651035
Met Mast	621775	654525

Please consider the location of the updated layout with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me.

Kind regards,
Sinéad

Sinéad Lynch
Project Engineer

Fehily Timoney and Company
Unit 3/4, Northwood House, Northwood Crescent, Dublin, D09 X899
t: +353 1 658 3500
www.fehilytimoney.ie

From: Peter O`Brien <peter.obrien@enet.ie>
Sent: Friday, April 16, 2021 10:36 AM
To: Eamon Hutton <eamon.hutton@ftco.ie>
Subject: RE: P20-211 - Littleton Wind Farm - Telecommunications Impact Assessment

Hi Eamon,

We have one link possibly affected, see below:

A-End Coordinates	A-End Antenna Height	B-End Coordinates	B-End Antenna Height	Link Frequency
52°38'40.91"N 7°31'47.47"W	10m	52°44'55.95"N 7°57'36.25"W	5m	11GHz

Regards,
Peter

From: Eamon Hutton <eamon.hutton@ftco.ie>
Sent: Friday, April 16, 2021 10:19 AM
To: Peter O`Brien <peter.obrien@enet.ie>
Subject: P20-211 - Littleton Wind Farm - Telecommunications Impact Assessment

Good afternoon,

I am contacting you to advise that Bord Na Mona intend to apply for planning consent for a wind farm development at Littleton Bog, County Tipperary, consisting of up to 20 no. wind turbines. The Commission for Communications Regulation have recommended that we contact you in relation to potential interferences to telecommunications services as a result of the proposed wind farm.

I have attached the coordinates (ITM) of the proposed turbines below and a KMZ file which can be viewed in google earth. If you should require any further information, please do not hesitate to contact me. I can also provide coordinates in an alternative format if required.

Please consider the location of this project with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me by email or telephone.

Turbine	ITM Coordinates				
ID	X	Y		Latitude	Longitude
T1	623208	658449		52.676707	-7.656805
T2	623440	657911		52.671865	-7.653418

T3	623832	657547		52.668574	-7.647651
T4	624193	657103		52.664573	-7.642348
T5	623113	657303		52.666411	-7.658288
T6	623509	656887		52.662657	-7.652475
T7	623787	656416		52.658412	-7.648393
T8	622708	656272		52.657161	-7.664355
T9	623234	655938		52.654143	-7.656606
T10	623945	655876		52.653556	-7.646096
T11	622739	655430		52.649592	-7.663956
T12	623529	655333		52.648693	-7.652281
T13	623306	654704		52.64305	-7.655626
T14	622512	654790		52.643855	-7.667351
T15	621824	654615		52.642308	-7.67752
T16	622941	654089		52.637536	-7.661052
T17	621611	653893		52.63583	-7.680716
T18	621454	650819		52.608202	-7.683246
T19	621385	651505		52.614369	-7.684208
T20	620692	651652		52.615724	-7.694438

Kind regards,
Eamon Hutton

FEHILY TIMONEY

Eamon Hutton
Project Planner

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 4133
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Cathal Creedon

From: Sinead Lynch
Sent: Thursday 16 November 2023 10:06
To: info@iaa.ie
Cc: Trevor Byrne; Littleton Wind farm
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report - Aviation
Attachments: Turbine Layout.kml; Met Mast Location.kml

Dear Sir/Madam,

My colleagues previously contacted IAA in 2021 regarding a proposed wind farm development at Littleton Bog, County Tipperary. See email thread below for previous correspondence.
Since that initial email, the wind turbine layout design has been finalised. Details of the proposed project layout are outlined below.

The proposed wind farm project consists of 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m. 1 no. permanent meteorological mast to a height of 100 m above ground level.
The turbine and met mast location coordinates (ITM) are shown in the table below and I have attached a KMZ file of these locations which can be viewed in google earth.

Turbine ID	ITM Coordinates (X)	ITM Coordinates (Y)
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T6	623561	654979
T9	620913	651814
T11	621584	651035
Met Mast	621775	654525

I would appreciate it if you would review the turbine locations and notify us if there are any foreseeable impacts in relation to aviation or if you have any additional comments.

If you have any further queries or require any additional information please do not hesitate to contact me.

Kind regards,
Sinéad

From: O'LEARY Geraldine <Geraldine.O'LEARY@IAA.ie>
Sent: Thursday, September 30, 2021 1:36 PM
To: Littleton Wind farm <littletonwindfarm@ftco.ie>
Subject: FAO: EAMONN HUTTON - REF: P21-211/LETT/EH/MG

Reference: P21-211/Lett/EH/MG

Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report – EIAR Scoping and Consultation Request.

Dear Mr. Hutton,

Thank you for your letter/scoping report and request for comments in relation to the proposed windfarm to be located approximately 3km east of the village of Littleton and 10km east of Thurles, Co. Tipperary.

As the number of proposed turbines, the blade tip height and elevations of each turbine and the layout is not provided, Safety Regulation Division - Aerodromes cannot make any specific comments at this time.

The development appears to be approximately 22kms West of Kilkenny Airport, as such, it is likely that the following general observations would be proffered during a formal planning process: In the event of planning consent being granted, the applicant should be conditioned to contact the Irish Aviation Authority to: (1) agree an aeronautical obstacle warning light scheme for the wind farm development, (2) provide as-constructed coordinates in WGS84 format together with ground and blade tip height elevations at each wind turbine location and (3) notify the Authority of intention to commence crane operations with at least 30 days prior notification of their erection.

Yours sincerely,

Deirdre Forrest
Corporate Affairs

========== PLEASE consider the environment; PRINT ONLY when necessary! DISCLAIMER: This message contains information that is confidential, may be privileged and is the property of The Irish Aviation Authority (IAA). If you are not the intended recipient, you may not use this email or the information it contains. If you are not the intended recipient please notify the sender immediately and delete all copies of this message. Thank you. This email message has been swept for the presence of computer viruses. Internet Emails are not necessarily secure. The IAA accepts no responsibility for malicious content such as viruses or for changes made to this message after it was sent. _____ Registered Office: The Times Building, 11-12 D'Olier Street, Dublin 2. D02 T449 Registered Number: 211082 Place of Registration: Ireland A limited liability company
==========

Cathal Creedon

From: Sinead Lynch
Sent: Tuesday 7 November 2023 11:55
To: a.fleming@novatelecom.ie
Cc: Trevor Byrne; Littleton Wind farm
Subject: P20-211 - Littleton Wind Farm - Telecommunications Impact Assessment
Attachments: Turbine Layout.kml; Met Mast Location.kml

Good afternoon,

I am contacting you to advise that Bord Na Mona intend to apply for planning consent for a wind farm development at Littleton Bog, County Tipperary. The Commission for Communications Regulation have recommended that we contact you in relation to potential interferences to telecommunications services as a result of the proposed wind farm.

The proposed wind farm project consists of 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m. 1 no. permanent meteorological mast to a height of 100 m above ground level.

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Please consider the location of this project with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me.

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Met Mast	621775	654525

Kind regards,
Sinéad

FEHILY TIMONEY

Sinéad Lynch
Project Engineer

Fehily Timoney and Company
Unit 3/4, Northwood House, Northwood Crescent, Dublin, D09 X899
t: +353 1 658 3500
www.fehilytimoney.ie

Cathal Creedon

From: Sinead Lynch
Sent: Tuesday 7 November 2023 12:14
To: Alister Cole
Cc: Trevor Byrne; Littleton Wind farm
Subject: FW: Littleton Wind Farm - Telecommunications Assessment
Attachments: Turbine Layout.kml; Met Mast Location.kml

Hi Alister,

My colleagues previously contacted you in 2021 regarding a proposed wind farm development at Littleton Bog, County Tipperary. See email thread below for previous correspondence.
Since that initial email, the wind turbine layout design has changed. Details of the proposed project layout are outlined below.

The proposed wind farm project consists of 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m. 1 no. permanent meteorological mast to a height of 100 m above ground level.
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T2	623554	656586
T8	623067	654422
T7	622484	655013
T3	624059	655927
T4	622863	655965
T5	623227	655459
T10	621249	651425
T6	623561	654979
T9	620913	651814
T11	621584	651035
Met Mast	621775	654525

Please consider the location of the updated layout with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me.

Kind regards,
Sinéad

From: Alister Cole <Alister.Cole1@three.ie>
Sent: Friday, May 7, 2021 3:11 PM
To: Eamon Hutton <eamon.hutton@ftco.ie>
Cc: Sean Kelly <Sean.Kelly2@three.ie>; DL Estates ROI <Estates@three.ie>
Subject: RE: Littleton Wind Farm - Telecommunications Assessment

Hi Eamon,

I have reviewed the turbine locations for the proposed Littleton Windfarm and 3Ireland have one Microwave link that could potentially be affected. I have attached a spreadsheet with the link details as requested.

Best regards,

Alister

Alister Cole
Transmission Engineer

Mobile: 086 6024556
Email: Alister.Cole1@three.ie

From: Eamon Hutton <eamon.hutton@ftco.ie>
Sent: 07 May 2021 14:35
To: Alister Cole <Alister.Cole1@three.ie>
Subject: RE: Littleton Wind Farm - Telecommunications Assessment

CAUTION! External Email.

Hi Alister,

My apologies. This assessment has changed hands over to me and I didn't spot the record of correspondence.

The proposed turbine tip height is up to 200m and rotor diameters of up to 170m.

We're currently mapping links as part of the assessment in order to move turbines to mitigate by design. If possible could you forward coordinates of the link so we can add it to our constraints analysis?

Thanks,
Eamon Hutton

From: Alister Cole <Alister.Cole1@three.ie>
Sent: Friday 7 May 2021 14:20
To: Eamon Hutton <eamon.hutton@ftco.ie>
Subject: RE: Littleton Wind Farm - Telecommunications Assessment

Hi Eamon,

I emailed Crystal for some information on tower height and rotor diameter and did not receive a response. We have a link passing through this windfarm and wanted to look at the distance from the turbines.

Best regards,

Alister

Alister Cole
Transmission Engineer

Mobile: 086 6024556
Email: Alister.Cole1@three.ie

From: Eamon Hutton <eamon.hutton@ftco.ie>
Sent: 07 May 2021 13:16
To: Alister Cole <Alister.Cole1@three.ie>
Subject: FW: Littleton Wind Farm - Telecommunications Assessment

CAUTION! External Email.

Hi Alister

I'm following up on the below email from last month which was sent to you by my colleague Sam Ross. Checking in to see if Three have any comment on the below proposal.

Thanks,
Eamon Hutton

Eamon Hutton
Project Planner

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 4133
www.fehilytimoney.ie

From: Samuel Ross
Sent: Thursday 11 March 2021 11:59
Subject: Littleton Wind Farm - Telecommunications Assessment

Good afternoon,

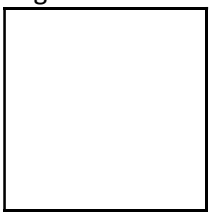
I am contacting you to advise that Bord Na Mona intend to apply for planning *consent* for a wind farm development *at Littleton Bog, County Tipperary,* consisting of *up to* 20 no. wind turbines. *The* Commission for Communications Regulation *have recommended that we contact you in relation to potential interferences to telecommunications services as a result of the proposed wind farm.*

I have attached the coordinates (ITM) of the proposed turbines below and a KMZ file which can be viewed in google earth. If you should require any further information, please do not hesitate to contact *Crystal Leiker (Crystal Leiker crystal.leiker@ftco.ie)*. I can also provide coordinates in an alternative format if required.

Please consider the location of this project with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me by email or telephone.

Turbine	ITM Coordinates				
ID	X	Y		Latitude	Longitude
T1	623208	658449		52.676707	-7.656805
T2	623440	657911		52.671865	-7.653418
T3	623832	657547		52.668574	-7.647651
T4	624193	657103		52.664573	-7.642348
T5	623113	657303		52.666411	-7.658288
T6	623509	656887		52.662657	-7.652475
T7	623787	656416		52.658412	-7.648393
T8	622708	656272		52.657161	-7.664355
T9	623234	655938		52.654143	-7.656606
T10	623945	655876		52.653556	-7.646096
T11	622739	655430		52.649592	-7.663956
T12	623529	655333		52.648693	-7.652281
T13	623306	654704		52.64305	-7.655626
T14	622512	654790		52.643855	-7.667351
T15	621824	654615		52.642308	-7.67752
T16	622941	654089		52.637536	-7.661052
T17	621611	653893		52.63583	-7.680716
T18	621454	650819		52.608202	-7.683246
T19	621385	651505		52.614369	-7.684208
T20	620692	651652		52.615724	-7.694438

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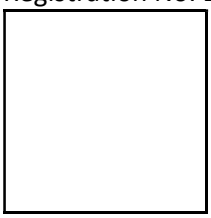


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Cathal Creedon

From: Sinead Lynch
Sent: Tuesday 7 November 2023 12:08
To: Conor.Pendlebury@viatel.com
Cc: Trevor Byrne; Littleton Wind farm
Subject: P20-211 - Littleton Wind Farm - Telecommunications Impact Assessment
Attachments: Turbine Layout.kml; Met Mast Location.kml

Good afternoon,

I am contacting you to advise that Bord Na Mona intend to apply for planning consent for a wind farm development at Littleton Bog, County Tipperary. The Commission for Communications Regulation have recommended that we contact you in relation to potential interferences to telecommunications services as a result of the proposed wind farm.

The proposed wind farm project consists of 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m. 1 no. permanent meteorological mast to a height of 100 m above ground level.

I have attached the coordinates (ITM) of the proposed turbines below and a KML file which can be viewed in google earth.

Please consider the location of this project with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me.

Turbine ID	ITM Coordinates (X)	ITM Coordinates (Y)
T1	624121	657241
T2	623554	656586
T8	623067	654422
T7	622484	655013
T3	624059	655927
T4	622863	655965
T5	623227	655459
T10	621249	651425
T6	623561	654979
T9	620913	651814
T11	621584	651035
Met Mast	621775	654525

Kind regards,
Sinéad

FEHILY TIMONEY

Sinéad Lynch
Project Engineer

Fehily Timoney and Company
Unit 3/4, Northwood House, Northwood Crescent, Dublin, D09 X899
t: +353 1 658 3500
www.fehilytimoney.ie

Cathal Creedon

From: Sinead Lynch
Sent: Thursday 16 November 2023 09:21
To: gavin.byrne@vodafone.com
Cc: Trevor Byrne; Littleton Wind farm
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services
Attachments: Turbine Layout.kml; Met Mast Location.kml

Hi Gavin,

My colleagues previously contacted you in 2021 regarding a proposed wind farm development at Littleton Bog, County Tipperary. See email thread below for previous correspondence.
Since that initial email, the wind turbine layout design has changed. Details of the proposed project layout are outlined below.

The proposed wind farm project consists of 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m. 1 no. permanent meteorological mast to a height of 100 m above ground level.
The turbine and met mast location coordinates (ITM) are shown in the table below and I have attached a KMZ file of these locations which can be viewed in google earth.

Turbine ID	ITM Coordinates (X)	ITM Coordinates (Y)
T1	624121	657241
T2	623554	656586
T8	623067	654422
T7	622484	655013
T3	624059	655927
T4	622863	655965
T5	623227	655459
T10	621249	651425
T6	623561	654979
T9	620913	651814
T11	621584	651035
Met Mast	621775	654525

Please consider the location of the updated layout with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me.

Kind regards,
Sinéad

From: Power, Robert, Vodafone (External) <robert.power1@vodafone.com>
Sent: Monday, September 20, 2021 3:25 PM
To: Littleton Wind farm <littletonwindfarm@ftco.ie>
Cc: Lyons, Sean, Vodafone (External) <sean.lyons@vodafone.com>
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi,

There are two Vodafone links that pass through the site. TY117-TYGCL and TYLSF-TYGCL. Co-ordinates provided below.

A clearance of 30m from the first Fresnel zone is desired.

Kind Regards,
Robert

Site ID: TY117
Easting: 221387
Northing: 158472

Site ID: TYLSF
Easting: 193809
Northing: 152230

Site ID: TYGCL
Easting: 225523
Northing: 150932

C2 General

From: Lyons, Sean, Vodafone (External) <sean.lyons@vodafone.com>
Sent: Monday 20 September 2021 14:52
To: Power, Robert, Vodafone (External) <robert.power1@vodafone.com>
Cc: Byrne, Gavin, Vodafone <gavin.byrne@vodafone.com>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Rob,

Can you please review this proposed windfarm development?
Please send your findings back to Littleton Wind farm <littletonwindfarm@ftco.ie>

Thanks,

Seán Lyons
Transmission Program Manager
Converged Transmission
Technology- NET
+353877758117
sean.lyons@vodafone.com

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MountainView, Leopardstown, Dublin 18,

C2 General

From: Byrne, Gavin, Vodafone <gavin.byrne@vodafone.com>
Sent: Monday 20 September 2021 13:59
To: Lyons, Sean, Vodafone (External) <sean.lyons@vodafone.com>
Cc: Neill o', Shane, Vodafone <shane.oneill2@vodafone.com>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Sean,

Not sure if you've got this one or not. Can you ask one of the team to take a look?

Gavin Byrne
TX Planning & Design Engineer
Converged Transmission
+353 876448159
gavin.byrne@vodafone.com

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C2 General

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 10:03
To: Byrne, Gavin, Vodafone <gavin.byrne@vodafone.com>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

CYBER SECURITY WARNING: This email is from an external source - be careful of attachments and links. Please follow the Cyber Code and report suspicious emails.

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards
Eamon Hutton
Senior Project Planner

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Cathal Creedon

From: Alice Byrne Kelly <abyrnekelly@southernassembly.ie>
Sent: Friday 17 September 2021 09:30
To: Littleton Wind farm
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services
Attachments: 10. Southern Region Assembly.pdf; P20-211_Scoping Report.pdf

A chara,

I wish to acknowledge receipt of the below (and attached) correspondence.

This correspondence has been forwarded to the planning division for review,

Le meas,

Alice Byrne Kelly
Clerical Officer
Corporate & Planning
Southern Regional Assembly

☎ **Phone:** +353 51 860700/701
✉ **Post:** Assembly House, O'Connell Street, Waterford, X91F8PC
eMail: abyrnekelly@southernassembly.ie
Website: www.southernassembly.ie

Tionól Réigiúnach an Deiscirt
Southern Regional Assembly

Ireland's European Structural and Investment Funds Programmes 2014-2020
Co-funded by the Irish Government and the European Union

European Union
European Regional Development Fund

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: 17 September 2021 07:32
To: info <info@southernassembly.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in

receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards,
Marie Geary
for Eamon Hutton
Senior Project Engineer

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Cathal Creedon

From: Trevor Byrne
Sent: Wednesday 8 March 2023 09:00
To: secretary@kilkennycoco.ie
Cc: Littleton Wind farm
Subject: Littleton Wind Farm EIAR/Scoping Consultation
Attachments: P20-211_Let_Littleton WF EIAR Scoping_Kilkenny Co Co(1.0).pdf

Good morning,

I am emailing on behalf of Bord na Móna Powergen Ltd. regarding their proposed Littleton Wind Farm project near Thurles, Co. Tipperary. The attached letter and supporting information is being issued to you as part of the scoping consultation process for the proposed project's Environmental Impact Assessment Report (EIAR) with a view to hopefully securing a consultation meeting with Kilkenny County Council as soon as possible. In particular, the applicant would like to present and discuss the proposed grid connection route option within Kilkenny County Council's jurisdiction.

It would be our hope to be able to secure a meeting date before the end of March if possible, depending on your availability of course.

If you have any questions please do not hesitate to contact me.

Best Regards,
Trevor

FEHILY TIMONEY

Trevor Byrne
Principal Engineer

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 85 808 8044 | +353 21 496 4133
www.fehilytimoney.ie

Cathal Creedon

From: Customer Service Desk <customerservices@tipperarycoco.ie>
Sent: Friday 17 September 2021 08:22
To: Littleton Wind farm
Subject: Customer Service Desk: P20-211 - Littleton Wind Farm EIAR and Planning Services : Case No: T-169104-W1V8 CRM:057700841

Dear Marie

Thank you for your e-mail regarding **" P20-211 - Littleton Wind Farm EIAR and Planning Services "**

I have forwarded your e-mail to the Planning Section for their attention and direct reply to you. Should you wish to follow up on this case, please contact Customer Service Desk quoting reference number **T-169104-W1V8**

Regards,
Customer Service Desk,
Tipperary County Council,
Civic Offices, Clonmel / Civic Offices, Nenagh,
Co. Tipperary.

Phone: 0761 06 5000
E-mail: customerservice@tipperarycoco.ie

Cathal Creedon

From: INFO <Information@tii.ie>
Sent: Monday 20 September 2021 17:00
To: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Dear Ms. Geary,

Thank you for your email of 17 September 2021 regarding the above.

TII will endeavour to consider and respond to planning applications referred to it given its status and duties as a statutory consultee under the Planning Acts. The approach to be adopted by TII in making such submissions or comments will seek to uphold official policy and guidelines as outlined in the Section 28 Ministerial Guidelines 'Spatial Planning and National Roads Guidelines for Planning Authorities' (DoECLG, 2012). Regard should also be had to other relevant guidance available at www.TII.ie.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred.

National Strategic Outcome 2 of the National Planning Framework includes the objective to maintain the strategic capacity and safety of the national roads network. It is also an investment priority of the National Development Plan, 2018 – 2027, to ensure that the extensive transport networks which have been greatly enhanced over the last two decades, are maintained to a high level to ensure quality levels of service, accessibility and connectivity to transport users. This requirement is further reflected in the recent publication of the Draft National Investment Framework for Transport in Ireland and also the existing Statutory Section 28 Spatial Planning and National Roads Guidelines for Planning Authorities.

With respect to EIAR scoping issues, the recommendations indicated below provide only general guidance for the preparation of an EIAR, which may affect the national road network.

The developer/scheme promoter should have regard, inter alia, to the following:

• TII notes that the subject site appears to access the local/regional road in the first instance. However, proximity to the M8 Motorway, national road, is noted. Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to locations of existing and future national road schemes.

• TII would be specifically concerned as to potential significant impacts the development would have on the national road network (and junctions with national roads) in the proximity of the proposed development; M8 Motorway, national primary road, and N62 and N75, national secondary roads. Sufficient set-back from motorway/national roads for turbine sting shall be provided.

• The developer should assess visual impacts from existing national roads.

• The developer should have regard to any EIAR/EIS and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should in particular have regard to any potential cumulative impacts.

• The developer, in preparing EIAR, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works).

• The developer, in preparing EIAR, should have regard to TII's Environmental Assessment and Construction Guidelines, including the Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (National Roads Authority, 2006).

• The EIAR/EIS should consider the Environmental Noise Regulations 2006 (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see Guidelines for the Treatment of Noise and Vibration in National Road Schemes (1st Rev., National Roads Authority, 2004)).

• It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. In relation to national roads, TII's Traffic and Transport Assessment Guidelines (2014) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the NRA/TII TTA Guidelines which addresses requirements for sub-threshold TTA. Any improvements required to facilitate development should be identified. It will be the responsibility of the developer to pay for the costs of any improvements to national roads to facilitate the private development proposed, as TII will not be responsible for such costs.

• The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required.

• In the interests of maintaining the safety and standard of the national road network, the EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network.

• TII recommends that that applicant/developer should clearly identify haul routes proposed and fully assess the network to be traversed. Where abnormal 'weight' loads are proposed, separate structure approvals/permits and other licences may be required in connection with the proposed haul route and all structures on the haul route through all the relevant County Council administrative areas should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal 'weight' load proposed.

The national road network is managed by a combination of PPP Concessions, Motorway Maintenance and Renewal Contracts (MMaRC) and local road authorities in association with TII. The applicant/developer should also consult with all PPP Companies, MMaRC Contractors and road authorities over which the haul route traverses to ascertain any operational requirements such as delivery timetabling, etc. and to ensure that the strategic function of the national road network is safeguarded.

Additionally, any damage caused to the pavement on the existing national road arising from any temporary works due to the turning movement of abnormal 'length' loads (e.g., tearing of the surface course, etc.) shall be rectified in accordance with TII Pavement Standards and details in this regard shall be agreed with the Road Authority prior to the commencement of any development on site.

• Grid connection and cable routing proposals should be developed to safeguard proposed road schemes as TII will not be responsible for costs associated with future relocation of cable routing where proposals are catered for in an area of a proposed national road scheme. In that regard, consideration should be given to routing options, use of existing crossings, depth of cable laying, etc.

In the context of the existing national road network, in accordance with the National Planning Framework National Strategic Outcome no. 2 'Enhanced Regional Accessibility', there is a requirement to maintain the strategic capacity and safety of the network. This requirement is further reflected in the National Development Plan, the recent publication of the Draft National Investment Framework for Transport in Ireland and also the existing Statutory Section 28 Spatial Planning and National Roads Guidelines for Planning Authorities.

There is around 99,000km of roads in Ireland, the national road network which caters for strategic inter-urban travel consists of only approx. 5.4% of this. There is a critical requirement to ensure the strategic capacity and safety of this

national road network is maintained and significant Government investment already made in the national road network is safeguarded.

The provision of cabling along the national road network represents a number of significant implications for TII and road authorities in the management and maintenance of the strategic national road network and TII is of the opinion that grid connection cable routing should reflect the foregoing provisions of official policy. Therefore, TII advises that grid connection cable routing should seek to utilise available alternatives, as opposed to the strategic national road network contrary to the provisions of official policy.

Other consents or licences may be required from the road authority for any trenching or cabling proposals crossing the national road. TII requests referral of all proposals agreed and licensed between the road authority and the applicant which affect the national road network.

Cable routing should avoid all impacts to existing TII infrastructure such as traffic counters, weather stations, etc. and works required to such infrastructure shall only be undertaken in consultation with and subject to the agreement of TII, any costs attributable shall be borne by the applicant/developer. The developer should also be aware that separate approvals may be required for works traversing the national road network.

Notwithstanding any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practice.

I hope that this information is of assistance to you.

Yours sincerely,

Alban Mills
Senior Regulatory & Administration Executive
Ref No. TII21-115196

TII Iompair Éireann Transport Infrastructure Ireland
www.tii.ie info@tii.ie +353 (0)1 646 3600

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 07:32
To: INFO <Information@tii.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

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Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards,
Marie Geary
for Eamon Hutton
Senior Project Engineer

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Cathal Creedon

From: Kieran O'Regan <koregan@water.ie>
Sent: Friday 17 September 2021 15:19
To: Littleton Wind farm
Cc: Ali Robinson; Planning
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services
Attachments: IrishWaterResponse_EIAR_Littleton Wind Farm.pdf

Afternoon Eamon,

Please find attached Irish Waters response to your EIAR scoping request for the proposed Littleton Wind Farm in Co. Tipperary.

If have any queries please feel free to contact me.

Kind regards,

Kieran

Kieran O'Regan *B.A, MPlan*
Development Management Planning

Uisce Éireann
Teach na hAbhann Móire, Páirc Ghnó Mhala, Mala, Contae Chorcaí, Éire
Irish Water
Blackwater House, Mallow Business Park, Mallow, County Cork, Ireland

P: 022 52285 / **M**: 087 3550100
E: koregan@water.ie
www.water.ie

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 09:14
To: Planning <Planning@water.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

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Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
Staff Secretary

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t: +353 21 496 9560
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Thank you for your attention.

Tá an fhaisnéis á seachadadh dírithe ar an duine nó ar an eintiteas chuig a bhfuil sí seolta amháin agus féadfar ábhar faoi rún, faoi phribhléid nó ábhar atá íogair ó thaobh tráchtála de a bheith mar chuid de. Tá aon athsheachadadh nó scaipeadh den fhaisnéis, aon athbhreithniú ar nó aon úsáid eile a bhaint as, nó aon ghníomh a dhéantar ag brath ar an bhfaisnéis seo ag daoine nó ag eintitis nach

dóibh siúd an fhaisnéis seo, toirimiscthe agus féadfar é a bheith neamhdhleathach. Níl Uisce Éireann faoi dhliteanas maidir le seachadadh iomlán agus ceart na faisnéise sa chumarsáid seo nó maidir le haon mhoill a bhaineann léi. Ní ghlacann Uisce Éireann le haon dliteanas faoi ghnímh nó faoi iarmhairtí bunaithe ar úsáid thoirmiscthe na faisnéise seo. Níl Uisce Éireann faoi dhliteanas maidir le seachadadh ceart agus iomlán na faisnéise sa chumarsáid seo nó maidir le haon mhoill a bhaineann léi. Má fuair tú an teachtaireacht seo in earráid, más é do thoil é, déan teagmháil leis an seoltóir agus scrios an t-ábhar ó gach aon ríomhaire. Féadfar ríomhphost a bheith soghabhálach i leith truaillithe, idircheaptha agus i leith leasaithe neamhúdaraithe. Ní ghlacann Uisce Éireann le haon fhreagracht as athruithe nó as idircheapadh a rinneadh ar an ríomhphost seo i ndiaidh é a sheoladh nó as aon dochar do chórais na bhfaighteoirí déanta ag an teachtaireacht seo nó ag a ceangaltáin. Más é do thoil é, tabhair faoi deara chomh maith go bhféadfar monatóireacht a dhéanamh ar theachtaireachtaí chuig nó ó Uisce Éireann chun comhlíonadh le polasaithe agus le caighdeáin Uisce Éireann a chinntiú agus chun ár ngnó a chosaint. Fochuideachta gníomhaíochta de chuid Ervia is ea Uisce Éireann atá faoi theorainn scaireanna, de bhun fhorálacha an tAcht um Sheirbhísí Uisce 2013, a bhfuil a bpríomh ionad gnó ag 24-26 Teach Colvill, Sráid na Talbóide, BÁC 1.

Go raibh maith agat as d’aird a thabhairt.

Cathal Creedon

From: Keiran Butler <Keiran.Butler@virginmedia.ie>
Sent: Friday 17 September 2021 18:01
To: Mark Nolan
Cc: Littleton Wind farm
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Follow Up Flag: Follow up
Flag Status: Completed

Hi All
I don't have enough detail to see if we have any links in the area
The map is in a PDF doc
If I could have a KML of the area of the wind farm or turbine positions in KML I will be able to see of there is any conflict

Regards
Keiran Butler
cork
Virgin Media Ireland

From: Mark Nolan <Mark.Nolan@virginmedia.ie>
Sent: Friday 17 September 2021 10:26
To: Keiran Butler <Keiran.Butler@virginmedia.ie>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Keiran,

Can you review please?

Rgds

Mark

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 10:03
To: Mark Nolan <Mark.Nolan@virginmedia.ie>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

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Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Cathal Creedon

From: Keiran Butler <Keiran.Butler@virginmedia.ie>
Sent: Wednesday 29 September 2021 16:58
To: Littleton Wind farm
Cc: Mark Nolan
Subject: RE: P20-211 - Littleton Wind Farm - Telecoms

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Eamon

Yes as Liam said before
I can confirm we don't have any links in this area
I have added them to my data base in the event we would plan a link in the further

Regards
Keiran Butler
Virgin Media
Cork

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Wednesday 29 September 2021 16:20
To: Keiran Butler <Keiran.Butler@virginmedia.ie>
Subject: RE: P20-211 - Littleton Wind Farm - Telecoms

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Hi Kieran,

As discussed, I've attached previous correspondence received from Liam. Also attached is the prelim turbine layout in KMZ format and coordinates of same below.

We are working towards a latest design iteration and would be grateful if you could provide information on links in the area (if any) so we can work to mitigate by design.

If you should require any further information, please do not hesitate to contact me.

Turbine	ITM Coordinates				
ID	X	Y		Latitude	Longitude
T1	623208	658449		52.676707	-7.656805
T2	623440	657911		52.671865	-7.653418
T3	623832	657547		52.668574	-7.647651
T4	624193	657103		52.664573	-7.642348
T5	623113	657303		52.666411	-7.658288
T6	623509	656887		52.662657	-7.652475
T7	623787	656416		52.658412	-7.648393

T8	622708	656272		52.657161	-7.664355
T9	623234	655938		52.654143	-7.656606
T10	623945	655876		52.653556	-7.646096
T11	622739	655430		52.649592	-7.663956
T12	623529	655333		52.648693	-7.652281
T13	623306	654704		52.64305	-7.655626
T14	622512	654790		52.643855	-7.667351
T15	621824	654615		52.642308	-7.67752
T16	622941	654089		52.637536	-7.661052
T17	621611	653893		52.63583	-7.680716
T18	621454	650819		52.608202	-7.683246
T19	621385	651505		52.614369	-7.684208
T20	620692	651652		52.615724	-7.694438

Kind regards,
Eamon Hutton

Eamon Hutton
Senior Project Planner

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t: +353 21 496 4133
www.fehilytimoney.ie

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Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

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cork
Virgin Media Ireland

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Kind Regards
Eamon Hutton
Senior Project Planner

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Marie Geary
Staff Secretary

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Cathal Creedon

From: Power, Robert, Vodafone (External) <robert.power1@vodafone.com>
Sent: Monday 20 September 2021 15:25
To: Littleton Wind farm
Cc: Lyons, Sean, Vodafone (External)
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Follow Up Flag: Follow up
Flag Status: Flagged

Hi,

There are two Vodafone links that pass through the site. TY117-TYGCL and TYLSF-TYGCL. Co-ordinates provided below.

A clearance of 30m from the first Fresnel zone is desired.

Kind Regards,
Robert

Site ID: TY117
Easting: 221387
Northing: 158472

Site ID: TYLSF
Easting: 193809
Northing: 152230

Site ID: TYGCL
Easting: 225523
Northing: 150932

C2 General

From: Lyons, Sean, Vodafone (External) <sean.lyons@vodafone.com>
Sent: Monday 20 September 2021 14:52
To: Power, Robert, Vodafone (External) <robert.power1@vodafone.com>
Cc: Byrne, Gavin, Vodafone <gavin.byrne@vodafone.com>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Rob,

Can you please review this proposed windfarm development?
Please send your findings back to Littleton Wind farm <littletonwindfarm@ftco.ie>

Thanks,

Seán Lyons
Transmission Program Manager
Converged Transmission
Technology- NET

+353877758117
sean.lyons@vodafone.com

Vodafone.ie
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Registered in Ireland: No. 326967

C2 General

From: Byrne, Gavin, Vodafone <gavin.byrne@vodafone.com>
Sent: Monday 20 September 2021 13:59
To: Lyons, Sean, Vodafone (External) <sean.lyons@vodafone.com>
Cc: Neill o', Shane, Vodafone <shane.oneill2@vodafone.com>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Sean,

Not sure if you've got this one or not. Can you ask one of the team to take a look?

Gavin Byrne
TX Planning & Design Engineer
Converged Transmission
+353 876448159
gavin.byrne@vodafone.com

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Ireland: No. 326967

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C2 General

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 10:03
To: Byrne, Gavin, Vodafone <gavin.byrne@vodafone.com>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

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Dear Sir/Madam,

Bord na Móna Powergen Ltd. intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, near the town of Littleton.

Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

If you do not have any comments to make, I would be grateful if you could acknowledge receipt of this email. If you have any queries regarding the project, please contact us at littletonwinbdfarm.ftco.ie or feel free to ring the office at the number provided below.

Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
Staff Secretary

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9560
www.fehilytimoney.ie

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Cathal Creedon

From: Robert Power, Vodafone (External) <robert.power1@vodafone.com>
Sent: Thursday 16 November 2023 11:21
To: Sinead Lynch; gavin.byrne@vodafone.com
Cc: Trevor Byrne; Littleton Wind farm; Siobhan Burke, Vodafone; Sean Lyons, Vodafone (External)
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Sinead,

A clearance of 30m from the first Fresnel zone is desired. The proposed location of T11 is well inside this. T4 is also a little concerning. Details below.

Let me know if you require any additional information.

Kind Regards,
Robert

Robert Power
Transmission Engineer
Technology- NET
+353864648455
robert.power1@vodafone.com

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Link Name / ID	Band MHz\GHz	Link Length	Site A			Site B	
			Lat	Long	Ant Height	Lat	Long
TYGCLTY117_S0	26 GHz	8.59km	52.6773755	-7.684538983	15	52.60944412	-7.623974059
TYGCLTYLSF_S0	15 GHz	31.64km	52.62166895	-8.092142394	15	52.60944412	-7.623974059

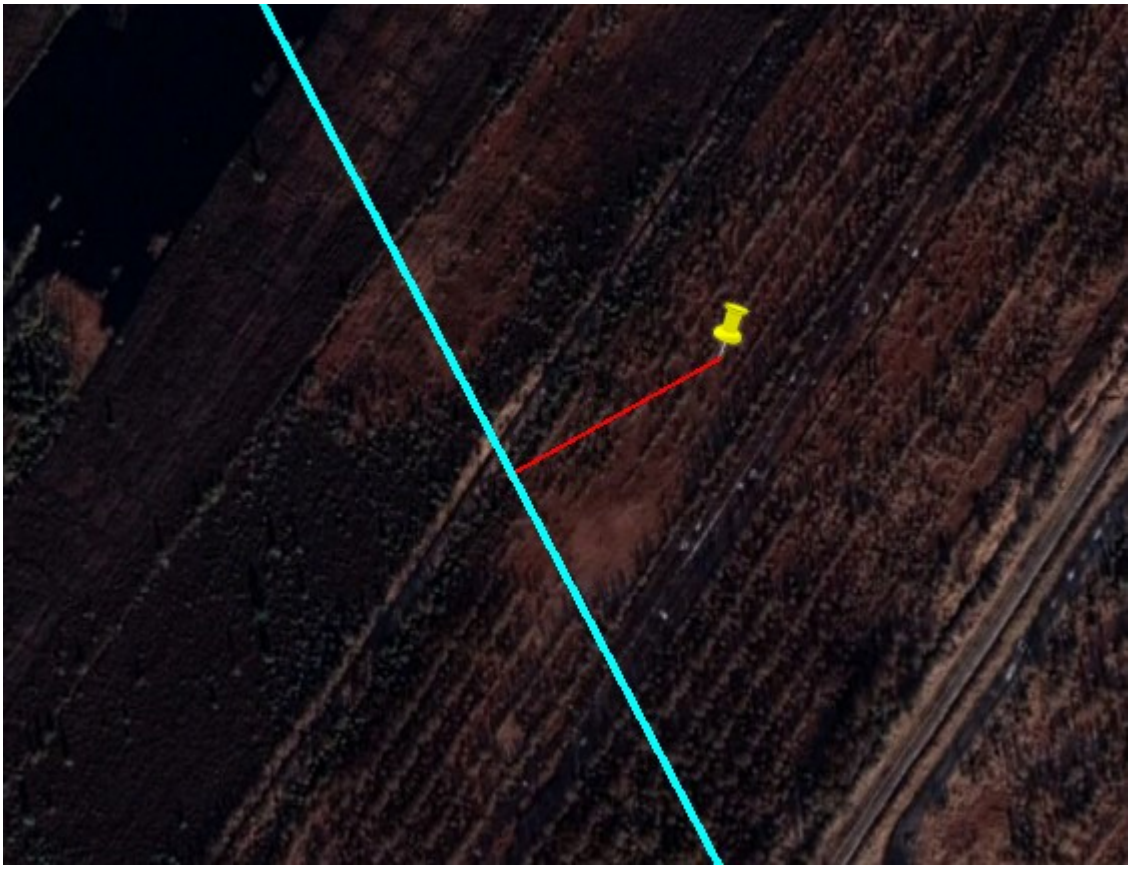
T11 – TYGCLTYLSF

Turbine location is approx. 100m from direct line of sight. The link passes around 170m above ground level here. With blade tip height of 190m and 164m blade diameter this is almost certainly going to impact this radio link.



T4 - TYGCLTY117

Turbine 4 is approx 120m from direct line of sight. This gives, just about, sufficient clearance.





C2 General

From: Gavin Byrne, Vodafone <gavin.byrne@vodafone.com>
Sent: Thursday 16 November 2023 09:42
To: Robert Power, Vodafone (External) <robert.power1@vodafone.com>
Cc: sinead.lynch@ftco.ie; Trevor Byrne <trevor.byrne@ftco.ie>; Littleton Wind farm <littletonwindfarm@ftco.ie>; Siobhan Burke, Vodafone <siobhan.burke1@vodafone.com>; Sean Lyons, Vodafone (External) <sean.lyons@vodafone.com>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Rob,

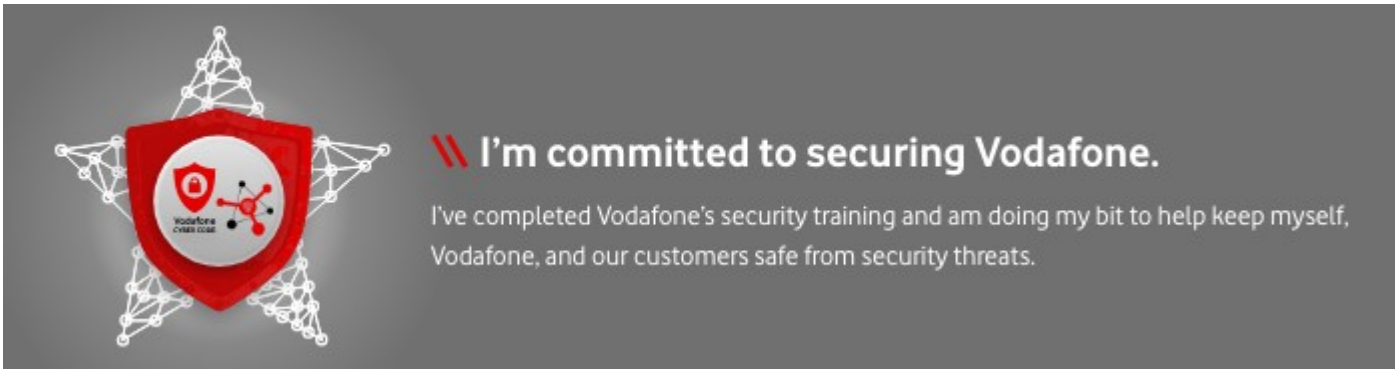
Can you take a look at the revised turbine locations attached and return comments?

Gavin Byrne
Senior TX Planning & Design Engineer
Converged Transmission
+353 876448159
gavin.byrne@vodafone.com

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Ireland: No. 326967

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C2 General

From: Sinead Lynch <sinead.lynch@ftco.ie>
Sent: Thursday 16 November 2023 09:21
To: Gavin Byrne, Vodafone <gavin.byrne@vodafone.com>
Cc: Trevor Byrne <trevor.byrne@ftco.ie>; Littleton Wind farm <littletonwindfarm@ftco.ie>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

External Email: Be cautious about the sender email address, attachments and links. If uncertain use Report Message button.

Hi Gavin,

My colleagues previously contacted you in 2021 regarding a proposed wind farm development at Littleton Bog, County Tipperary. See email thread below for previous correspondence.
Since that initial email, the wind turbine layout design has changed. Details of the proposed project layout are outlined below.

The proposed wind farm project consists of 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m. 1 no. permanent meteorological mast to a height of 100 m above ground level.
The turbine and met mast location coordinates (ITM) are shown in the table below and I have attached a KMZ file of these locations which can be viewed in google earth.

Turbine ID	ITM Coordinates (X)	ITM Coordinates (Y)

T1	624121	657241
T2	623554	656586
T8	623067	654422
T7	622484	655013
T3	624059	655927
T4	622863	655965
T5	623227	655459
T10	621249	651425
T6	623561	654979
T9	620913	651814
T11	621584	651035
Met Mast	621775	654525

Please consider the location of the updated layout with respect to your company's infrastructure. If there are any potential issues arising or any further information I can provide you with regarding the proposed project please do not hesitate to contact me.

Kind regards,
Sinéad

From: Power, Robert, Vodafone (External) <robert.power1@vodafone.com>
Sent: Monday, September 20, 2021 3:25 PM
To: Littleton Wind farm <littletonwindfarm@ftco.ie>
Cc: Lyons, Sean, Vodafone (External) <sean.lyons@vodafone.com>
Subject: RE: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi,

There are two Vodafone links that pass through the site. TY117-TYGCL and TYLSF-TYGCL. Co-ordinates provided below.

A clearance of 30m from the first Fresnel zone is desired.

Kind Regards,
Robert

Site ID: TY117
Easting: 221387
Northing: 158472

Site ID: TYLSF
Easting: 193809
Northing: 152230

Site ID: TYGCL
Easting: 225523

Northing: 150932

C2 General

From: Lyons, Sean, Vodafone (External) <sean.lyons@vodafone.com>
Sent: Monday 20 September 2021 14:52
To: Power, Robert, Vodafone (External) <robert.power1@vodafone.com>
Cc: Byrne, Gavin, Vodafone <gavin.byrne@vodafone.com>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Rob,

Can you please review this proposed windfarm development?
Please send your findings back to Littleton Wind farm <littletonwindfarm@ftco.ie>

Thanks,

Seán Lyons
Transmission Program Manager
Converged Transmission
Technology- NET
+353877758117
sean.lyons@vodafone.com

Vodafone.ie
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C2 General

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Sent: Monday 20 September 2021 13:59
To: Lyons, Sean, Vodafone (External) <sean.lyons@vodafone.com>
Cc: Neill o', Shane, Vodafone <shane.oneill2@vodafone.com>
Subject: FW: P20-211 - Littleton Wind Farm EIAR and Planning Services

Hi Sean,

Not sure if you've got this one or not. Can you ask one of the team to take a look?

Gavin Byrne
TX Planning & Design Engineer
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Ireland: No. 326967

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C2 General

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Friday 17 September 2021 10:03
To: Byrne, Gavin, Vodafone <gavin.byrne@vodafone.com>
Subject: P20-211 - Littleton Wind Farm EIAR and Planning Services

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Please find attached cover letter and Scoping Report which is being issued to you as part of the consultation process for the Environmental Impact Assessment Report. As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development relevant to your area of expertise, by the 5th of November 2021.

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Kind Regards
Eamon Hutton
Senior Project Planner

FEHILY TIMONEY

Marie Geary
Staff Secretary

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t: +353 21 496 9560
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Scoping Responses 2025

Cathal Creedon

From: Matthew Craig <matthew.craig@2rn.ie>
Sent: Thursday 8 May 2025 15:03
To: Littleton Wind farm
Cc: windfarms@rte.ie; Johnny Evans
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

You don't often get email from matthew.craig@2rn.ie. Learn why this is important

Hi Niamh,

2rn's fixed linking will not be affected, there is a risk to broadcast services from Kilduff and to a lesser extent from Mt. Leinster.
We would therefore ask that a Protocol be signed between the Developer and 2rn should the site go ahead.

Regards

Matthew Craig

Project Engineer
Projects and Coverage Planning
2RN
Block B, Cookstown Court, Old Belgard Road, Tallaght, Dublin 24, Ireland
D24 WK28
Mobile: + 353 (0) 87 7509955

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Thursday, May 8, 2025 1:27:46 PM (UTC+00:00) Dublin, Edinburgh, Lisbon, London
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

You don't often get email from littletonwindfarm@ftco.ie. Learn why this is important

Caution - This email originated from outside RTÉ. Do not click any link, do not open attachments unless you can confirm the sender and do not scan any QR codes in any emails.

Dear Sir/Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).
We are writing to all consultees again through this scoping update letter to invite you to comment on any additional technical issues that you feel should be considered in this EIAR, which will be prepared as part of the Proposed Littleton Wind Farm planning application process.
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It is intended to make a planning application directly to An Bord Pleanála under the Strategic Infrastructure Act 2006 (as amended)
This email and attached scoping report is being issued to you as part of the consultation process for the project's Environmental Impact Assessment Report (EIAR). As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development, relevant to your area of expertise. We respectfully ask that you forward all responses before the Friday the 25th

of April 2025 to provide adequate time to consider all material. Your response may be forwarded by email or by post to the address below.

By Email: *littletonwindfarm@ftco.ie*

By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Kind regards,

Niamh

Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9585
www.fehilytimoney.ie

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Cathal Creedon

From: Planning <planning@artscouncil.ie>
Sent: Thursday 8 May 2025 13:38
To: Littleton Wind farm
Subject: Automatic reply: Proposed Littleton Wind Farm Environmental Impact Assessment Report

Thank you,

We acknowledge receipt of your email.

The Arts Council / An Chomhairle Ealaíon respectfully request that the Planning Authority / Body ensures that it is **properly notifying** The Arts Council / An Chomhairle Ealaíon of planning applications (including receipt of further information):

1. Only when the planning application, as it appears to the planning authority, prescribes to the provisions of Article 28(1)(a) and (1)(c) of the Planning and Development Regulations 2001 (as amended); and

2. In the event of the above, any notification issued to The Arts Council / An Chomhairle Ealaíon adheres to the requirements of Article 28(2) of those Regulations; that **it shall receive a copy of the planning application form** and shall be **notified of the date of receipt** by that authority of the application.

3. The Arts Council / An Chomhairle Ealaíon does not accept that receipt of weekly 'Planning lists' as notification of new planning applications

4. We are currently not accepting submissions in hard copy.

To assist you in ensuring that relevant and appropriate submission are made the to the Arts Council, please see our website for further clarification. http://www.artscouncil.ie/Arts-in-Ireland/Strategic-development/Prescribed-Body---Planning/

Kind regards,

Planning Team

The Arts Council / An Chomhairle Ealaíon

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Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 14:45
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

---

From: Planning <planning@artscouncil.ie>
Sent: Thursday 8 May 2025 13:35
To: Niamh Curtin <niamh.curtin@ftco.ie>
Subject: Automatic reply: Proposed Littleton Wind Farm Environmental Impact Assessment Report

> You don't often get email from planning@artscouncil.ie. Learn why this is important

Thank you,

We acknowledge receipt of your email.

The Arts Council / An Chomhairle Ealaíon respectfully request that the Planning Authority / Body ensures that it is **properly notifying** The Arts Council / An Chomhairle Ealaíon of planning applications (including receipt of further information):

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Kind regards,

Planning Team

The Arts Council / An Chomhairle Ealaíon

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Cathal Creedon

From: Dawn Quinn <admin@batconservationireland.org>
Sent: Monday 12 May 2025 17:08
To: Littleton Wind farm
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

Thank you for your e-mail.

Unfortunately, as Bat Conservation Ireland is a very small organisation, with limited resources, we do not have the capacity to get involved in planning issues.

Please note that Bat Conservation Ireland is concerned that a request for our input/consultation/opinion/assistance on planning applications and reports, or objections/comments on same, can sometimes imply that we have been consulted for our opinion on planning matters when Bat Conservation Ireland does not, in fact, provide opinions or comments on developments. Therefore, please note that this response should not be construed as a consultation with Bat Conservation Ireland regarding any planning or development matter or proposal. In order to avoid misunderstandings, please do not use this terminology in your reports to describe this transaction.

Thank you for your understanding.

Yours sincerely

Dawn Quinn
Administrative Manager
Bat Conservation Ireland

Please note my workings days/hours as follows:
Monday *9am – 5.30pm* **|** ***Wednesday*** *9am – 5.30pm* **|** ***Friday*** *9am – 12.45pm*

Postal/Registered Address: Carmichael House, 4-7, North Brunswick Street, Dublin 7, D07 RHA8.
E-mail: admin@batconservationireland.org
Website: www.batconservationireland.org
Social Media: www.facebook.com/Bat-Conservation-Ireland **|** www.x.com/BatConservIre **|** www.instagram.com/batconservationireland/ **|** https://ie.linkedin.com/company/bat-conservation-ireland
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BAT CONSERVATION IRELAND



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From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Thursday 8 May 2025 13:28
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

Dear Sir/Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).
We are writing to all consultees again through this scoping update letter to invite you to comment on any additional technical issues that you feel should be considered in this EIAR, which will be prepared as part of the Proposed Littleton Wind Farm planning application process.
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By Email: *littletonwindfarm@ftco.ie*

By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

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Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 14:44
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

---

From: Roger Woods <rwoods@cnam.ie>
Sent: Thursday 8 May 2025 13:44
To: Niamh Curtin <niamh.curtin@ftco.ie>
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

> You don't often get email from rwoods@cnam.ie. Learn why this is important

Hi Niamh

Coimisiún na Meán does not perform an in-depth analysis of the effect of wind turbines or electrical sub stations on FM networks. However, we are not aware of any issues from existing windfarms or electrical sub stations into existing FM networks. Also, the proposed sub station is not located close to any existing or planned FM transmission sites.

Regards

Roger
Innealtóir Feidhmiúcháin Sinsearach | Senior Executive Engineer

T: +353 (0)1 644 1200 | rwoods@cnam.ie

Coimisiún na Meán

1 Áras Shíol Bhroinn, Bóthar Shíol Bhroinn, Baile Átha Cliath, D04 NP20, Éire.
1 Shelbourne Buildings, Shelbourne Road, Dublin, D04 NP20, Ireland.

Tá an ríomhphost seo agus aon iatán a ghabhann leis rúnda agus is leis an duine sin amháin a bhfuil siad seolta chuige/chuici a bhaineann siad. Muna duitse an ríomhphost seo, ní ceart é a léamh ná a scaoileadh chuig aon tríú páirtí. Iarrtar ort teachtaireacht a sheoladh chuig an seoltóir nó chuig info@cnam.ie, agus an ríomhphost seo a scrios.

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Déan machnamh ar an timpeallacht, le do thoil, roimh an ríomhphost seo a phriontáil.

Please consider the environment before printing this email.

From: Niamh Curtin <niamh.curtin@ftco.ie>
Sent: Thursday 8 May 2025 13:27
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

> You don't often get email from niamh.curtin@ftco.ie. Learn why this is important

Dear Sir/Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).
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By Email: *littletonwindfarm@ftco.ie*

By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9585
www.fehilytimoney.ie

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limited by shares. Registration No. 180497. Registered office: Core House, Pouladuff Road, Cork, Ireland

Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 14:44
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

---

From: Industry <industry@comreg.ie>
Sent: Thursday 8 May 2025 14:28
To: Niamh Curtin <niamh.curtin@ftco.ie>
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

> You don't often get email from industry@comreg.ie. Learn why this is important

[CONFIDENTIAL - EXTERNAL]

Hi Niamh,

I hope all is well.

For further information regarding your query, please visit ComReg's SiteViewer tool.

Kind regards,
Clodagh

From: Niamh Curtin <niamh.curtin@ftco.ie>
Sent: Thursday 8 May 2025 13:27
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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Niamh Curtin
Administrator

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GDPR information: we have updated our Privacy Notice, which explains what personal information we collect and use about individuals, what we do with it and why. Here is a link to our updated Privacy Notice:
https://scanner.topsec.com/?d=2349&r=show&u=https%3A%2F%2Fwww.comreg.ie%2Fprivacy%2F&t=031914f05620f804e1c8d6ac9579eab7b072b96d

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Faisnéis GDPR: tá nuashonrú déanta againn ar ár bhFógra Príobháideachta, a mhíníonn an fhaisnéis phearsanta a bhailímid agus a úsáidimid faoi dhaoine aonair, an méid a dhéanaimid leis agus cén fáth. Seo nasc chuig ár bhFógra Príobháideachta nuashonraithe: https://scanner.topsec.com/?d=2349&r=show&u=https%3A%2F%2Fwww.comreg.ie%2Fprivacy%2F&t=031914f05620f804e1c8d6ac9579eab7b072b96d

Tá an ríomhphost seo, chomh maith le haon iatáin a bhaineann leis faoi rún agus d'fhéadfadh leis a bheith faoi phribhléid nó cosanta ó aon nochtadh. Is don seolaí(aithe) ainmnithe thuas amháin é. Níl sé ceadaithe go mbeidh rochtain ag éinne eile ar an ríomhphost seo. Más rud é nach tusa an faighteoir ainmnithe, ná cló amach, léigh, cóipeáil, nocht d'éinne nó bain úsáid as an eolas sa ríomhphost seo in aon tslí eile, le do thoil. Más rud é go bhfuair tú an ríomhphost seo trí earráid, dean teagmháil leis an seoltóir láithreach agus scrios an t-ábhar ina iomlán, bíodh sé i gcóip leictreonach nó chrua.

Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 14:43
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

---

From: Bagnall, John <john.bagnall@eir.ie>
Sent: Thursday 8 May 2025 14:04
To: Niamh Curtin <niamh.curtin@ftco.ie>
Cc: mobilenetworkstxn <mobilenetworkstxn@eir.ie>
Subject: Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report

You don't often get email from john.bagnall@eir.ie. Learn why this is important

Hi Nimah,

Eir still have the four links traversing the area no new additional link, the four links will need a buffer zone surrounding them to be avoided.

Link ID	Band	Site A			Site B		
		Lat	Long	Ant Height	Lat	Long	Ant
TY_4700-TY_2484	11Ghz	52°36'33.24"N	7°37'26.22"W	30m	52°40'48.03"N	7°49'4.87"W	22m
TY_2332-TY_4700	13Ghz	52°36'52.47"N	7°46'32.08"W	14m	52°36'33.24"N	7°37'26.22"W	31m
TY_2484-TY_1918	11Ghz	52°40'48.03"N	7°49'4.87"W	25m	52°34'54.49"N	7°40'15.46"W	27m
RSY-GCL	13Ghz	52°41'1.02"N	7°58'17.04"W	10m	52°36'33.72"N	7°37'25.43"W	30m

Kind regards,

John Bagnall

Wireless Transmission Engineer

M: +353 85 1053746

E: john.bagnall@eir.ie

Address: EirCode - D08 Y42N

From: Niamh Curtin <niamh.curtin@ftco.ie>
Sent: 08 May 2025 13:26
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

Some people who received this message don't often get email from niamh.curtin@ftco.ie. Learn why this is important

Dear Sir/Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).
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By Email: *littletonwindfarm@ftco.ie*

By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

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Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

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Cathal Creedon

From: Info - EirGrid <Info@Eirgrid.com>
Sent: Thursday 8 May 2025 13:36
To: Littleton Wind farm
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

Hi Niamh,

Hope you are well!

I have sent this on to the concern department and they will reach out to you.

Kind regards,

Customers & Connections

EirGrid.com

The Oval
160 Shelbourne Rd
Ballsbridge
Dublin 4
D04 FW28

We're working flexibly at EirGrid Group.
I'm sending this message at a time that suits me.
Please feel comfortable knowing that I don't expect you to read, respond to or action it outside of regular working hours.

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Thursday 8 May 2025 13:28
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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Dear Sir/Madam,

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Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

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EirGrid plc - Transmission System Operator, Ireland.
The Oval, 160 Shelbourne Road, Ballsbridge, Dublin 4, D04 FW28.

Oibritheoir Eangach Leictreachais na hÉireann.
160 Bóthar Shíol Bhroin, Droichead na Dothra, Baile Átha Cliath 4, D04 FW28.

Registered Office

The Oval, 160 Shelbourne Road, Ballsbridge, Dublin 4, D04 FW28.
Registered in Ireland No. 338522 V.A.T. No. IE 6358522H
TELEPHONE + 353 (0)1 677 1700
EMAIL info@eirgrid.com
FAX + 353 (0)1 661 5375
WEB
https://scanner.topsec.com/?d=2349&r=show&u=www.eirgrid.com&t=8a755d3b21082a6e74325a2c4ef9b5958411eeb4

Chief Executive:
Cathal Marley
Directors:
Brendan Tuohy CHAIR,
Dr Theresa Donaldson, Tom Coughlan, Michael Hand, James Nyhan, Rosa M. Sanz García (Spain), Ivan Schuster, Pauline Walsh, Deirdre Merriman **********

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Séanadh:

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****

Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 16:28
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

---

From: Peter O`Brien <peter.obrien@enet.ie>
Sent: Thursday 8 May 2025 15:21
To: Niamh Curtin <niamh.curtin@ftco.ie>
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

Hi Niamh,

Could you send the turbine locations on Google Earth kml file please so that I can clash against our network?

Thanks,
Peter

Peter O`Brien | Licensed Link planner
A: Enet House, National Technology Park, Castletroy, Co Limerick, V946P52
M: +353867744313 | **W:** www.enet.ie



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enet is a registered business name of e-nasc éireann teoranta



From: Niamh Curtin <niamh.curtin@ftco.ie>
Sent: Thursday, May 8, 2025 1:27 PM
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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Cathal Creedon

From: Wexford Receptionist <REC_WEX@epa.ie>
Sent: Thursday 8 May 2025 16:53
To: Littleton Wind farm
Subject: Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report

> You don't often get email from rec_wex@epa.ie. Learn why this is important

A Chara,

Your correspondence on 08/05/2025 has been forwarded for attention. Tá do chomhfhreagras 08/05/2025 seolta ar aghaidh le haghaidh aird.

Le gach dea-ghuí

Grace Marshall
Duty Receptionist I Facililty Mangement & Sustainability
Office of Communications and Corporate Services, Wexford
Fáilteoir ar Dualgas I Foireann Seirbhísí Eagraíochtúla
An Oifig Cumarsáide agus Seirbhísí Corparáideacha,Loch Garman

Environmental Protection Agency

053-9160600 (Direct dial)
info@epa.ie
www.epa.ie

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Thursday, May 8, 2025 13:27
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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Cathal Creedon

From: ESB Networks Customer Service (ESB Networks) <esbnetworks@esb.ie>
Sent: Thursday 8 May 2025 13:30
To: Littleton Wind farm
Subject: Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report [# 1228016]

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Le cúnamh a fháil láithreach le cásanna contúirteacha nó le gearrthacha cumhachta, iarrtar ort glao a chur ar 1800 372 999 nó +353 21 238 2410.
Go Raibh Maith Agat

Thank you for contacting ESB Networks. We have received your email and appreciate you reaching out to us. Our team is currently reviewing your message and will respond to you as soon as possible.
For immediate assistance with dangerous situations or supply interruptions, please call 1800 372 999 or +353 21 238 2410.
Thank You

ESB Networks Customer Care | T: 1800 372 757 | +353 21 2386555 | www.esbnetworks.ie

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Dear Sir/Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).
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It is intended to make a planning application directly to An Bord Pleanála under the Strategic Infrastructure Act 2006 (as amended)
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By Email: *littletonwindfarm@ftco.ie*

By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9585
www.fehilytimoney.ie

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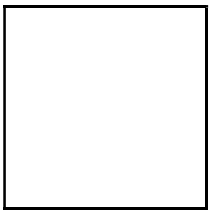
* ** *** ** * ** *** ** * ** *** ** *
Tá an t-eolas sa ríomhphost seo agus in aon chomhad a ghabhann leis rúnda agus ceaptha le haghaidh úsáide an té nó an aonáin ar seoladh chuige iad agus na húsáide sin amháin.
Is tuairimí nó dearcthaí an údair amháin aon tuairimí nó dearcthaí ann, agus ní gá gurb ionann iad agus tuairimí nó dearcthaí ESB.
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* ** *** ** * ** *** ** * ** *** ** *

Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 14:45
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report [# 1228014]

From: ESB Networks Customer Service (ESB Networks) <esbnetworks@esb.ie>
Sent: Thursday 8 May 2025 13:29
To: Niamh Curtin <niamh.curtin@ftco.ie>
Subject: Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report [#1228014]



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Go Raibh Maith Agat

Thank you for contacting ESB Networks. We have received your email and appreciate you reaching out to us. Our team is currently reviewing your message and will respond to you as soon as possible.
For immediate assistance with dangerous situations or supply interruptions, please call 1800 372 999 or +353 21 238 2410.
Thank You

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Dear Sir/Madam,

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By Email: *littletonwindfarm@ftco.ie*

By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9585
www.fehilytimoney.ie

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haghaidh úsáide an té nó an aonáin ar seoladh chuige iad agus na húsáide sin amháin.
Is tuairimí nó dearcthaí an údair amháin aon tuairimí nó dearcthaí ann, agus ní gá gurb ionann iad agus tuairimí nó dearcthaí ESB.
Má bhfuair tú an ríomhphost seo trí earráid, ar mhiste leat é sin a chur in iúl don seoltóir.
Scanann ESB ríomhphoist agus ceangaltáin le haghaidh víreas, ach ní ráthaíonn sé go bhfuil ceachtar díobh saor ó víreas agus ní glacann dliteanas ar bith as aon damáiste de dhroim víreas.
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* ** *** ** * ** *** ** * ** *** ** *

Cathal Creedon

From: planning applications <planning.applications@failteireland.ie>
Sent: Wednesday 28 May 2025 14:34
To: Littleton Wind farm
Subject: Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report
Attachments: Fáilte Ireland EIAR Guidelines 2023.pdf

Hello Niamh,

Thank you for your email and information relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).

Fáilte Ireland Under the EU Just Transition Fund, has been tasked with the administration of funds for a Regenerative Tourism and Placemaking Scheme 2023-2026. We are working with partners to enhance the visitor experience in the Midlands area to develop a sustainable tourism offering in the Midlands, with a tourism trail network of off-road trails which will enable local people and visitors to explore the midlands region by bike, e-bike and on foot. The network will connect rural settlements to open spaces, traversing peatlands, waterways and other habitats and linking to heritage sites and visitor attractions. A planning application has been lodged with Tipperary County Council (Ref: 25/60154) for a recreational shared cycle and walkway trail and is currently progressing through the planning system. We would ask you to consider any potential impacts that the proposed wind farm could directly or indirectly affect tourism/ recreational activity or an amenity in the area.

Please see attached a copy of Fáilte Ireland's Guidelines for the Treatment of Tourism in an EIA, which you may find informative for the preparation of the Environmental Impact Assessment for the proposed project. The purpose of this report is to provide guidance for those conducting Environmental Impact Assessment and compiling an Environmental Impact Assessment Reports (EIAR), or those assessing EIARs, where the project involves tourism or may have an impact upon tourism. These guidelines are non-statutory and act as supplementary advice to the EPA EIAR Guidelines outlined in section 2.

Also, see link to the 'Midlands Trail Network Tool Kit', this toolkit was developed by Fáilte Ireland in conjunction with Bord Na Móna and relevant stakeholders to inform the long term planning and development, up to including 2030, of a sustainable recreation trail network for tourism in the Midlands of Ireland. Midlands Trail Network Toolkit by DiscoverIreland - Issuu

Regards,

Yvonne

Yvonne Jackson
Product Development-Environment & Planning Support | Fáilte Ireland

88-95 Amiens Street, Dublin 1, D01 WR86
M +353 (0)86 0357590



LinkedIn | Twitter | YouTube | Facebook



From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Thursday, May 08, 2025 13:27
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

[AIRE] Tháinig an teachtaireacht seo ó lasmuigh de Fáilte Ireland. Bí cúramach le hipearnasc, le ceangaltáin agus le treoracha sa ríomhphost seo.
[ATTENTION] This message originated from outside of Fáilte Ireland. Please treat hyperlinks, attachments and instructions in this email with caution.

Dear Sir/Madam,

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By Email: *littletonwindfarm@ftco.ie*

By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9585
www.fehilytimoney.ie

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Cathal Creedon

From: DIG <Dig@gasnetworks.ie>
Sent: Wednesday 21 May 2025 14:42
To: Littleton Wind farm
Cc: Process Safety
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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Niamh

This project does not concern GNI as we have no network near it, unless you go with the alternative Grid Route to Ballyragget where it could impact the high pressure pipeline.
Can you advise GNI if the alternative Grid Route is used.

Regards

Michael O Connell
GIS Super User
Gas Networks Ireland
P.O. Box 51,Gasworks Road, Cork, Ireland

M 087 3833858

From: Networksinfo <Networksinfo@gasnetworks.ie>
Sent: Thursday 8 May 2025 14:49
To: DIG <Dig@gasnetworks.ie>
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Thursday 8 May 2025 13:28
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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Dear Sir/Madam,

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By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

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Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
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Tá an fhaisnéis á seachadadh dírithe ar an duine nó ar an eintiteas chuig a bhfuil sí seolta amháin agus féadfar ábhar faoi rún, faoi phribhléid nó ábhar atá íogair ó thaobh tráchtála de a bheith mar chuid de. Tá aon athsheachadadh nó scaipeadh den fhaisnéis, aon athbhreithniú ar nó aon úsáid eile a bhaint as, nó aon ghníomh a dhéantar ag brath ar an bhfaisnéis seo ag daoine nó ag eintitis nach dóibh siúd an fhaisnéis seo, toirimiscthe agus féadfar é a bheith neamhdhleathach. Níl Líonraí Gáis Éireann faoi dhliteanas maidir le seachadadh iomlán agus ceart na faisnéise sa

chumarsáid seo nó maidir le haon mhoill a bhaineann léi. Ní ghlacann Líonraí Gáis Éireann le haon dliteanas faoi ghnímh nó faoi iarmhairtí bunaithe ar úsáid thoirmiscthe na faisnéise seo. Níl Líonraí Gáis Éireann faoi dhliteanas maidir le seachadadh ceart agus iomlán na faisnéise sa chumarsáid seo nó maidir le haon mhoill a bhaineann léi. Má fuair tú an teachtaireacht seo in earráid, más é do thoil é, déan teagmháil leis an seoltóir agus scrios an t-ábhar ó gach aon ríomhaire.
Féadfar ríomhphost a bheith soghabhálach i leith truaillithe, idircheaptha agus i leith leasaithe neamhúdaraithe. Ní ghlacann Líonraí Gáis Éireann le haon fhreagracht as athruithe nó as idircheapadh a rinneadh ar an ríomhphost seo i ndiaidh é a sheoladh nó as aon dochar do chórais na bhfaighteoirí déanta ag an teachtaireacht seo nó ag a ceangaltáin. Más é do thoil é, tabhair faoi deara chomh maith go bhféadfar monatóireacht a dhéanamh ar theachtaireachtaí chuig nó ó Líonraí Gáis Éireann chun comhlíonadh le polasaithe agus le caighdeáin Líonraí Gáis Éireann a chinntiú agus chun ár ngnó a chosaint. Líonraí Gáis Éireann cuideachta ghníomhaíochta ainmnithe, faoi theorainn scaireanna, atá corpraithe in Éirinn leis an uimhir chláraithe 555744 agus a tá hoifig chláraithe ag Bóthar na nOibreacha Gáis, Corcaigh, T12 RX96.

Go raibh maith agat as d'aird a thabhairt.

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Thank you for your attention.

Cathal Creedon

From: IAA INFORMATION <iaainfo@IAA.ie>
Sent: Thursday 8 May 2025 13:30
To: Littleton Wind farm
Subject: Automatic reply: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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Thank you for contacting the Irish Aviation Authority.
Your Email has passed to the relevant section.

For further information on how to contact us, please visit our website :
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Kind regards,
Irish Aviation Authority

Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 14:46
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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From: IAA INFORMATION <iaainfo@IAA.ie>
Sent: Thursday 8 May 2025 13:28
To: Niamh Curtin <niamh.curtin@ftco.ie>
Subject: Automatic reply: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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For further information on how to contact us, please visit our website :
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Kind regards,
Irish Aviation Authority

Cathal Creedon

From: David MCCANN <David.McCann@IAA.ie>
Sent: Monday 12 May 2025 11:50
To: Littleton Wind farm
Cc: Planning; IAA INFORMATION
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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Dear Niamh,

Thank you for your request for consultation in relation to the proposed wind farm containing eleven (11) wind turbines (max tip height of 200m) to be located at Littleton, East County Tipperary.

The IAA recommends that the developer engage directly with the Property Management Branch of the Department of Defence and Air Navigation Service Provider Air Nav Ireland to make them aware of the proposal and ensure appropriate screening from an aviation safety perspective.
Email address for Air Nav Ireland is as follows: planning@airnav.ie

It is likely that the following general observations would be proffered by the Authority during a formal planning process: In the event of planning consent being granted, the applicant should be conditioned to contact the Irish Aviation Authority to: (1) agree an aeronautical obstacle warning light scheme for the wind farm development, (2) provide as-constructed coordinates in WGS84 format together with ground and blade tip height elevations at each wind turbine location and (3) notify the Authority of intention to commence crane operations with at least 30 days prior notification of their erection in accordance with S.I. 215 of 2005 Irish Aviation Authority (Obstacles to Aircraft In Flight) Order.

If you have any further queries, please email planning@iaa.ie

Kind regards,

Dave

From: IAA INFORMATION <iaainfo@IAA.ie>
Sent: Thursday, May 8, 2025 1:53 PM
To: Planning <planning@iaa.ie>
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Thursday 8 May 2025 13:28
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

*** This message originated from outside the Irish Aviation Authority. Please treat hyperlinks, attachments and instructions in this email with caution. ***

Dear Sir/Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).

We are writing to all consultees again through this scoping update letter to invite you to comment on any additional technical issues that you feel should be considered in this EIAR, which will be prepared as part of the Proposed Littleton Wind Farm planning application process.
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By Email: *littletonwindfarm@ftco.ie*

By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9585
www.fehilytimoney.ie

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==========

Cathal Creedon

From: Ronnie O'Neill <Ronnie.ONeill@imaginegroup.ie>
Sent: Friday 9 May 2025 09:25
To: Littleton Wind farm
Subject: Re: Proposed Littleton Wind Farm Environmental Impact Assessment Report

Hi Niamh ,

This will not pose an issue for Imagine .

Rgds,
Ronnie .

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: Thursday, 8 May 2025 13:27
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

This email originated outside of the organisation - please exercise caution when opening attachments or clicking links.

Dear Sir/Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).
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By Email: *littletonwindfarm@ftco.ie*

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Kind regards,

Niamh

Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9585
www.fehilytimoney.ie

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Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 14:45
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

---

From: Met Eireann <met.eireann@met.ie>
Sent: Thursday 8 May 2025 13:30
To: Niamh Curtin <niamh.curtin@ftco.ie>
Subject: Automatic reply: Proposed Littleton Wind Farm Environmental Impact Assessment Report

Thank you for your email, due to the large volume of emails received into this account, it can take up to 2 weeks to respond.
I endeavor to answer your email as quickly as possible. I thank you for your patience.
If your query is in relation to a legal report, please email: legal@met.ie
Regards,
Annmarie Woods
Customer Liaison Officer
https://scanner.topsec.com/?d=2349&r=show&u=www.met.ie&t=a5671cc009d0edd8f7673492b175c5ca6c786582.

Go raibh maith agat as do r-phost. Mar gheall ar líon mór ríomhphoist a fhaightear isteach sa chuntas seo, d'fhéadhfadh sé suas le 2 sheachtain a thógáil freagra a thabhairt. Déanaim iarracht do r-phoist a fhreagairt chomh tapa agus is féidir. Gabhaim buíochas leat as do chuid foighne.
Má bhaineann do cheist le tuarascáil dlí, seol ríomhphost chuig: legal@met.ie go díreach.
Is mise le meas.
AineMaire Conchoille
Oifigeach Idirchaidrimh le Custaméirí
https://scanner.topsec.com/?d=2349&r=show&u=www.met.ie&t=a5671cc009d0edd8f7673492b175c5ca6c786582

Cathal Creedon

From: Met Eireann <met.eireann@met.ie>
Sent: Thursday 8 May 2025 13:29
To: Littleton Wind farm
Subject: Automatic reply: Proposed Littleton Wind Farm Environmental Impact Assessment Report

Thank you for your email, due to the large volume of emails received into this account, it can take up to 2 weeks to respond.
I endeavor to answer your email as quickly as possible. I thank you for your patience.
If your query is in relation to a legal report, please email: legal@met.ie
Regards,
Annmarie Woods
Customer Liaison Officer
https://scanner.topsec.com/?d=2349&r=show&u=www.met.ie&t=a5671cc009d0edd8f7673492b175c5ca6c786582.

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Má bhaineann do cheist le tuarascáil dlí, seol ríomhphost chuig: legal@met.ie go díreach.
Is mise le meas.
AineMaire Conchoille
Oifigeach Idirchaidrimh le Custaméirí
https://scanner.topsec.com/?d=2349&r=show&u=www.met.ie&t=a5671cc009d0edd8f7673492b175c5ca6c786582

Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 14:46
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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From: Skydive Club <info@skydiveclub.ie>
Sent: Thursday 8 May 2025 13:27
To: Niamh Curtin <niamh.curtin@ftco.ie>
Subject: Automatic reply: Proposed Littleton Wind Farm Environmental Impact Assessment Report

> You don't often get email from info@skydiveclub.ie. Learn why this is important

The Club was granted permission by the High Court to issue legal proceedings against Irish Aviation Authority due to ongoing regulatory interference.

Due to this ongoing interference by Irish Aviation Authority, all skydiving flights and bookings for Club members is suspended. All applications for new Club membership is also suspended.

That legal process is pending before the Courts and it is unknown at this time when it will be concluded. The Club office is closed and it is simply not possible to response to individual queries at this time.

Further details and updates are published here: www.skydiveclub.ie/booking

All Club members are affected by this matter. The Club hopes to resume its flying activities as soon as possible.

The future survival of the Club depends on our members support during this extremely difficult time.

Kind Regards,

Irish Skydiving Club
www.skydiveclub.ie

Cathal Creedon

From: Customer Service Desk <customerservices@tipperarycoco.ie>
Sent: Thursday 8 May 2025 14:20
To: Littleton Wind farm
Subject: Customer Service Desk: Proposed Littleton Wind Farm Environmental Impact Assessment Report : Case No: T-272136-N1D7 CRM:00673001920

Dear Niamh

Thank you for your e-mail regarding **" Proposed Littleton Wind Farm Environmental Impact Assessment Report "**

I have forwarded your e-mail to the Environment Section for their attention and direct reply to you. Should you wish to follow up on this case, please contact Customer Service Desk quoting reference number **T-272136-N1D7**

Regards,
Customer Service Desk,
Tipperary County Council,
Civic Offices, Clonmel / Civic Offices, Nenagh,
Co. Tipperary.

Phone: 0818 06 5000
E-mail: customerservice@tipperarycoco.ie
Tipperary County Council Disclaimer
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Cathal Creedon

From: Planning Group <planning@tipperarycoco.ie>
Sent: Friday 9 May 2025 10:38
To: Littleton Wind farm
Subject: RE: [External] Proposed Littleton Wind Farm Environmental Impact Assessment Report

Dear Niamh

I wish to acknowledge receipt of your email and advise that I have forwarded it to the relevant section, please use planning@tipperarycoco.ie to send any further queries in relation to this matter.

Kind Regards

Claire Cooney,
A/Assistant Staff Officer, Planning
Civic Offices, Clonmel, Co. Tipperary.
Telephone: 0818 06 5000
E-mail: planning@tipperarycoco.ie
Website: www.tipperarycoco.ie

Comhairle Contae Thiobraid Árann
Tipperary County Council

TIPPERARY THE PLACE, THE TIME

From: Littleton Wind farm <littletonwindfarm@ftco.ie>
Sent: 08 May 2025 13:28
Subject: [External] Proposed Littleton Wind Farm Environmental Impact Assessment Report

CAUTION FROM TIPPERARY COUNTY COUNCIL IT SECTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Sir/Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).
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By Email: *littletonwindfarm@ftco.ie*

By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

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Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9585
www.fehilytimoney.ie

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Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 14:44
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

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From: Monika Biniaszewska <Monika.Biniaszewska@three.ie>
Sent: Thursday 8 May 2025 13:53
To: Niamh Curtin <niamh.curtin@ftco.ie>
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

> You don't often get email from monika.biniaszewska@three.ie. Learn why this is important

Hi Niamh,

Can you send a KMZ file or preliminary turbines coordinates please.

Thanks
Monika

From: Niamh Curtin <niamh.curtin@ftco.ie>
Sent: Thursday 8 May 2025 13:27
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

> You don't often get email from niamh.curtin@ftco.ie. Learn why this is important

CAUTION! External Email.

Dear Sir/Madam,

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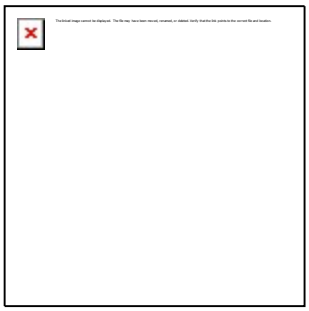
By Email: *littletonwindfarm@ftco.ie*

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Kind regards,

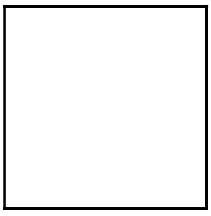
Niamh



Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9585
www.fehilytimoney.ie

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Cathal Creedon

From: Info
Sent: Thursday 8 May 2025 15:00
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

---

From: Adrian Carroll <Adrian.Carroll@viatel.com>
Sent: Thursday 8 May 2025 14:55
To: Niamh Curtin <niamh.curtin@ftco.ie>
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

> You don't often get email from adrian.carroll@viatel.com. Learn why this is important

Hi Niamh,

This development won't impact our network

PUBLIC

Adrian Carroll
Southern RF Ops Manager
P:+353 (0)86 8372264 **E:** Adrian.Carroll@viatel.com

What we do exceptionally well at Viatel Technology Group:

Cybersecurity | Cloud | Networks & Communications | Microsoft Solutions | IT Services



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PUBLIC

From: Niamh Curtin <niamh.curtin@ftco.ie>
Sent: 08 May 2025 13:27
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

> Some people who received this message don't often get email from niamh.curtin@ftco.ie. Learn why this is important

Dear Sir/Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm as part of the technical consultation process for the project's Environmental Impact Assessment Report (EIAR).
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Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

Fehily Timoney and Company
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limited by shares. Registration No. 180497. Registered office: Core House, Pouladuff Road, Cork, Ireland

Cathal Creedon

From: Info
Sent: Monday 19 May 2025 09:05
To: Littleton Wind farm
Subject: FW: Proposed Littleton Wind Farm Environmental Impact Assessment Report

---

From: Keiran Butler <Keiran.Butler@virginmedia.ie>
Sent: Wednesday 14 May 2025 11:57
To: Niamh Curtin <niamh.curtin@ftco.ie>
Cc: mark.nolan@virginmedia.ie
Subject: RE: Proposed Littleton Wind Farm Environmental Impact Assessment Report

Hi Niamh

Can you pleas send me a KML of the area of concern and I can check if we have any radio links crossing
At a quick look we might have one link. But if you send a KML I can see if it is when I overlay it

And get back to you then

Regards
Keiran Butler

From: Niamh Curtin <niamh.curtin@ftco.ie>
Sent: Thursday 8 May 2025 13:27
Subject: Proposed Littleton Wind Farm Environmental Impact Assessment Report

You don't often get email from niamh.curtin@ftco.ie. Learn why this is important

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Dear Sir/Madam,

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We are writing to all consultees again through this scoping update letter to invite you to comment on any additional technical issues that you feel should be considered in this EIAR, which will be prepared as part of the Proposed Littleton Wind Farm planning application process.
Littleton Wind Farm DAC intend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm, located in East County Tipperary, approximately 3km east of the village of Littleton and 10km east of Thurles. The proposed development is located on a bog group consisting of the Longford Pass, Littleton and Lanespark Bogs.
It is intended to make a planning application directly to An Bord Pleanála under the Strategic Infrastructure Act 2006 (as amended)
This email and attached scoping report is being issued to you as part of the consultation process for the project's Environmental Impact Assessment Report (EIAR). As part of the consultation process, we would be interested in receiving any comments you may have on the proposed development, relevant to your area of expertise. We respectfully ask that you forward all responses before the Friday the 25th

of April 2025 to provide adequate time to consider all material. Your response may be forwarded by email or by post to the address below.

By Email: *littletonwindfarm@ftco.ie*

By Post: *Littleton Wind Farm, Fehily Timoney & Company, Core House, Pouladuff Road, County Cork, T12 D773*

If you have no comments to make on the proposed project, I would be grateful if you would please acknowledge receipt of this correspondence. If you have any further queries regarding the project, please contact the undersigned.

Kind regards,

Niamh

FEHILY TIMONEY

Niamh Curtin
Administrator

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 21 496 9585
www.fehilytimoney.ie

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Cathal Creedon

From: Trevor Byrne
Sent: Wednesday 11 June 2025 15:00
To: Littleton Wind farm
Cc: Conor Auld; Anthony Ryan
Subject: FW: Webform submission from: Pre-Planning Application Form
Attachments: P20_211_GIS_INFO_Proposed Site Location Map.pdf

FYI

FEHILY TIMONEY

Trevor Byrne
Associate Director

Fehily Timoney and Company
Core House, Pouladuff Road, Cork, T12 D773
t: +353 83 830 7620
www.fehilytimoney.ie

From: Tipperary County Council - Consultation Portal <socialmedia@tipperarycoco.ie>
Sent: Wednesday 11 June 2025 08:25
To: Trevor Byrne <trevor.byrne@ftco.ie>
Subject: Webform submission from: Pre-Planning Application Form

You don't often get email from socialmedia@tipperarycoco.ie. Learn why this is important

Dear Littleton Wind Farm DAC ,

Thank you for your pre-planning application.
Your submission has been sent to the Tipperary County Counicl Pre-planing team and will be reviewed.
Below you will find a copy of th information you submitted for your records.

Submitted on: Wed, 11/06/2025 - 08:23

Submitted by: Anonymous

Submitted values are:

Name of Applicant
Littleton Wind Farm DAC

Address of Applicant
Coom Green Energy Park Grid Connection,
Fehily Timoney and Company, Core House, Pouladuff Road,
Cork. T12 D773
Ireland

Phone of Applicant
021 496 4133

Email of Applicant
trevor.byrne@ftco.ie

Name of Landowner
Various

Address of Landowner
N/A
N/A
N/A. N/A

Phone of Landowner
N/A

Applicant Legal Interest to the site
Legal agreements are in place between Littleton Wind Farm DAC and the relevant landowners.

Nature and Extent of Proposed Development
Proposed development of 11 no. wind turbines, 110kV on-site substation and associated underground connection to the national grid.

Location of Development
The proposed wind farm development is located on a bog group consisting of the following townlands: Longford Pass, Littleton and Lanespark Bogs, and includes lands contained within the following townlands: Longfordpass North, Kilmakill, Longfordpass East, Longfordpass South, Leigh, Bawnreagh, Clonoura, Noard, Derryhogan, Derryvella, Ballybeg, Lanespark and Killeen, County Tipperary.

The proposed underground grid connection route option for the wind farm's connection to the national electricity grid will be within county Tipperary: Longfordpass East, Graiguepadeen, Longfordpass North, Fennor and Longfordpass South.

Eircode or nearest property if available
N/A

Current or previous Planning References (if any)
N/A

Site Location Map
P20_211_GIS_INFO_Proposed Site Location Map.pdf (2.5 MB)

Webfrom Submission ID: 4476

Conor Auld

From: Cunniffe, Sean <Sean.Cunniffe@sse.com>
Sent: Tuesday 16 December 2025 14:48
To: Defence Property Management Planning
Cc: Burke, Laura; Donnelly, Caroline; Muriel Ennis
Subject: Littleton Wind Farm meeting request

Good afternoon Phil,

Would it be possible to provide some potential dates for a virtual meeting to discuss the aviation impacts of the proposed Littleton Wind Farm (to be delivered as part of the SSE-BnM Joint Venture)?

The context of the proposed site is provided below:

Site	Area opposed by the Air Corps	DoD critical Low-Level route (3NM road buffer)	DoD Notification Area	DOD Low Flying Area MLFA Athy	Aviation Issues	Affected MW	Maximum tip height	Average Site Reduced Level (AOD)	Maximum Tip Height Reduced Level Feet (AOD)	Planning submission date	Construction start date	Operational start date	Turbine rotor diameter - ranges considered (m)	Status of statuatory scoping
Littleton	Partially	Yes	No	No	ALL Turbines are within DOD buffer for Critical Low-Level Routes (M8 Motorway). Site adjacent to area opposed by Air Corps.	79.20	200m, (656ft)	123m (403ft)	1059ft	Q1 2026	Q4 2028	Q2 2030	162-172	Statutory scoping issued 2021 and re-issued in 2025 by Fehily Timoney & Company

The Proposed Wind Farm Project is located in Co. Tipperary. The town of Thurles is located approximately 9km to the west of the Site. A KMZ file and shapefile of all the Project 30 turbines was sent to the DoD on in August 25 - please let me know if any further assistance is required in terms of accessing or interpreting the relevant spatial data.

Many thanks,

Sean

Seán Cunniffe

Consents Strategy Manager

e: sean.cunniffe@sse.com

Red Oak South, South County Business Park, Leopardstown, Dublin, Ireland, D18 W688

www.sse.com

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From:	Conor Auld
To:	manager.dau@housing.gov.ie; nationalmonuments@housing.gov.ie
Cc:	Trevor Byrne
Subject:	Proposed Littleton Wind Farm - National Monuments Service
Date:	Wednesday 10 December 2025 16:34:40
Attachments:	image001.png image002.png image005.png image006.png P20211-FT-XX-XX-LT-AT-0002_Littleton Wind Farm_NMS Letter.pdf image004.png 09a77e8e-ed76-47e3-a10b-76b2e1917da5.png

---

Dear Sir, Madam,

Fehily Timoney and Company are acting on behalf of our client, Littleton Wind Farm DAC (part of a 50:50 joint venture between BnM and SSE Renewables), in relation to a proposed wind farm development at Littleton, Co. Tipperary.

As part of the EIA scoping process we had previously reached out to the National Monuments Service in September 2021 and May 2025, to date no response has been received.

As our client is intending to lodge the application for permission with An Coimisiún Pleanála in early March 2026, we are contacting the National Monuments Service to inform them of the proposed development and to arrange a meeting to discuss if deemed necessary.

Please see attached a letter with details of this proposed wind farm.

Please do not hesitate to contact us if you have further queries, if possible by 23rd January 2026. We would welcome the opportunity to meet to discuss the proposed development in more detail, ahead of finalising the EIAR and submitting the planning application.

Kind regards,

Conor Auld
Principal Planner
Unit 3/4, Northwood House, Northwood Crescent, Northwood, Dublin, D09 X899
T: +353 (0)1 658 3500
fehilytimoney.ie

Project of the Year 2025

Best International Project of the Year 2025

From: Conor Auld
To: planning@airnav.ie
Cc: Trevor Byrne; Anthony Ryan
Subject: RE: Proposed Littleton Wind Farm EIAR
Date: Thursday 11 December 2025 12:51:53
Attachments: image001.png
image002.png
image005.png
image006.png
image007.png
AB - 24.03.25 Littleton Wind Farm - Aviation Review Statement Rev 1.0.pdf
image009.png
aa11de0e-0740-4d58-9283-1ce3bf849b51.png

Dear Sir, Madam,

In addition to the below, please see attached an Aviation Review Statement which was commissioned from AI Bridges by our client.

Note that this included some lands that ultimately will not be included in the application, but we feel this will include some useful information on the site in general from an aviation point of view.

Kind regards,

Conor Auld
Principal Planner
Unit 3/4, Northwood House, Northwood Crescent, Northwood, Dublin, D09 X899
T: +353 (0)1 658 3500
fehilytimoney.ie

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From: Conor Auld
Sent: Thursday 11 December 2025 11:58
To: planning@airnav.ie
Cc: Trevor Byrne <trevor.byrne@ftco.ie>; Anthony Ryan <anthony.ryan@ftco.ie>
Subject: Proposed Littleton Wind Farm EIAR

Dear Sir, Madam,

We are writing to you on behalf of our client, Littleton Wind Farm DAC, to request your feedback relating to the Proposed Littleton Wind Farm. Following EIA Scoping with the IAA it was suggested that we contact Air Nav Ireland regarding a proposed 11 turbine wind farm in County Tipperary to make you aware of the proposal and ensure appropriate screening from an aviation safety perspective.

The following are the proposed turbine specifications:

- blade tip height of 200 m,
- hub height of 119 m, and
- a rotor diameter of 162 m.

WTG ID	ITM Easting	ITM Northing

T01	624044	657148
T02	623721	656639
T03	623595	656033
T04	623023	656034
T05	622809	655374
T06	623461	655081
T07	622465	654873
T08	623020	654421
T09	620928	651759
T10	621249	651425
T11	621455	651016

Attached are shapfiles of the turbine locations, site boundary and met mast location.

It is our client's intention to submit this application to An Coimisiún Pleanála in early March 2026. Please do not hesitate to contact us at if you have further queries. We would welcome the opportunity to meet to present the proposed development in more detail (in January 2026 at the latest) ahead of finalising the EIAR.

Kind regards,

Conor Auld
Principal Planner
Unit 3/4, Northwood House, Northwood Crescent, Northwood, Dublin, D09 X899
T: +353 (0)1 658 3500
fehilytimoney.ie

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Report

Littleton Wind Farm

Aviation Review Statement

Document Number:	001/BN/0325			
Author:	PT\DMG			
Approved for Release:	Rev 1.0	KH	**Date:**	24/03/25

Document Filename: *Littleton Wind Farm - Aviation Review Statement*

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Executive Summary

Ai Bridges Ltd have been commissioned to review the possible impacts of the proposed wind farm on aviation systems in the vicinity of the proposed wind farm development at Littleton. As part of the review, the following subjects were considered:

- Annex 14 - Obstacle Limitation Surfaces (OLS)
- Annex 15 – Aerodrome Surfaces
- Building Restricted Areas (BRA)
- Minimum Sector Altitudes (MSA)
- Instrument Flight Procedures
- Permitted Wind Farms in vicinity of Proposed Wind Farm
- Communications and Navigation Systems
- Radar Surveillance Sensors
- Flight Inspection and Calibration
- IAA - Aeronautical Obstacle Warning Light Scheme
- Private Airfields (VFR Flying)
- Department of Defence Aeronautical Safeguarding
- Garda Air Support Unit (GASU) and Emergency Aeromedical Service (EAS)

Annex 14 - Obstacles Limitation Surfaces (OLS)

A review shows that the proposed wind farm would be located outside the Outer Horizontal Surface of the Waterford Airport Runway Obstacle Limitation Surfaces (OLS), as defined in ICAO (International Civil Aviation Organization) Annex 14.

As the proposed wind farm is situated outside the Outer Horizontal Surface and there is no penetration of the take-off or approach surfaces, it is unlikely that there will be any impacts to the OLS surfaces for Waterford Airport.

Annex 15 - Aerodrome Surfaces

Following a review of “Terrain and Obstacle Requirements” as defined in ICAO Annex 15, turbines at the proposed development would need to be registered if they are more than 100 meters above terrain. The distance from the centre point (ARP – Airport Reference Point) of Waterford Airport to the boundary of Area 1 of the Annex 15 Aerodrome Surface is 45 km. This area encloses the TMA area i.e. Total Maneuvering Area and this is used for circling and maneuvering by aircraft. Should the proposed wind farm be permitted, the turbines would be outside 45 km of Waterford Airport’s ARP and would not cause an impact on the Annex 15 Aerodrome Surface. However, the proposed turbines would be required to be included in the IAA Electronic Air Navigation Obstacle Dataset.

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Building Restricted Areas (BRA)

A Building Restricted Area is the airspace surrounding an aviation facility that needs to be clear from physical intrusions. The purpose of the safeguarded areas is to identify developments with the potential for causing unacceptable interference to navigation facilities. A review shows that the proposed wind farm is over 55 km from the BRA surfaces at Waterford Airport. At this distance there will be no impacts to the BRAs due to wind turbines at Littleton.

Minimum Sector Altitudes (MSA)

The Minimum Sector Altitudes (MSA) is the lowest altitude which may be used to provide a minimum obstacle clearance of 1000 ft above all obstacles within a sector of 25 nautical miles (46 km) from the NDB at Waterford Airport. As the proposed wind farm is located outside the MSA Sectors for Waterford Airport, there should be no impact on the published MSA altitudes.

Instrument Flight Procedures

There are 6 published Instrument Flight Procedures for flights to/from Waterford Airport. Due to the distance of the proposed wind farm from the airport, and as there are existing obstacles nearer to the airport than the proposed development, there should be no impacts to these flight procedures.

Communications and Navigation Systems

As the proposed wind farm is approximately 61 km from the Localizer and transmitting antennas at Waterford Airport, it is very unlikely that wind turbines at the proposed development will have any impact on these ATS communications and radio navigational aids.

Radar Surveillance Sensors

For Radar Surveillance Systems, EUROCONTROL Guidelines require a 16 km safe distance from the surveillance radar system (SSR), for a "*Zone 4 - No Assessment*" condition. It has been highlighted in the analysis that turbines located at the proposed farm would be located at a distance of over 65 km from the radar stations at Shannon, Woodcock Hill and Dublin Airport and in Assessment Zone 4 of the EUROCONTROL Guidelines. As turbines at the proposed development would be located in Assessment Zone 4, a detailed impact assessment on Radar Surveillance Systems will not be required by the IAA.

Flight Inspection and Calibration

Flight checks are conducted annually to ensure that flight procedures and associated navigational aids are safe and accurate. These flight checks are carried out by an IAA approved Flight Inspection Service Provider. The checks are carried out during annual inspections consisting of radial and orbital test flights around Waterford Airport for calibration of instrument landing systems. It is unlikely that the Flight Inspection Procedures will be impacted as the

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proposed wind farm is sufficiently far from the airport runways and the flight inspection procedures should already account for the existing obstacles (e.g. terrain and existing wind farms).

IAA - Aeronautical Obstacle Warning Light Scheme

In the event of a grant of planning consent the IAA are likely to request lighting of the proposed wind turbines in the interest of aviation safe-guarding as the proposed development would be considered as an en-route obstacle.

Private Airfields (VFR Flying)

A due-diligence survey was carried out on the private airfields / helipads in the vicinity of Littleton. It was found that there are two private unlicensed air fields within 10 km of the proposed wind farm site, Lickfinn and Moyne. The proposed wind farm is sufficiently far from each aviation installation that there would be no impact due to the proposed wind turbines. Pilots flying to/from these aviation installations would also be required by law to fly by Visual Flight Rules (VFR) and in accordance with the IAA *Rules of The Air*. The Rules of the Air state, it is the pilot's legal responsibility to be aware of and avoid any obstacles in his/her flight path and therefore he/she would be required to be aware of wind turbines if flying to/from the airfield in question. This can achieved by prudent flight planning by the VFR pilot prior to flight.

Department of Defence Aeronautical Safeguarding

The Irish Air Corps position on wind farms / tall structures are outlined in the paper which was published in 2014: "*Air Corps Wind Farm/ Tall Structures Position Paper*". In the position paper the Irish Air Corps outlines restricted areas where they would object to the installation of wind turbines /tall structures. The areas defined by the Air Corps have been mapped and analysis shows that the proposed wind farm site is partially located within a critical low level flying route (i.e. within 3 NM of the M8 motorway).

Although a section of the proposed wind farm site is located within 3 NM of the M8 motorway, it should be noted that low-level flights along the M8 are likely to avoid the proposed wind farm site, due to high terrain to the southeast of the motorway. However, a further technical assessment may be requested by the Irish Air Corps.

Garda Air Support Unit (GASU) and Emergency Aeromedical Service (EAS)

The standard concerns that are being raised in recent consultations with the Irish Air Corps also highlight the potential for obstacles that could impact the operations of the Garda Air Support Unit (GASU) and the Emergency Aeromedical Service (EAS). An assessment of GASU and EAS operations indicates that they are unlikely to be impacted by the proposed wind farm development.

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Abbreviations

AGL	Above Ground Level
AMSL	Above Mean Sea Level
ARP	Airport Reference Point
BRA	Building Restricted Area
DME	Distance Measuring Equipment
DoD	Department of Defence
EAS	Emergency Aeromedical Service
GASU	Garda Air Support Unit
GP	Glide Path
HLS	Helicopter Landing Site
IAA	Irish Aviation Authority
IAC	Irish Aer Corps
ICAO	International Civil Aviation Organization
IFP	Instrument flight Procedure
ILS	Instrument Landing System
NATS	National Air Traffic Services (UK)
NDB	Non-directional beacon
NM	Nautical Miles
OLS	Obstacle Limitation Surface
PSR	Primary Surveillance Radar
RWY	Runway
SID	Standard Instrument Departure Route
STAR	Standard Arrival Route
SSR	Secondary Surveillance Radar
VFR	Visual Flight Rules
VOR	VHF Omni-directional Range Station

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Abbreviations

AGL	Above Ground Level
AMSL	Above Mean Sea Level
ARP	Airport Reference Point
BRA	Building Restricted Area
DME	Distance Measuring Equipment
DoD	Department of Defence
EAS	Emergency Aeromedical Service
GASU	Garda Air Support Unit
GP	Glide Path
HLS	Helicopter Landing Site
IAC	Irish Air Corps
ICAO	International Civil Aviation Organization
IFP	Instrument Flight Procedure
ILS	Instrument Landing System
OLS	Obstacle Limitation Surface
PSR	Primary Surveillance Radar
RWY	Runway
SID	Standard Instrument Departure Route
STAR	Standard Arrival Route
SSR	Secondary Surveillance Radar
NATS	National Air Traffic Services (UK)
NM	Nautical Miles
VOR	VHF Omni-directional Range Station

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1. Introduction

This section provides a brief summary of the proposed wind farm development at Littleton and of the nearest significant aviation installation at Waterford Airport.

1.1 Wind Farm Site Information

The proposed wind farm development is located in County Tipperary approximately 61 km northwest of Waterford Airport. Figure 1 shows the proposed wind farm site with respect to Waterford Airport and the IAA radar stations at Shannon Airport and Woodcock Hill.

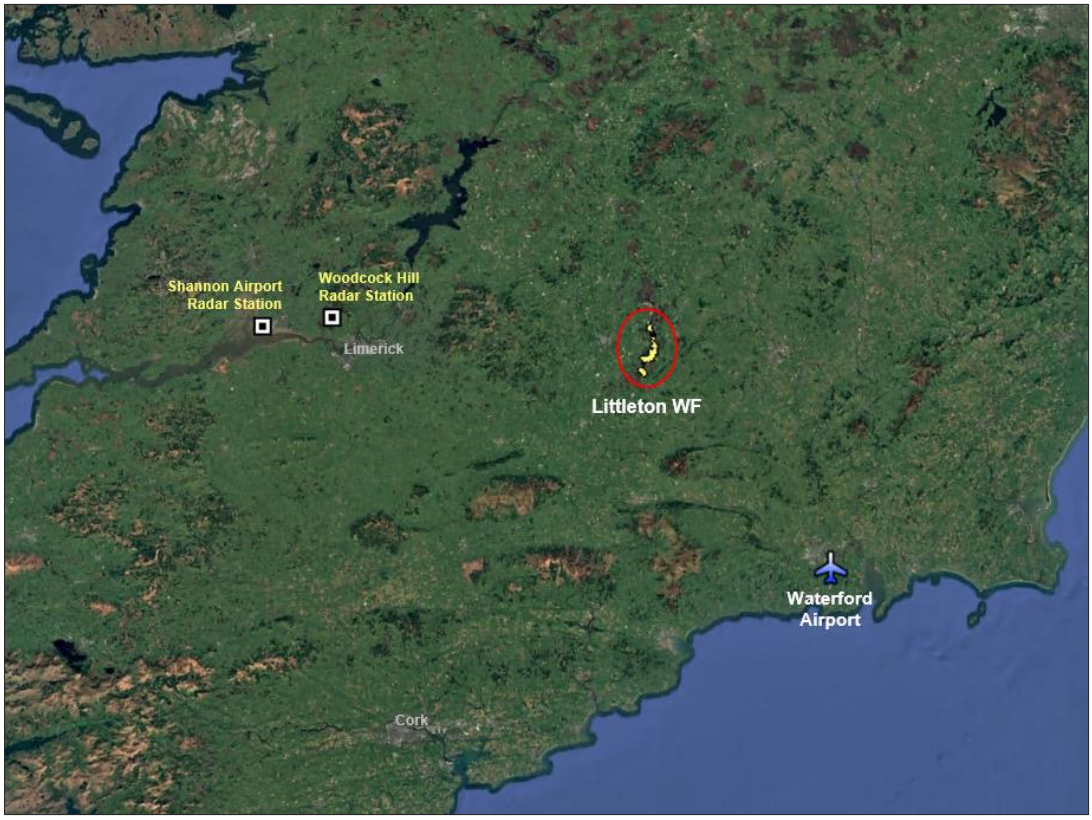


Figure 1. Location of proposed wind farm at Littleton, Co Tipperary

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1.2 Waterford Airport

Table 2 below shows the co-ordinates of Waterford Airport and the distance from the Airport reference Point (ARP) to the proposed wind farm site. Waterford Airport operates in Class G controlled airspace with Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) Flight rules

Location	Installation	Description	Airport Ref. Point ARP	ARP Distance to Proposed Wind Farm
Kilowen, Co Waterford	International Airport	Single Asphalt Runway Airspace: Class G	52 11 14 N 07 05 13 W (Mid-point of Runway 03/21).	61.5 km

Table 1. Waterford Airport Details

The aeronautical navigation aids at the aerodrome include DME, NDB, ILS LOC and ILS GP.



Figure 2. Waterford International Airport

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2. Aviation Review

In this section a review of the following a review of the following Aviation topics is provided.

- Annex 14 - Obstacle Limitation Surfaces (OLS)
- Annex 15 – Aerodrome Surfaces
- Building Restricted Areas (BRA)
- Minimum Sector Altitudes (MSA)
- Instrument Flight Procedures
- Permitted Wind Farms in vicinity of proposed Wind Farm
- Communications and Navigation Systems
- Radar Surveillance Sensors
- Flight Inspection and Calibration
- IAA - Aeronautical Obstacle Warning Light Scheme
- Private Airfields (VFR Flying)
- Department of Defence (DoD) Aeronautical Safeguarding
- Garda Air Support Unit (GASU) and Emergency Aeromedical Service (EAS)

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2.1 Annex 14 Obstacle Limitation Surfaces (OLS)

A review of the Annex 14 Obstacles Limitation Surfaces (OLS) was first was carried out by first plotting the proposed wind farm location and the airport obstacle surfaces. The obstacle limitation surfaces for Waterford Airport are plotted based on the following:

- Annex 14 to the Convention on International Civil Aviation Aerodromes Volume I - Aerodrome Design and Operations Seventh Edition July 2016"
- Certification Specifications and Guidance Material for Aerodromes Design CS-ADR-DSN Issue 4, 8th of December 2017

Figure 3 below shows the OLS in relation to the proposed Littleton wind farm. The distance from the ARP at Waterford Airport (i.e. the runway centre-point), to the nearest of the proposed turbines is over 60 km. The analysis of the OLS plots indicates that turbines at the proposed wind farm would not penetrate the Outer Horizontal Surface which extends to 15 km from the Airport Reference Point (ARP) or runway centre-point.

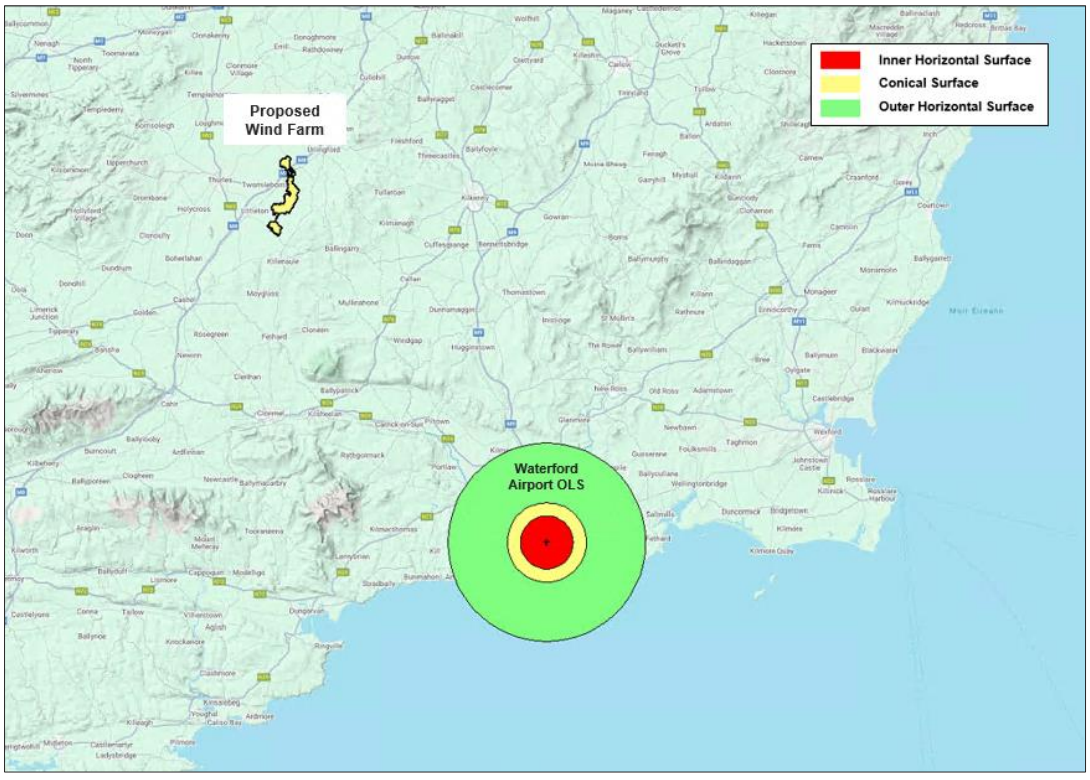


Figure 3. Littleton Wind Farm in relation to Waterford Airport OLS.

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Annex 14 Obstacle Limitation Surfaces	No action.	None

Table 2. Aviation Impact Review - Annex 14 Obstacle Limitation Surfaces

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2.2 Annex 15 Aerodrome Surfaces

Turbines at the proposed wind farm would not penetrate the ICAO Annex 15 Aerodrome Surface as shown in Figure 4. The “Terrain and Obstacle Requirements Area” is defined in ICAO Annex 15 as an area of up to 45 km from the Aerodrome ARP. (An illustration of ICAO Annex 15 Area 1 and Area 2 Surface is provided in Appendix A).

As the nearest turbine at the proposed wind farm would be more than 45 km from the ARP at Waterford Airport, there will be no penetration of the Annex 15 surface for the Waterford Aerodrome. All obstacles, if they are more than 100 meters above terrain for a distance of up to 45 km from the ARP, need to be registered in the IAA Air Navigation Obstacle Data Set. This area is known as the TMA area i.e. Terminal Maneuvering Area and is used for en-route circling and maneuvering and is shown in Figure 4.

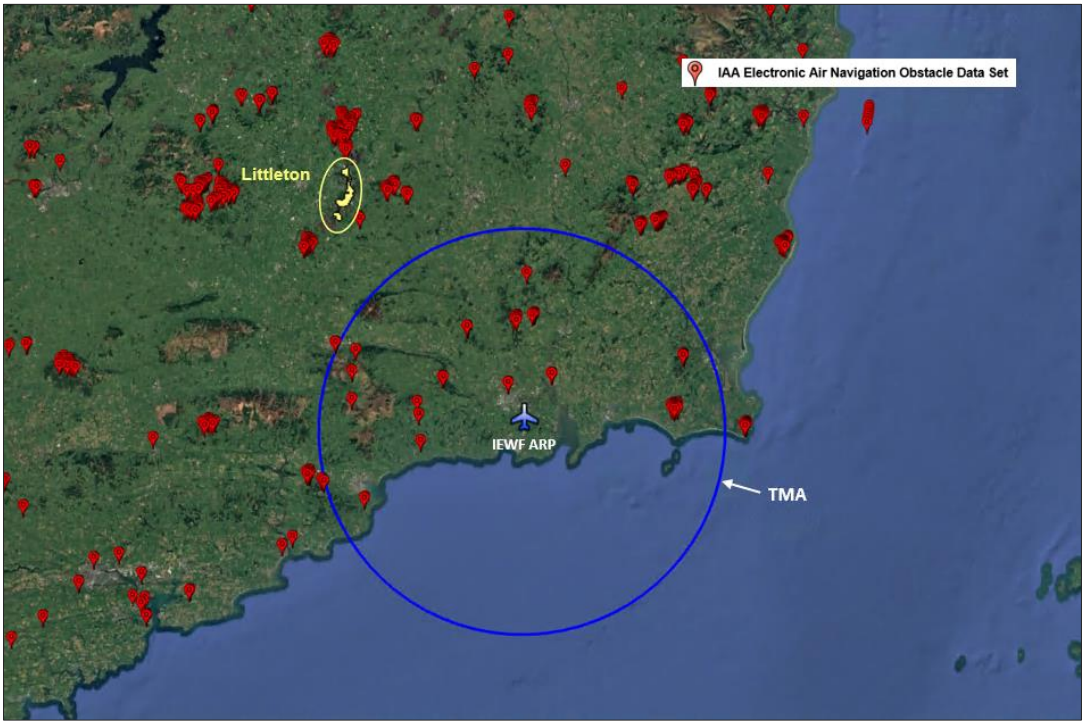


Figure 4. Annex 15 Aerodrome Surface and IAA Electronic Air Navigation Obstacle Data Set

It should also be noted that there are other existing tall structures (obstacles) nearer to the airport, e.g. the operational wind farms at Foyle, Ballybay, Ballincurry, An Cnoc, Ballymartin and Rahora.

These existing obstacles would shield any potential impacts from the proposed wind farm at Littleton. The IAA Electronic Air Navigation Obstacle Data Set permitted obstacles are shown relative to the proposed wind farm in Figure 5.

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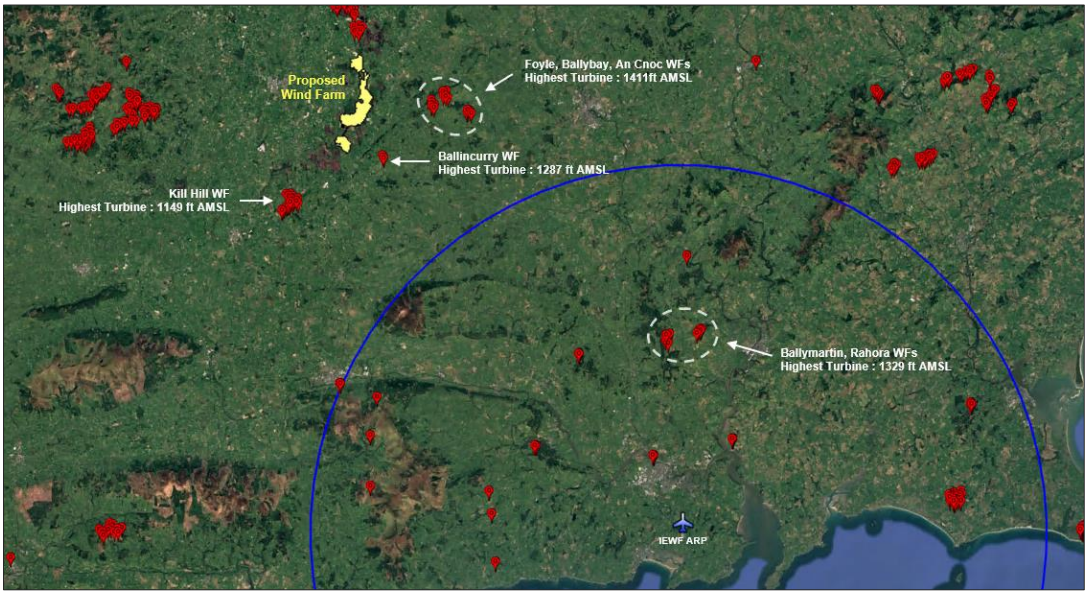


Figure 5. Operational and Permitted Obstacles in vicinity of Littleton Wind Farm

Although there are other obstacles closer to the airport than the proposed wind farm, all new obstacles must be considered and assessed to see if they cause a “hazard to air navigation” and all Terrain Obstacle Data (including man-made obstacles) have to be considered by the relevant Aviation Authorities.

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Annex 15 Aerodrome Surfaces	The proposed wind turbines would be required to be included in the IAA Obstacle Data Set.	None

Table 3. Aviation Impact Review - Annex 15 Aerodrome Surfaces

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2.3 Building Restricted Areas (BRA)

A Building Restricted Area is the airspace surrounding an aviation facility that needs to be clear from physical intrusions. The purpose of the safeguarded areas is to identify developments with the potential for causing unacceptable interference to navigation facilities.

The navigation facilities to be considered at Waterford Airport are the ILS Localisers, Glidepaths and DMEs that provide guidance for aircraft landing on runways 03 and 21. The minimum safeguarded areas for these facilities are defined by the International Civil Aviation Organisation (ICAO) in the document ICAO EUR DOC 015, Section 7. The BRA parameters as specified by the ICAO are provided in Appendix B of this report.

Figure 6 below illustrates that the proposed wind farm at Littleton is over 55 km from the Waterford BRA (safeguarded area for Runways 03 and 21). At this distance turbines at the proposed wind farm will have no impact on the navigation facilities associated with the Building Restricted Areas for Waterford Airport.



Figure 6. Proposed Wind Farm relative to Waterford Airport BRA (RWY 03 and 21)

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Building Restricted Areas	No action.	None

Table 4. Aviation Impact Review - Building Restricted Areas

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2.4 Minimum Sector Altitudes

A review of the Minimum Sector Altitudes (MSA) shows that turbines at the proposed wind farm would not be inside 25 nautical miles of the NDB at Waterford Airport. The MSA provides a minimum obstacle clearance of 1000 ft above the highest obstacle within specified sectors.

The proposed wind farm is located outside the MSA Sectors for Waterford Airport as shown in Figure 7. Therefore, there will be no impact on the published MSA altitude figures.

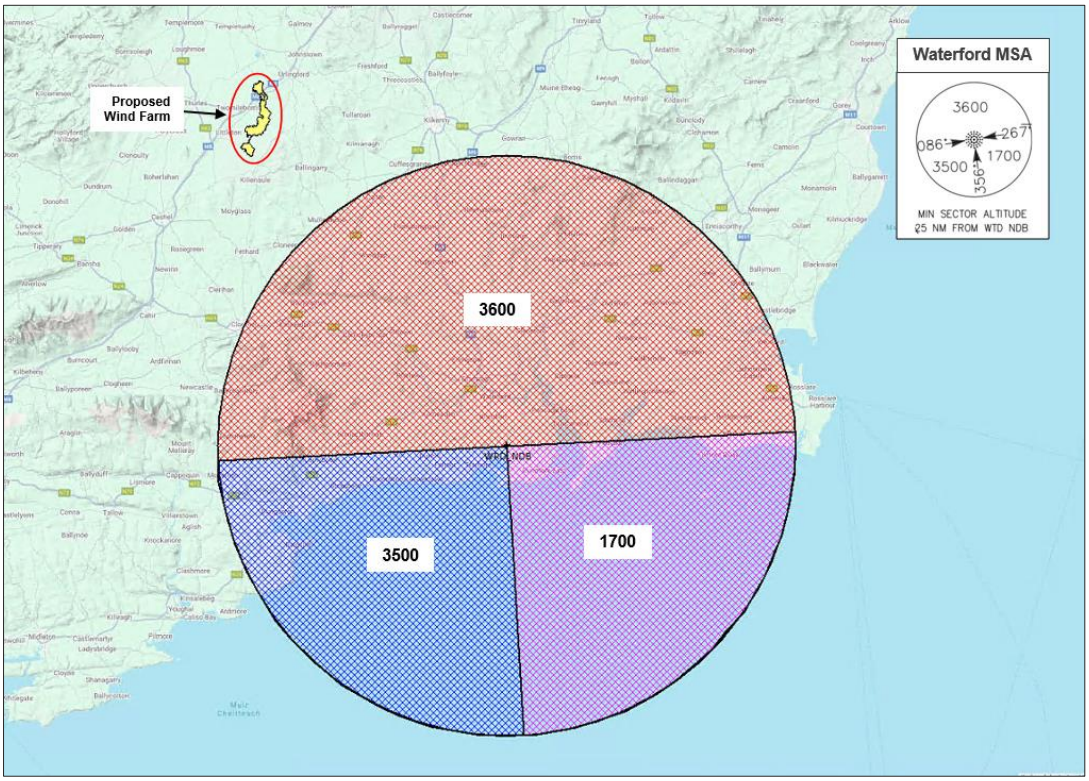


Figure 7. Waterford Airport (EIWF) Minimum Sector Altitudes

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Minimum Sector Altitudes	No action	None

Table 5. Aviation Impact Review - Minimum Sector Altitudes

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2.5 Instrument Flight Procedures

There are 6 published Instrument and Visual Flight Procedures for arrivals to and departures from Waterford Airport.

Due to the distance of the proposed wind farm from the Airport (and as there are existing obstacles (e.g. telecom masts and existing wind farms)) it is unlikely that there will be any impacts on the Instrument Flight Procedures for flights to/from Waterford Airport. Table 6 below lists the Instrument Flight Procedures for Waterford Airport.

Aerodrome	Aerodrome Procedure	Chart ID	Likely WF Impacts
Waterford	Instrument Approach Chart ILS/NDB/DME RWY 21 – ICAO	EIWF AD 2.24-3.1	None.
Waterford	Instrument Approach Chart NDB/DME RWY 21 – ICAO	EIWF AD 2.24-5	None.
Waterford	Instrument Approach Chart NDB/DME RWY 03 – ICAO	EIWF AD 2.24-6.1	None.
Waterford	Visual Approach Chart – ICAO	EIWF AD 2.24-7	None.
Waterford	Instrument Approach Chart RNP RWY 02 – ICAO	EIWF AD 2.24-8	None.
Waterford	Instrument Approach Chart RNP RWY 20 – ICAO	EIWF AD 2.24-9	None.

Table 6. Instrument and Visual Flight Procedures – Waterford Airport

A detailed instrument flight procedure analysis is outside of the scope of this report; however, from the desktop assessment conducted it is envisaged that it is unlikely that the Air Navigation Service Provider (ANSP) at Waterford Airport will require a detailed assessment on the possible impact of the proposed wind farm on the flight procedures.

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Instrument Flight Procedures	No action	None.

Table 7. Aviation Impact Review - Instrument Flight Procedures

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2.6 Operational Permitted Wind Farms in vicinity of Proposed Wind Farm

The Planning References for the permitted wind farms in the vicinity of the proposed wind farm are shown below in Table 8. None of these wind farms required a Full Assessment of Instrument Flight Procedures.

Wind Farm	Planning Reference	Status
Lisdowney, Co. Kilkenny	12/172	Operational Wind Farm
Lisheen, Co. Tipperary	14/202	Operational Wind Farm
Bruckana, Co. Laois & Kilkenny	10/145	Operational Wind Farm
Foyle	12/378	Operational Wind Farm
Ballybay	12/533	Operational Wind Farm
An Cnoc, Co. Tipperary	09/781	Operational Wind Farm
Ballincurry, Co. Tipperary	PL92.245874	Operational Wind Farm
Gortahile, Co. Laois	04/935	Operational Wind Farm
Rahora, Co. Kilkenny	03/1117	Operational Wind Farm
Ballymartin, Co. Kilkenny	07/2141	Operational Wind Farm
Pinewood, Co. Laois	16/260	Permitted Wind Farm

Table 8. Operational and Permitted Wind Farms in vicinity of Proposed Wind Farm

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2.7 Communications and Navigation Systems

The AIP document EIWD AD 2-18/19 provides the information for communication and navigation facilities for Waterford Airport. The table below shows the channel frequencies for the ATS communications Facilities and the Radio Navigation and Landing Aids for the airport.

Aerodrome	ATS Communications Facilities Channel Frequency	Radio Navigation and Landing Aids Channel Frequency	Approximate Distance to Localizer and Transmitting antennas	Impacts of wind fam
Waterford	121MHz -130MHz	110KHz – 331MHz	61 km	No impacts

Table 9. Impacts on Communications and Navigation Systems

As the proposed wind farm is approximately 61 km from the Localizer and transmitting antennas, it is very unlikely that turbines at the proposed wind farm will have any impact on these ATS communications and radio navigational aids. Typically, interference to VHF communications systems will only occur when obstacles are in close proximity to the VHF transmitter e.g. less than 500m.

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Communication and Navigation Systems	No action	None

Table 10. Aviation Impact Review - Communication and Navigation Systems

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2.8 Radar Surveillance Sensors

The tables below show the Irish Aviation Authority Assessment Zone arrangement for the two types of aviation radar surveillance systems; Primary Surveillance Radar (PSR) and Secondary Surveillance Radar (SSR).

Zone	Description	Assessment Requirements
Zone 1	0 - 500m	Safeguarding
Zone 2	500m - 15km and in radar line of sight	Detailed Assessment
Zone 3	Further than 15km and in radar line of sight	Simple Assessment
Zone 4	Not in radar line of sight	No Assessment

Table 11. PSR Zone Arrangements

Zone	Description	Assessment Requirements
Zone 1	0 - 500m	Safeguarding
Zone 2	500m - 16km but within maximum instrumented range and in radar line of sight	Detailed Assessment
Zone 4	Further than 16km or not in radar line of sight	No Assessment

Table 12. SSR Zone Arrangements

The EUROCONTROL Guidelines require a 16km safe distance for a “Zone 4 - No Assessment” condition and detailed assessments are required for any proposed wind within 16km of a secondary surveillance radar.

It should be noted that in the UK, NATS (Air Traffic Control) safeguards SSR to a distance of 10km. The guidelines used by NATS (*CAP 764: Chapter 2: Impact of wind turbines on aviation*) state that:

> *“Wind turbine effects on SSR are traditionally less than those on PSRs but can be caused due to the physical blanking and diffracting effects of the turbine towers, depending on the size of the turbines and the wind farm. These effects are typically only a consideration when the turbines are located very close to the SSR i.e. less than 10 km.”*

To determine which Assessment Zones are applicable to the proposed wind farm a desktop assessment was carried out. The nearest radar surveillance sites to the proposed wind farm development are at Shannon Airport, Woodcock Hill and Dublin Airport. These radar sites are shown relative to the proposed wind farm in Figure 8 below.

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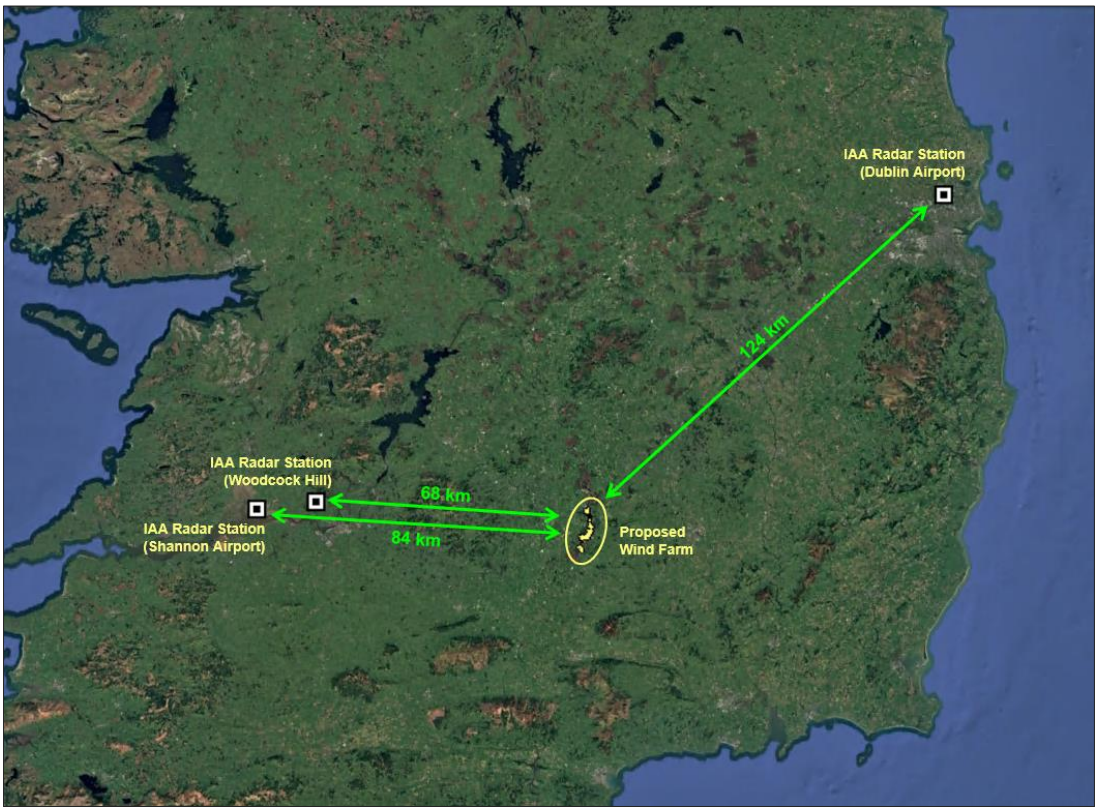


Figure 8. Radar Surveillance Sites relative to Littleton Wind Farm.

A review of each radar station is provided in Sections 2.8.1 to 2.8.3 that follow. The findings of the review indicate that the proposed wind farm is sufficiently far from the radar stations that there would be no impacts, and a detailed radar assessment would not be required by the IAA.

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Radar Surveillance Sensors	No action	None

Table 13. Aviation Impact Review - Radar Surveillance Sensors

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2.8.1 Shannon Airport Radar Assessment

The radar surveillance site at Shannon Airport consists of a PSR and a SSR. The PSR and the SSR antennas are co-located on the same structure at Shannon Airport (Figure 9).



Figure 9. Shannon Airport Radar Station

Table 14 below shows the (EuroControl & NATS) assessment zone applicable to the nearest point where a turbine could potentially be located. The applicable assessment zone has been based on distance from the Radar Station and whether a radar line-of-sight condition exists.

Wind Farm ID	Distance to PSR/SSR Radar Station	Radar LOS Assessment (EuroControl Guidelines)	Radar LOS Assessment (NATS Guidelines – UK)
Littleton	84 km	Detailed Assessment Not Required	Detailed Assessment Not Required

Table 14. EuroControl / UK Safeguarding Guidelines – Shannon Airport Radar Station

As the table above show, the proposed wind farm is within Assessment Zone 4 as specified by the EUROCONTROL guidelines, which would indicate that a detailed technical assessment would not be required for the impact on the PSR/SSR radar station at Shannon Airport.

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2.8.2 Woodcock Hill Radar Assessment

The radar surveillance site at Woodcock Hill consists of a SSR system housed in the dome-shaped structure shown in Figure 10.



Figure 10. Woodcock Hill Radar Station

Table 15 below shows the (EuroControl & NATS) assessment zone applicable to the nearest point where a turbine could potentially be located. The applicable assessment zone has been based on distance from the Radar Station and whether a radar line-of-sight condition exists.

Wind Farm ID	Distance to PSR/SSR Radar Station	Radar LOS Assessment (EuroControl Guidelines)	Radar LOS Assessment (NATS Guidelines – UK)
Littleton	68 km	Detailed Assessment Not Required	Detailed Assessment Not Required

Table 15. EuroControl / UK Safeguarding Guidelines – Woodcock Hill Radar Station

As the table above show, the proposed wind farm is within Assessment Zone 4 as specified by the EUROCONTROL guidelines, which would indicate that a detailed technical assessment would not be required for the impact on the SSR radar station at Woodcock Hill.

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2.8.3 Dublin Airport Radar Assessment

The radar surveillance site at Dublin Airport consists of two PSR/SSR (MSSR) radar stations as shown below in Figure 11 and Figure 12.



Figure 11. Dublin Airport MSSR Radar Station #1



Figure 12. Dublin Airport MSSR Radar Station #2

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Table 16 below shows the (EuroControl & NATS) assessment zone applicable to the nearest point where a turbine could potentially be located. The applicable assessment zone has been based on distance from the Radar Station and whether a radar line-of-sight condition exists.

Wind Farm ID	Distance to PSR/SSR Radar Station	Radar LOS Assessment (EuroControl Guidelines)	Radar LOS Assessment (NATS Guidelines – UK)
Littleton	124 km	Detailed Assessment Not Required	Detailed Assessment Not Required

Table 16. EuroControl / UK Safeguarding Guidelines – Dublin Airport Radar (Station #1 and #2)

As the table above show, the proposed wind farm is within Assessment Zone 4 as specified by the EUROCONTROL guidelines, which would indicate that a detailed technical assessment would not be required for the impact on the PSR/SSR at Dublin Airport.

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2.9 Flight Inspection and Calibration

Flight checks are conducted annually to ensure that flight procedures and associated navigational aids are safe and accurate. These flight checks are carried out by an IAA approved Flight Inspection Service Provider. The checks are carried out during annual inspections consisting of radial and orbital test flights around Waterford Airport for calibration of instrument landing systems.

It is unlikely that the Flight Inspection Procedures will be impacted as the proposed wind farm is sufficiently far from the airport runways and the flight inspection procedures should already account for the existing obstacles (e.g. terrain and existing wind farms).

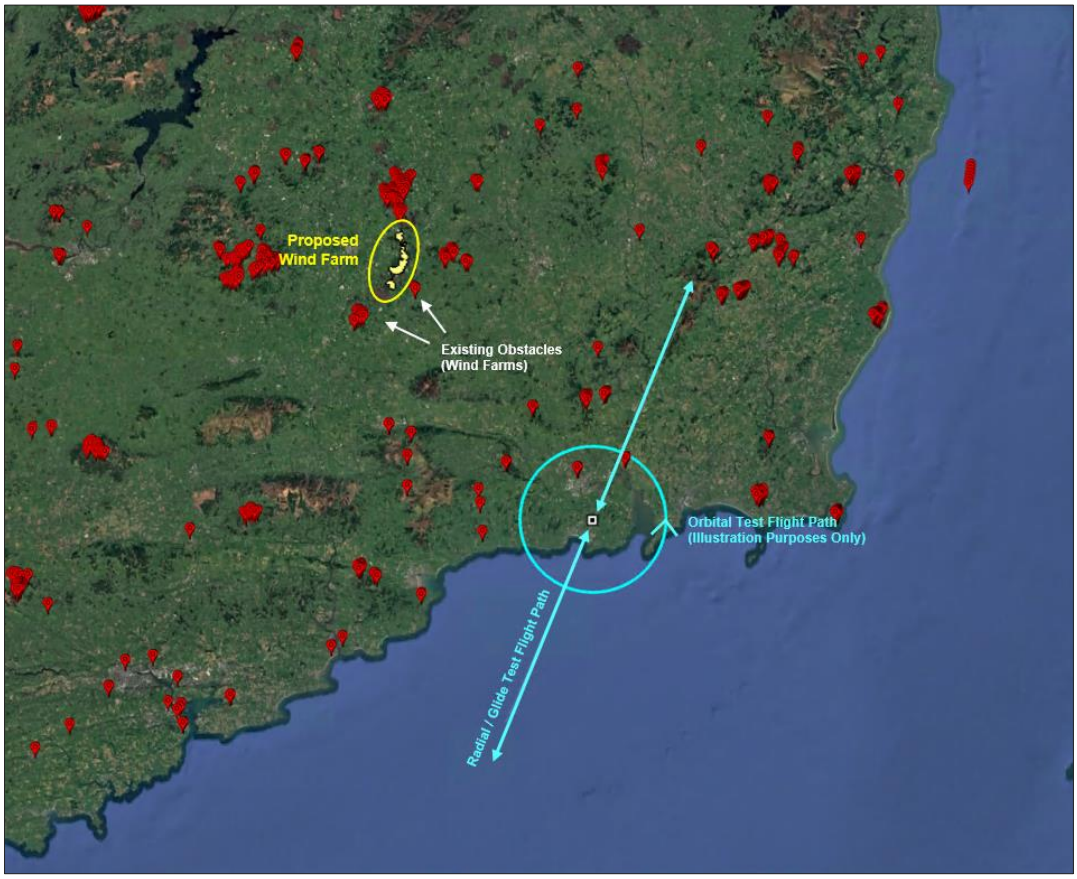


Figure 13. Flight Inspection and Calibration Test Procedures should account for existing obstacles (e.g. terrain and existing wind farms)

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Flight Inspection and Calibration	No action	None

Table 17. Aviation Impact Review - Flight Inspection and Calibration

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2.10 IAA - Aeronautical Obstacle Warning Light Scheme

In the event of a grant of planning consent the IAA-ANSP would require the lighting of the proposed wind turbines in the interest of aviation safeguarding as the proposed development may be considered as an en-route obstacle. The developers of the proposed turbines would intend to implement an aeronautical obstacle warning light.

It is recommended that lighting requirements should be in accordance with Chapter Q – Visual Aids for denoting Obstacles; CS ADR.DSN.Q.851 and GM.ADR.DSN.Q.851 (Pages 729/730) of the EASA Easy Access Rules for Aerodromes (Reg (EU) No. 139/2014) where it states that

> *"Applicability: When considered as an obstacle a wind turbine should be marked and/or lighted."*

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Aeronautical Obstacle Warning Light Scheme	It is likely that the IAA would request that the wind farm, if permitted, would be fitted with Aeronautical Obstacle Warning Lights in accordance with industry standards. Subject to further consultation with the IAA.	None

Table 18. Aviation Impact Review - Aeronautical Obstacle Warning Light Scheme

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2.11 Private Airfields (VFR Flying)

For due diligence purposes, private airfields and heliports in the vicinity of Littleton have been considered and it was found that there are two private airfields within 10 km of the proposed wind farm site: Lickfinn Airfield, and Moyne Airfield.

These aviation installations operate in un-controlled Class G airspace and flights in and out of these airfields are required by law to fly by Visual Flight Rules (VFR) and in accordance with the IAA *Rules of The Air*.

ID	Location	Installation Type	Description
Lickfinn Airfield	Lickfinn, Glengoole, Co. Tipperay.	Private Unlicensed Airfield.	Airfield with single grass-strip runway.
Moyne Airfield	Moyne, Co Tipperary	Private Unlicensed Airfield.	Airfield with single grass-strip runway.

Table 19. Private Airfield / Heliport Details

A review of the possible impacts of the proposed wind farm on both of the above-listed airfields is provided in Section 2.11.1 and Section 2.11.2. The findings of the review indicate that the proposed wind farm would have no impact on these airfields.

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Private Airfields (VFR Flying)	No action.	None

Table 20. Aviation Impact Review - Private Airfields (VFR Flying)

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2.11.1 Lickfinn Airfield

This airfield is located in the townland of Lickfinn, Co Tipperary and is 3.4 km from the nearest of the proposed turbines at Littleton. The location of the airfield relative to the proposed wind farm is shown below in Figure 14 and a close-up aerial view of the airfield is shown in Figure 15. The airfield is used for light aircraft only (i.e. small airplanes, helicopters, microlights, etc.) and flights in and out of this airfield are required by law to fly by Visual Flight Rules (VFR) and in accordance with the *IAA Rules of The Air*.

The Rules of the Air state, it is the pilot's legal responsibility to be aware of and avoid any obstacles in his/her flight path and therefore he/she would be required to be aware of wind turbines if flying to/from the airfield in question. This can be achieved by prudent flight planning by the VFR pilot prior to flight. It should also be noted that the existing turbines at Ballincurry wind farm are located much nearer to the airfield than the proposed turbines at Littleton.

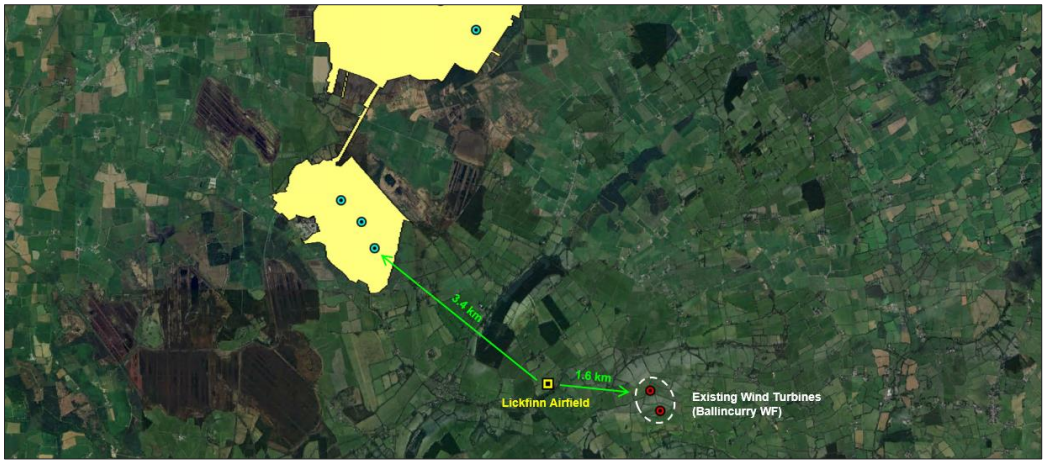


Figure 14. Location of Lickfinn Airfield



Figure 15. Close-up Aerial View – Lickfinn Airfield

As the proposed turbines are 3.4 km from the airfield and as pilots are required to fly by VFR rules and in accordance with the rules of the air, there would be no impact to Lickfinn Airfield due to the proposed development at Littleton.

Airfield / Helipad	Description	Wind Farm Impacts
Lickfinn Airfield	Private grass-strip airfield, 3.4 km southeast of proposed wind farm.	No Impacts.

Table 21. Impacts of proposed wind farm on Lickfinn Airfield.

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2.11.2 Moyne Airfield

This airfield is located in the townland of Moyne, Co Tipperary and is 5.9 km from the nearest of the proposed turbines at Littleton. The location of the airfield relative to the proposed wind farm is shown below in Figure 14 and a close-up aerial view of the airfield is shown in Figure 15. Although the airfield is listed in some aeronautical material, investigations indicate that the airfield has not been operational since 2016. The aerial view of the site also indicates there is no existing runway at Moyne.

The airfield would have previously been used for light aircraft only (i.e. small airplanes, helicopters, microlights, etc.) and any flights in and out of the airfield would have been required by law to fly by Visual Flight Rules (VFR) and in accordance with the *IAA Rules of The Air*.

The Rules of the Air state, it is the pilot's legal responsibility to be aware of and avoid any obstacles in his/her flight path and therefore he/she would be required to be aware of wind turbines if flying to/from the airfield in question. This can be achieved by prudent flight planning by the VFR pilot prior to flight.

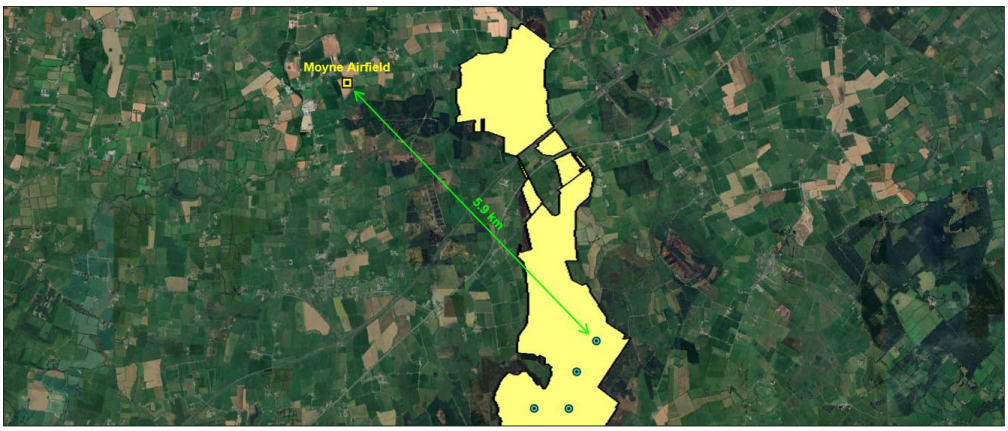


Figure 16. Location of Moyne Airfield



Figure 17. Close-up Aerial View – Moyne Airfield (showing no evidence of existing runway)

As the proposed turbines are more than 5 km from the airfield site and as pilots are required to fly by VFR rules and in accordance with the rules of the air, there would be no impact to the Moyne Airfield due to the proposed development at Littleton.

Airfield / Helipad	Description	Wind Farm Impacts
Moyne Airfield	Private grass airfield, 5.9 km north of proposed wind farm. (Airfield has not been operational since 2016)	No Impacts.

Table 22. Impacts of proposed wind farm on Midland Heliport.

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2.12 Irish Air Corps / DoD Safeguarding

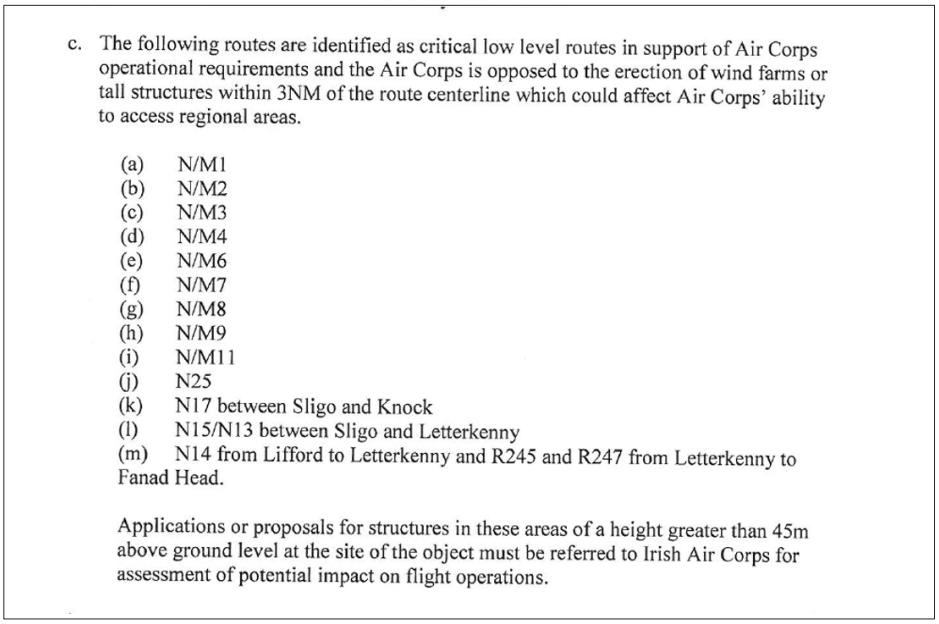
The standard concerns that are being raised by the Department of Defence, relate to the potential impact of wind turbines on the aviation activities of the Irish Air Corps (IAC). The Department of Defence highlights IAC Restricted Areas (for wind farms/ tall structures). They also request a specific Aeronautical Obstacle Warning Light Scheme for turbines that are permitted.

An assessment of the IAC Restricted Areas is provided in Section 2.12.1, and a review of the IAC Aeronautical Obstacle Warning Light Scheme is provided in Section 2.12.2

2.12.1 Department of Defence – IAC Restricted Areas

The Irish Air Corps Position Paper "*Air Corps Wind Farm/ Tall Structures Position Paper*" published on 08th August 2014 (Appendix C), states that the Air Corps are likely to oppose any wind farm / tall structure in the following restricted areas:

- Lands underlying military airspace for flying activity. (Areas contained in Danger Areas EI-D1, EI-D5, EI-D6, EI-D13, EI-D14, Restricted Areas EI-R15, EI-R16 within 20 NM of Baldonnel, MOAs 3 and 4 within 20 NM of Baldonnel.
- Low Flying Training Areas within MOA 4 in the areas of; Blessington, Edenderry/Allenwood/Rathangan, Kilmeague/Newbridge.
- Low Flying Training Area West – LFTA WEST.
- A distance of 5 NM or less from military installations.
- Critical low level flying routes in support of Air Corps operation requirements, as described in Figure 20 below.



c. The following routes are identified as critical low level routes in support of Air Corps operational requirements and the Air Corps is opposed to the erection of wind farms or tall structures within 3NM of the route centerline which could affect Air Corps' ability to access regional areas.

(a) N/M1
(b) N/M2
(c) N/M3
(d) N/M4
(e) N/M6
(f) N/M7
(g) N/M8
(h) N/M9
(i) N/M11
(j) N25
(k) N17 between Sligo and Knock
(l) N15/N13 between Sligo and Letterkenny
(m) N14 from Lifford to Letterkenny and R245 and R247 from Letterkenny to Fanad Head.

Applications or proposals for structures in these areas of a height greater than 45m above ground level at the site of the object must be referred to Irish Air Corps for assessment of potential impact on flight operations.

Figure 18. Irish Air Corps – Critical Low-Level Routes

The nearest of the Air Corps restricted areas to the proposed wind farm is the low-level flight route around the M8 motorway. The proposed wind farm site is partially located within the restricted area (3NM) around the M8, as shown in Figure 19 below. As some of the proposed

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turbines at Littleton would be located inside the restricted area, the Irish Air Corps may raise concerns in relation to the proposed development.

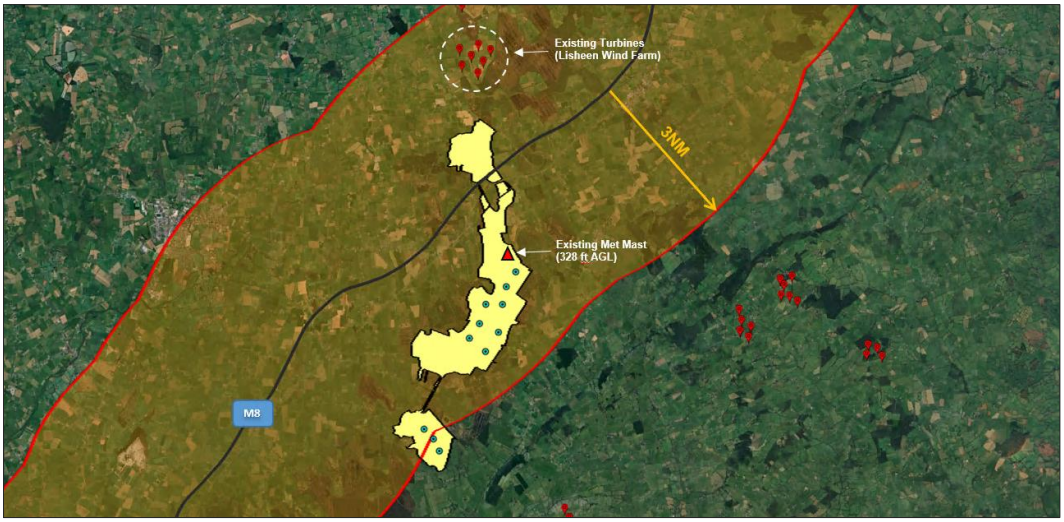


Figure 19. Proposed Wind Farm relative to IAC Critical Low Level Flight Route (M8)

Although the proposed wind farm is partially located within the restricted area around the M8, it should be noted that there are other existing wind farms that are located within 3NM of the M7 and M8 motorways (e.g., Monaincha, Lisheen II, Lisdowney and Kill Hill wind farms) as shown below in Figure 14. It should also be noted that there is an existing meteorological mast adjacent to the proposed turbines at Littleton which is marked on the IAA obstacle dataset with a published height of 328 ft AGL.

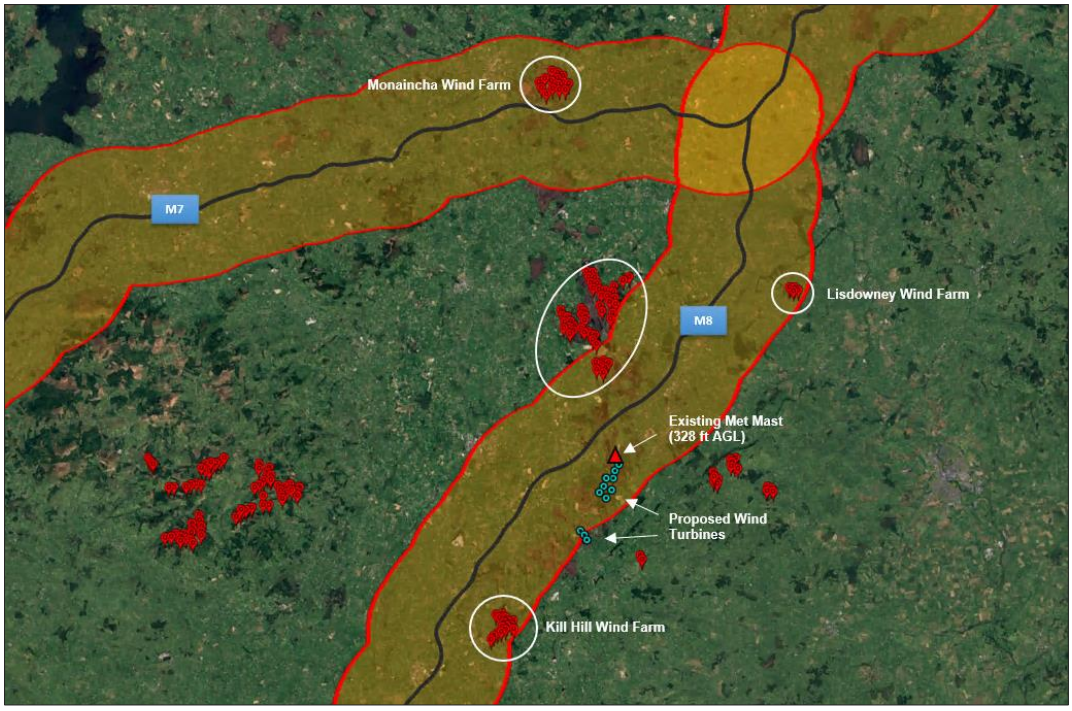


Figure 20. Existing Wind Farms located within 3NM of Low-Level Route Restricted Areas

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A summary analysis of IAC (low-level flight route) restricted area is provided below.

- The proposed wind farm site is not located in a direct flight path from Baldonnel to any of the regional airports (e.g. Kerry, Cork, Waterford) or major cities (e.g. Cork, Limerick, Waterford).

- The area to the east of the M8 motorway where Littleton is situated, is unsuitable for aircraft maneuvering due to the close proximity of high terrain

- In poor weather conditions it is unlikely that low-level flights would pass over Littleton, as any flights along the M8 would avoid the high terrain to the east of the motorway. The hills to the east of the motorway would also contribute to lower visibility and lower cloud base cover.

- In good weather conditions, a wind farm at Littleton could potentially be used as a visual landmark to aid Visual Flight Rules (VFR) navigation. There are existing wind farms in the area (e.g. Lisheen and Lisdowney) and the addition of new turbines at Littleton could make it easier for pilots to identify their flight position.

- In the rare event where a pilot decides to undertake a reverse course manoeuvre by performing a 180° turn, it is unlikely that this would be initiated near Littleton. The existing wind farms at Lisdowney and Lisheen II are marked as obstacles on existing aviation charts and Aer Corps flight rules and procedures would account for these. Any reverse course manoeuvre would likely only commence southwest of Kill Hills wind farm or northeast of Lisdowney wind farm. The proposed turbines at Littleton would not have any further impact on Aer Corps flight rules and procedures.

- In a worst-case scenario of deteriorating visibility and/or reducing cloud base where a pilot is forced to undertake a reverse course manoeuvre in the vicinity of Littleton. The turn radius for an aircraft with a true airspeed of 80 knots in a 25° bank turn (as per ICAO recommendations) would be 0.2 NM*. A worst-case scenario, where the pilot decides to commence a reverse-course manoeuvre as they are flying south along the M8 adjacent to Littleton (0.05 NM to the right of the road, as per the Rules of the Air), would result in the aircraft being 0.15 NM east of the motorway. This would be 0.38 NM /2309 ft clear of the nearest of the proposed turbines at Littleton.

  If a worst-case westerly crosswind of 25 kts is also considered, the radius of turn would be 0.33 NM putting the aircraft 0.28 NM east of the motorway. This would result in the aircraft being 0.25 NM 1519 ft clear of the nearest of the proposed turbines at Littleton. (The formula used in these calculations has been taken from the "*Pilot's Handbook of Aeronautical Knowledge – Federal Aviation Administration – 2016"* and is provided in Appendix D of this report.)

- All modern aircraft are equipped with a range of Global Navigation Satellite Systems (GNSS), e.g. GPS, GLNASS, Galileo, etc. These GNSS systems provide pilots with accurate navigation information including data to avoid obstacles during VFR operations. Should the proposed wind farm at Littleton be permitted the turbine location would be submitted to the IAA and aviation charts and GNSS databases would be updated accordingly.

For the reasons outlined above any impacts on Air Corps operations in the area are expected to be negligible.

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To further illustrate that low-level flights are likely to avoid the proposed wind farm site, a cross-sectional analysis of the area was carried out. Two cross sections in the vicinity of the proposed wind farm were assessed;

i) A1 – A2: Terrain Profile Perpendicular to the M8 Motorway

ii) B1 – B2: Terrain Profile parallel to the M8 Motorway

The results of both cross sections (Figure 16) show that low-level flights are likely to avoid the proposed wind farm site due to the existence of high terrain to the east of the motorway.

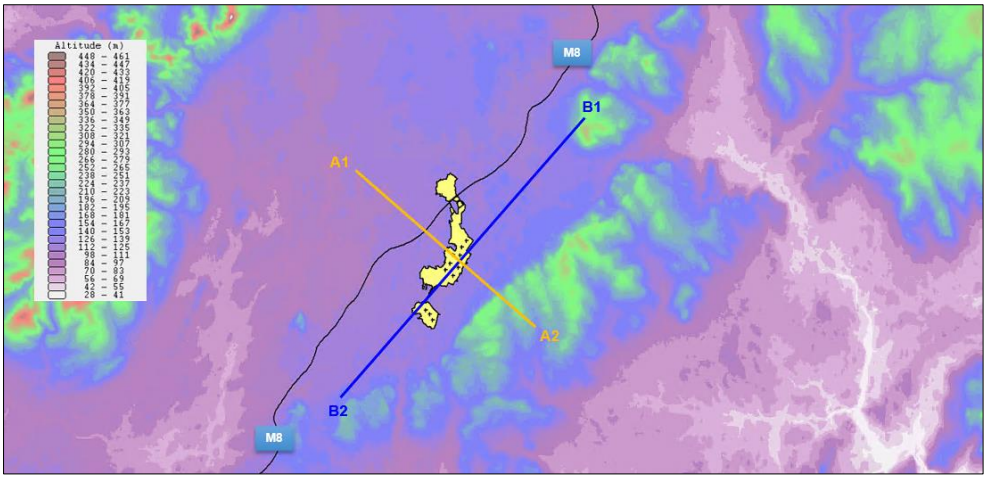


Figure 21. Littleton Wind Farm - Cross Section Analysis Map

Cross Section A1-A2 is shown below in Figure 17 and shows the high terrain to the southeast of the M8 Motorway (Red Area). Low-level flights would avoid this terrain and fly along the M8 Motorway (Green Area). Cross Section B1-B2 is shown below in Figure 18 and shows the Littleton Site Terrain Profile parallel to the M8 Motorway. Low-level flights would avoid this area due to the high terrain in the area (i.e. Spa Hill).

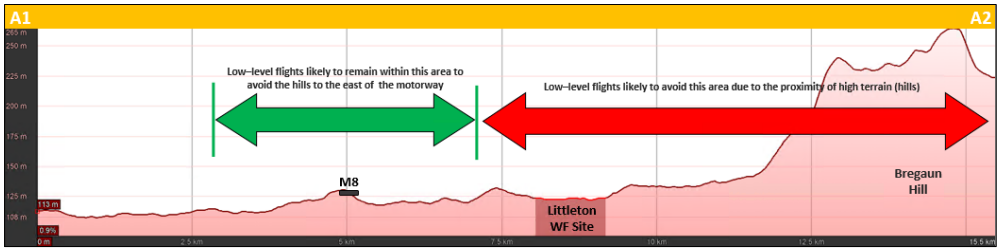


Figure 22. Cross Section A1-A2 (Terrain Profile Perpendicular to the M8 Motorway)

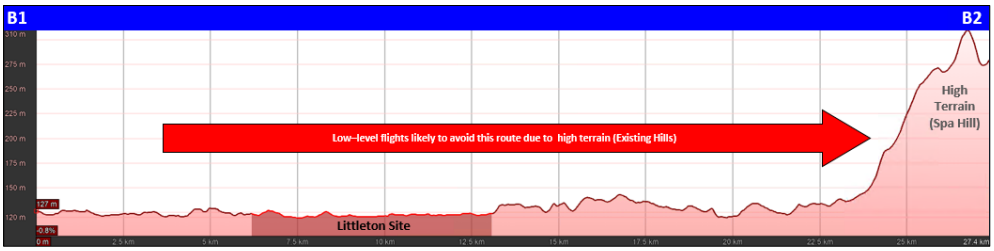


Figure 23. Cross Section B1-B2 (Terrain Profile Parallel to the M8 Motorway)

Aviation Impact Review	Mitigation Measures	Residual Impact
Department of Defence – IAC Restricted Areas	Subject to pilot flight plan.	None

Table 23. Aviation Impact Review – IAC Restricted Areas

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2.12.2 Department of Defence – IAC Aeronautical Obstacle Warning Light Scheme

To-date there has been no consultation response from the Department of Defence highlighting any requirements for an IAC Aeronautical Obstacle Warning Light Scheme. Based on the analysis provided in Section 2.12.1 above, a further detailed technical assessment could be undertaken to address any concerns that the IAC/DoD in relation to the aeronautical lighting.

Any concerns or observations raised would be taken into account and a suitable mitigation measure proposal would be considered in accordance with the IAC pilot flight plans.

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2.13 Garda Air Support Unit (GASU) and Emergency Aeromedical Service (EAS)

The standard concerns that are being raised in recent consultations with the Air Corps also highlight the potential for obstacles that could impact the operations of the Garda Air Support Unit (GASU) and the Emergency Aeromedical Service (EAS). The excerpt below is taken from a response received from the IAC in relation to a third-party wind farm project:

> "*Having consulted with the subject matter experts in the Irish Air Corps, the Department of Defence wishes to make the following observations:*
>
> - *The Department of Defence cannot support, based on military advises, the erection of wind farms or other tall structures within 3 NM of roads identified as critical low level routes in support of operational requirements. The erection of obstacles within low-level helicopter routes could affect the Irish Air Corps ability to access regional areas and to fulfil its role.*
> - *If this proposed development was to go to the planning stage, the Department of Defence would be obligated to raise the following concerns and advise the planning authorities that the proposed windfarm*
>
> *a) lies wholly within 3 nautical miles of the [Motorway/National Road] which is identified as a critical low level route used by state aircraft on operational taskings. A windfarm or any other tall structures within a low-level route will be an obstacle to state aircraft not operating within the civil rules of the air;*
>
> *b) The [Motorway/National Road] low level route requires protection from obstacles for low level state aircraft on operational tasking's such as:*
>
> *(i) The Garda Air Support Unit (GASU)*
> *(ii) The Emergency Aeromedical Service (EAS)"*

A review of the GASU and EAS services is provided in Sections 2.13.1 and 2.13.2 that follow. The findings of the review indicate that the proposed wind farm would have no impacts on these aviation services.

Aviation Impact Review	Mitigation Measure Action	Residual Impact
Garda Air Support Unit (GASU) and Emergency Aeromedical Service (EAS)	No action.	None

Table 24. Aviation Impact Review - GASU and EAS

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2.13.1 The Garda Air Support Unit (GASU)

The Garda Air Support Unit is based at Casement Aerodrome, Baldonnel and is typically deployed to incidents in the following cases:

- Immediate threat to life
- Incidents of a criminal, terrorist or other nationally important nature
- Immediate threat of serious public disorder
- Tasks leading to the prevention or detection of crime
- Evidence gathering
- Intelligence gathering
- Photographic tasks
- Traffic Management/Monitoring

The unit consists of one fixed-wing aircraft (a Pilatus Britten-Norman BN 2T-4S Defender 4000) and two helicopters (Eurocopter EC 135 T2).



Figure 24. GASU - Pilatus Britten-Norman BN 2T-4S Defender 4000



Figure 25. GASU - Eurocopter EC135 T2

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The proposed wind farm is located in an area that is sparsely populated and on boggy terrain. For these reasons, it is highly unlikely that the proposed wind farm development would have any significant impacts on GASU operations.

In the unlikely event of GASU operations in the general area, it should be noted that all modern aircraft are equipped with a range of Global Navigation Satellite Systems (GNSS), e.g. GPS, GLNASS, Galileo, etc. These GNSS systems provide pilots with accurate navigation information including data to avoid obstacles during VFR operations. Should the proposed wind farms be permitted the associated turbine locations would be submitted to the IAA and aviation charts and GNSS databases would be updated accordingly.

GASU Aircraft	Impact of proposed wind farms - Opinion
Fixed-wing Airplane (Pilatus Britten-Norman BN 2T-4S Defender 4000)	Low – Fixed-wing aircraft are unlikely to be deployed in low level activity in the subject areas. In addition, the aircraft would be equipped with modern communications systems and navigational equipment. Should the wind farm be permitted, the turbines would be fitted with aeronautical lighting and would be clearly marked in aviation charts.
Helicopter (Eurocopter EC135 T2)	Low – Helicopter landings in the subject area would not occur as the proposed wind farm located in boggy terrain. In addition, the aircraft would be equipped with modern communications systems and navigational equipment. Should the wind farm be permitted, the turbines would be fitted with aeronautical lighting and would be clearly marked in aviation charts.

Table 25. Impact of proposed wind farm on GASU Operations

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2.13.2 The Emergency Aeromedical Service (EAS)

The air ambulance service in Ireland is known as the Emergency Aeromedical Service (EAS). The EAS crew (which include National Ambulance Service (NAS) paramedics) deal with time-critical emergency callouts to major emergencies such as road collisions and urgent medical events. The EAS currently operate two air ambulance helicopters operating from two bases:

- Custume Barracks, Athlone, Co Westmeath.
- Rathcoole Aerodrome, Rathcoole, Mallow, Co Cork.

The two helicopter borne emergency air ambulances consist of an Air Corps operated aircraft based at Custume Barracks in Athlone, and an aircraft located at Rathcoole Aerodrome in North County Cork. The nearest EAS base to the proposed wind farm at Littleton is the base in Athlone. The flight times from the EAS base at Athlone are sown in Figure 24.

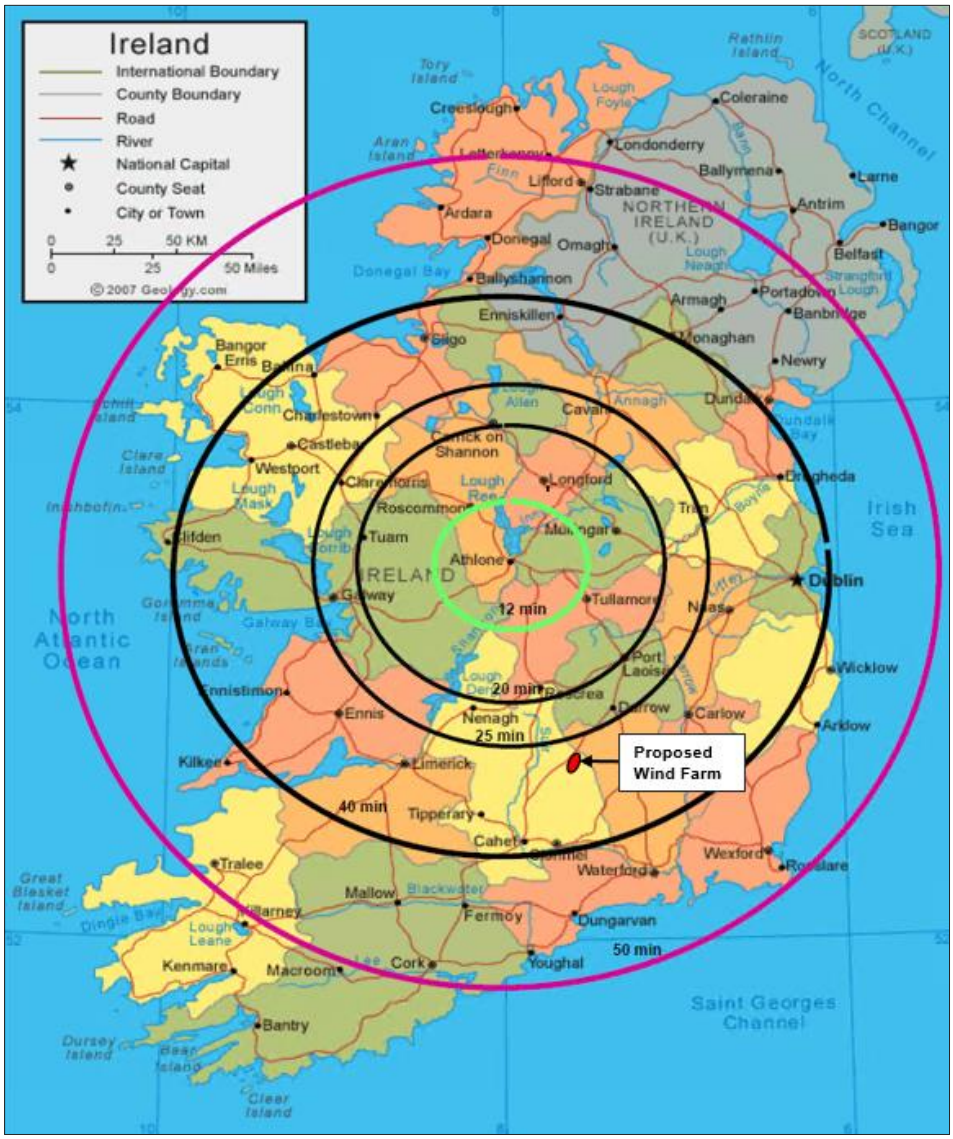


Figure 26. EAS – Flying Times from Athlone

The proposed wind farm site is located in an area that is sparely populated. Helicopter landings are highly unlikely to occur in the subject area due to the boggy terrain of the proposed site.

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Also, should the proposed wind farms be permitted the associated turbine locations would be submitted to the IAA and aviation charts and GNSS databases would be updated accordingly. EAS helicopters would also be fitted with GNSS systems which would clearly identify any potential objects in the operational area (e.g. wind turbines).

In addition, the footprint of the proposed wind farm development is small and any flight diversions for EAS operations would have negligible time impacts. For these reasons, turbines at the proposed wind farm should have no impact on EAS flights from Athlone.

EAS Aircraft	Impact of proposed wind farms – Opinion
Helicopter (Eurocopter EC135)	Low – Helicopter landings at the subject area are highly unlikely to occur as the proposed wind farm site is in an area that is sparely populated and is located on boggy terrain. In addition, the aircraft would be equipped with modern communications systems and navigational equipment. Should the wind farm be permitted, the turbines would be fitted with aeronautical lighting and would be clearly marked in aviation charts.

Table 26. Impact of proposed wind farm on EAS Operations

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3. Summary

A summary of the aviation review for the proposed wind farm at Littleton is provided in Table 28 below.

Item	Impact	Summary
Annex 14 - Obstacle Limitation Surfaces (OLS)	None	The proposed turbines are located outside the OLS Surfaces for Waterford Airport.
Annex 15 - Aerodrome Surfaces	None	Turbines at the proposed wind farm would not penetrate the ICAO Annex 15 Aerodrome Surface for Waterford Airport. All obstacles, if more than 100 meters above terrain for a distance of 45km from center point of Waterford Airport, need to be registered in the IAA Air Navigation Obstacle Data Set. The IAA may request that the turbines be included in the IAA Aeronautical Electronic Obstacle Data Sets. It should be noted that other existing tall structures nearer to Waterford Airport (e.g. existing turbines at Foyle, Ballybay, An Cnoc, Ballincurry, Kill Hill, Ballymartin and Rahora etc.) are also located within the ICAO Annex 15 Aerodrome Surface and are already listed in the IAA Aeronautical Electronic Obstacle Data Sets.
Building Restricted Areas	None	A review shows that Littleton is over 55 km from the BRAs for Waterford Airport. At this distance there would be no impacts due to the proposed wind farm.
Minimum Sector Altitudes (MSA)	None	A review of the Minimum Sector Altitudes (MSA) shows that the proposed wind farm is outside 25 nautical miles from the NDB at Waterford Airport. Therefore the MSA of the relevant sector will not be affected and there will be no impact on the published MSA altitude figures.
Instrument Flight Procedures	None	A review shows that the proposed wind farm is sufficiently far from Waterford Airport that it is highly unlikely that there would be any impacts to instrument flight procedures for flights to/from the airport for precision aircraft.
Communications and Navigation Systems	None	As the proposed wind farm is approximately 61 km from the Localizer and transmitting antenna at Waterford Airport, it is very unlikely that the proposed development will have any impact on these ATS communications and radio navigational aids.
Radar Surveillance Sensors	None	The proposed wind turbines would be located in Assessment Zone 4 (EuroControl guidelines) for SSR and PSR instruments and a detailed Impact Assessment will not be required
Flight Inspection and Calibration	None	A review of the Flight Inspection Procedures indicates that there will be no impact due to the proposed wind farm development.
IAA - Aeronautical Obstacle Warning Light Scheme	None	It is possible that the IAA may request that the wind farm, if permitted, would be fitted with Aeronautical Obstacle Warning Lights in accordance with industry standards. Subject to further consultation with the IAA.
Private Airfields	None	An assessment of private airfields in the vicinity of Littleton indicates that there will be no impact due to the proposed development.
DoD Aeronautical Safeguarding	Observation	The proposed wind farm is partially located within the IAC restricted area along the M8 motorway (i.e. IAC low-level flight route), and the Irish Air Corps may raise concerns in relation to the proposed wind farm development. However, it should be noted that low-level flights along the M8 motorway are likely to avoid the proposed wind farm site due to high terrain to the southeast of the motorway.
Garda Air Support Unit and Emergency Aeromedical Service	None	An assessment of GASU and EAS operations indicate that they are unlikely to be impacted by the proposed wind farm development.

Table 27. Littleton Wind Farm – Aviation Review Summary

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APPENDIX A - ICAO Annex 15 Area 1 and Area 2 Surfaces.

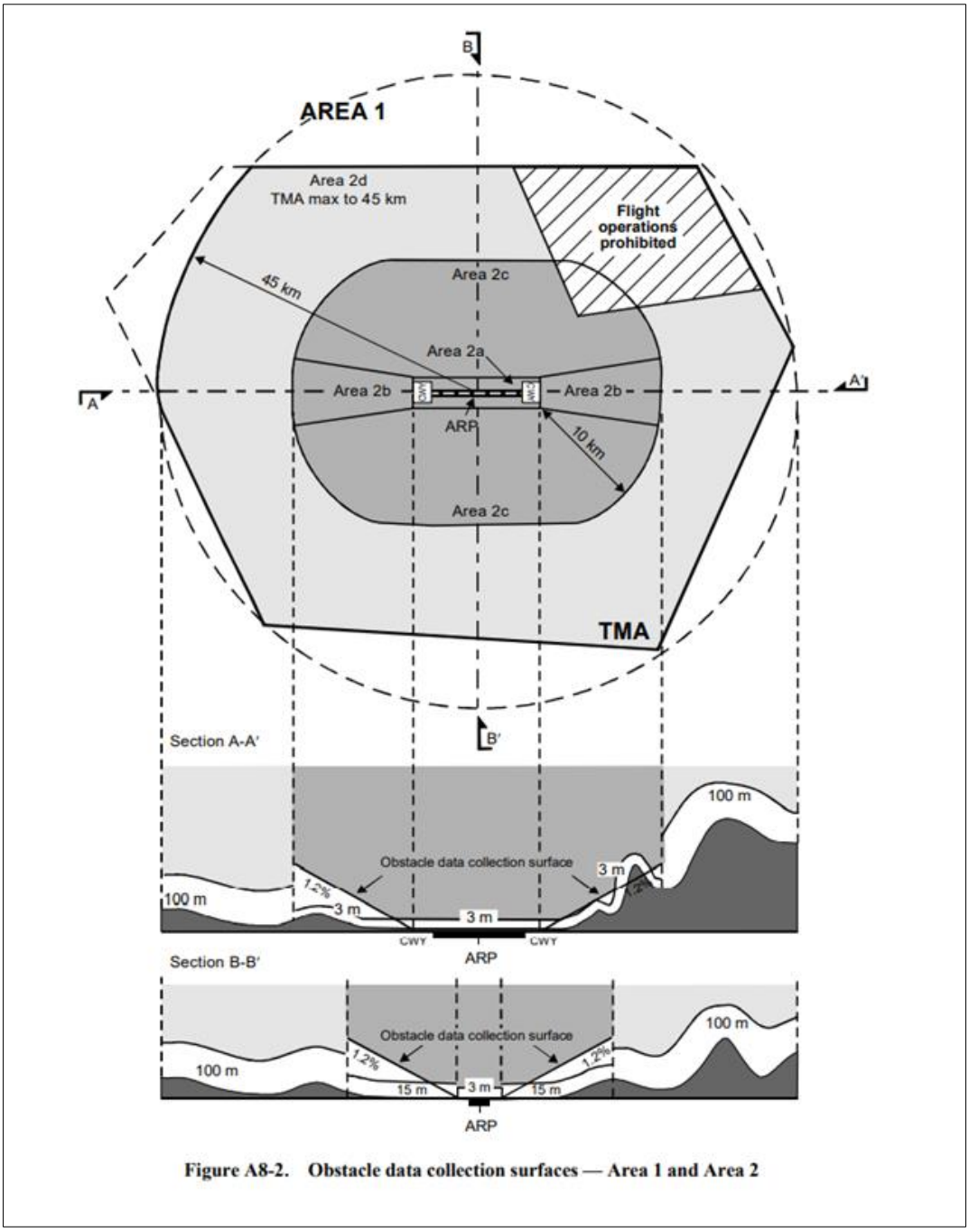


Figure A8-2. Obstacle data collection surfaces — Area 1 and Area 2

Figure A1 - ICAO Annex 15 Area 1 and Area 2 Surfaces.

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APPENDIX B - ICAO Building Restricted Areas.

Figure B1 below shows an example BRA shape for directional facilities. Table B1 provides harmonized guidance figures for the directional navigational facilities in accordance with Figure B1.

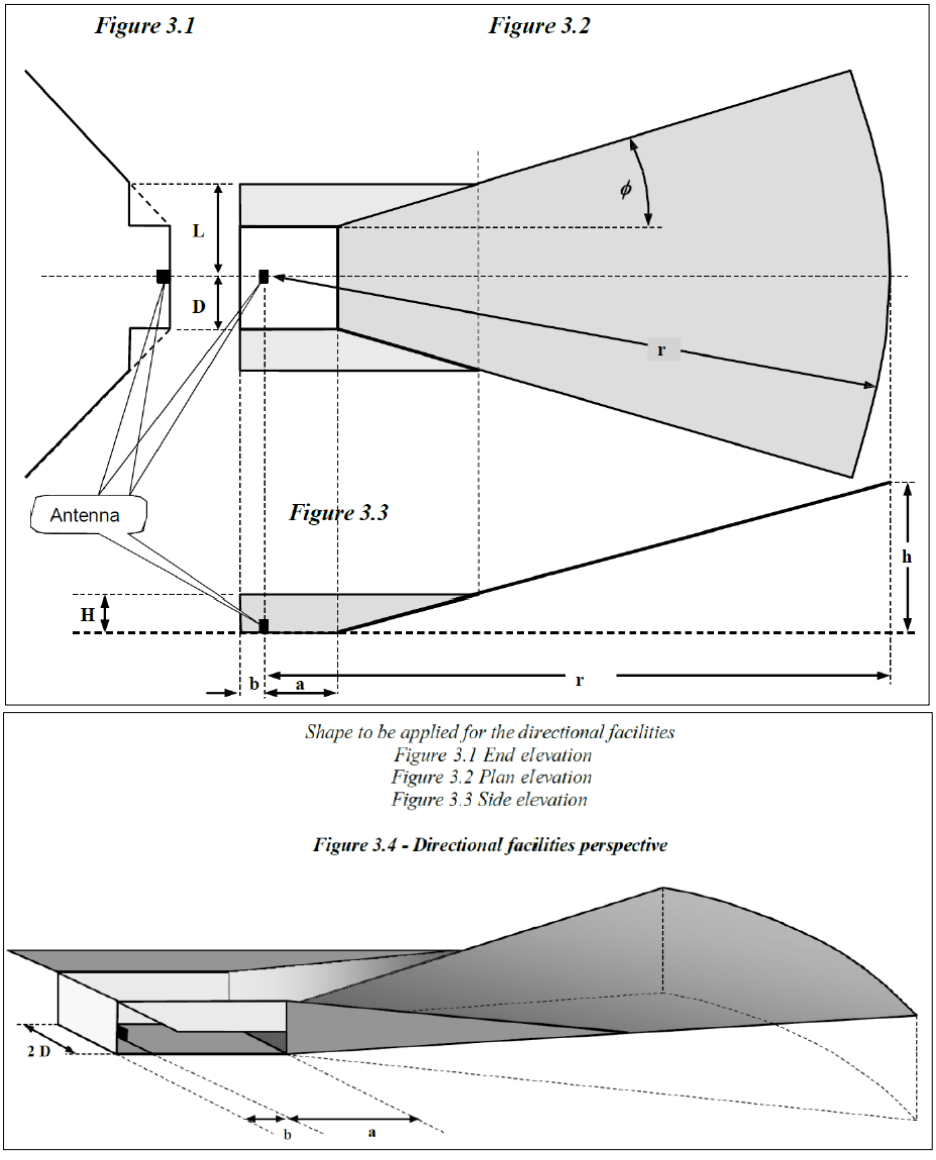


Figure B1 - Example BRA shape for directional facilities (ICAO EUR DOC 015 Figures 3.1-3.4)

*Type of **navigation** facilities*	***A*** *(m)*	***b*** *(m)*	***h****(m)*	***r*** *(m)*	***D*** *(m)*	***H*** *(m)*	***L*** *(m)*	***ϕ*** *(°)*
ILS LLZ (medium aperture single frequency)	Distance to threshold	500	70	a+6000	500	10	2300	30
ILS LLZ (medium aperture dual frequency)	Distance to threshold	500	70	a+6000	500	20	1500	20
ILS GP M–Type (dual frequency)	800	50	70	6000	250	5	325	10
MLS AZ	Distance to threshold	20	70	a+6000	600	20	1500	40
MLS EL	300	20	70	6000	200	20	1500	40
DME (directional antennas)	Distance to threshold	20	70	a+6000	600	20	1500	40

Table B1 - Harmonized guidance figures for the directional navigational facilities (ICAO EUR DOC 015 Table 2)

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APPENDIX C – Air Corps Wind Farm / Tall Structures Position Paper, August 2014

Óglaigh na hÉireann
DEFENCE FORCES IRELAND

Ceanncheatru an Aer Chor
Air Corps Headquarters

08 August 14

GOC AC

Air Corps Wind Farm/Tall Structures Position Paper

Sir,

1. The attached is the draft Air Corps Position Paper agreed and developed in concert with the flying units under the auspices of CAS Ops.
2. It is recommended that it be forwarded to the Directorate of Operations for transmission to the Department of Defence.
3. The AC position contained within this paper should be notified to planning authorities including An Bord Pleanala. It should also be forwarded to the Department of the Environment, Heritage and Local Government to inform its policies and guidance in respect of wind farms.

Raymond Martin, Lt Col
CATSO

CATSO, Ceanncheatru an Aer Chor, Aerodrom Mhic Easmuinn, BAC 22.
CATSO Air Corps Headquarters, Casement Aerodrome, Baldonnel, Dublin 22
Ph +353 (0)1 403 7513 *Fax: +353 (0)1 403 7850*

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Óglaigh na hÉireann
DEFENCE FORCES IRELAND

Ceanncheatru an Aer Chor
Air Corps Headquarters

Air Corps Wind farm/Tall Structures Position Paper.

1. **Objective:**
This position paper is intended to ensure that
   a. Air Corps operations and training may be accomplished in a safe and economical manner;
   b. Baldonnel remains a viable aerodrome for IFR and VFR traffic;
   c. The ability to train military flying skills is protected;
   d. Vital navigation routes to and from the regions to Baldonnel and the Dublin area are protected to safeguard the ability of the Air Corps to fulfill its role.

2. **Statement of position.**

   a. The Air Corps is opposed the erection of wind farms or other obstacles which will affect its ability to train and operate in a safe and economic manner.

   b. The Air Corps is opposed to any wind farms or tall structures in the following areas:

   (1) Lands underlying military airspace used for flying activity

   (a) The area contained in Danger Area EI-D1.
   (b) The area contained in Danger Area EI-D5.
   (c) The area contained within Danger Area EI-D6.
   (d) The area contained within Danger Area EI-D13.
   (e) The area contained within Danger Area EI-D14.
   (f) The area contained within Restricted Area EI-R15.
   (g) The area contained within Restricted Area EI-R16 within 20NM of Baldonnel.
   (h) The area contained within Military Operating Areas, MOAs 3 and 4 within 20NM of Baldonnel.

   (2) Areas wherein military flying occurs at low level as identified in the annexes listed below.
   (a) Annex A: Low flying training areas within MOA 4 in the areas of
      a. Blessington
      b. Edenderry/Allenwood/Rathangan
      c. Kilmeague/Newbridge

   (b) Annex B: low flying training area West (LFTA WEST).

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(3) A distance of 5NM or less from military installations.

c. The following routes are identified as critical low level routes in support of Air Corps operational requirements and the Air Corps is opposed to the erection of wind farms or tall structures within 3NM of the route centerline which could affect Air Corps' ability to access regional areas.

(a) N/M1
(b) N/M2
(c) N/M3
(d) N/M4
(e) N/M6
(f) N/M7
(g) N/M8
(h) N/M9
(i) N/M11
(j) N25
(k) N17 between Sligo and Knock
(l) N15/N13 between Sligo and Letterkenny
(m) N14 from Lifford to Letterkenny and R245 and R247 from Letterkenny to Fanad Head.

Applications or proposals for structures in these areas of a height greater than 45m above ground level at the site of the object must be referred to Irish Air Corps for assessment of potential impact on flight operations.

d. In MOA 4 outside of the areas identified in b.(1) (2) and (3), and in MOA 5, applications or proposals for objects of a height greater than 45m above ground level at the site of the object must be referred to the Irish Air Corps for assessment of potential impact on flight operations.

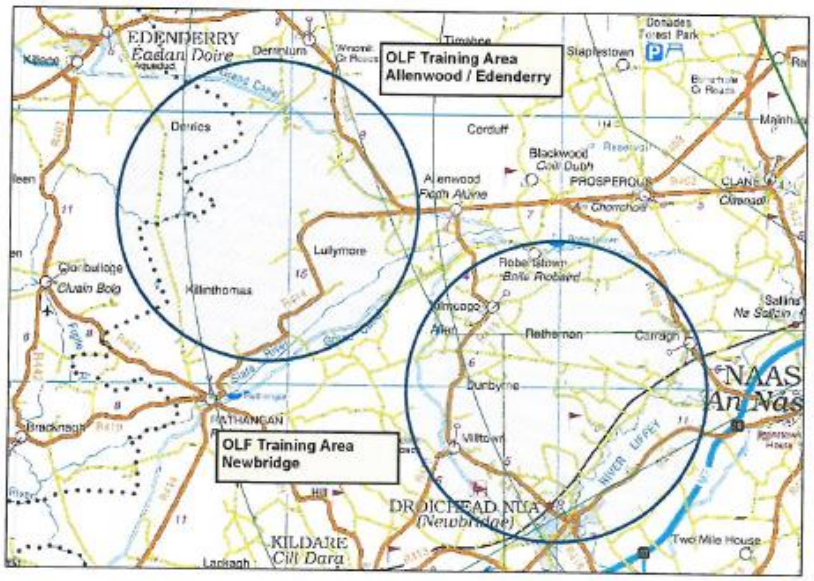
e. In all locations where wind farms or masts are permitted it should be a condition that they meet the following lighting requirements

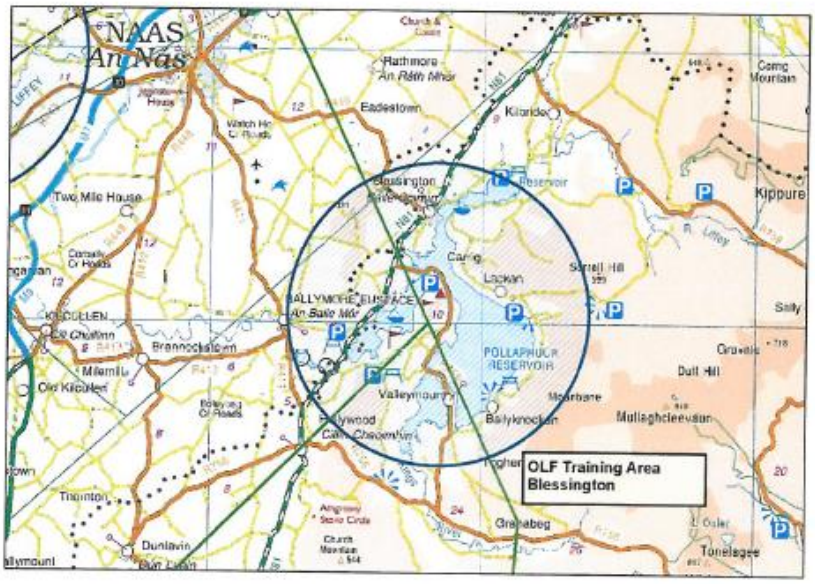
(1) Single turbines or structures, or turbines delineating corners of a wind farm, should be illuminated by high intensity strobe lights (Red).
(2) Obstruction lighting elsewhere in a wind farm will be of a pattern that will allow the hazard be identified and avoided by aircraft in flight.
(3) Obstruction lights used should be incandescent or of a type visible to Night Vision Equipment. Obstruction lighting fitted to obstacles must emit light at the near Infra-Red (IR) range of the electromagnetic spectrum, specifically at or near 850nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light.

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Annex A

Low Flying Areas - MOA 4





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Annex B

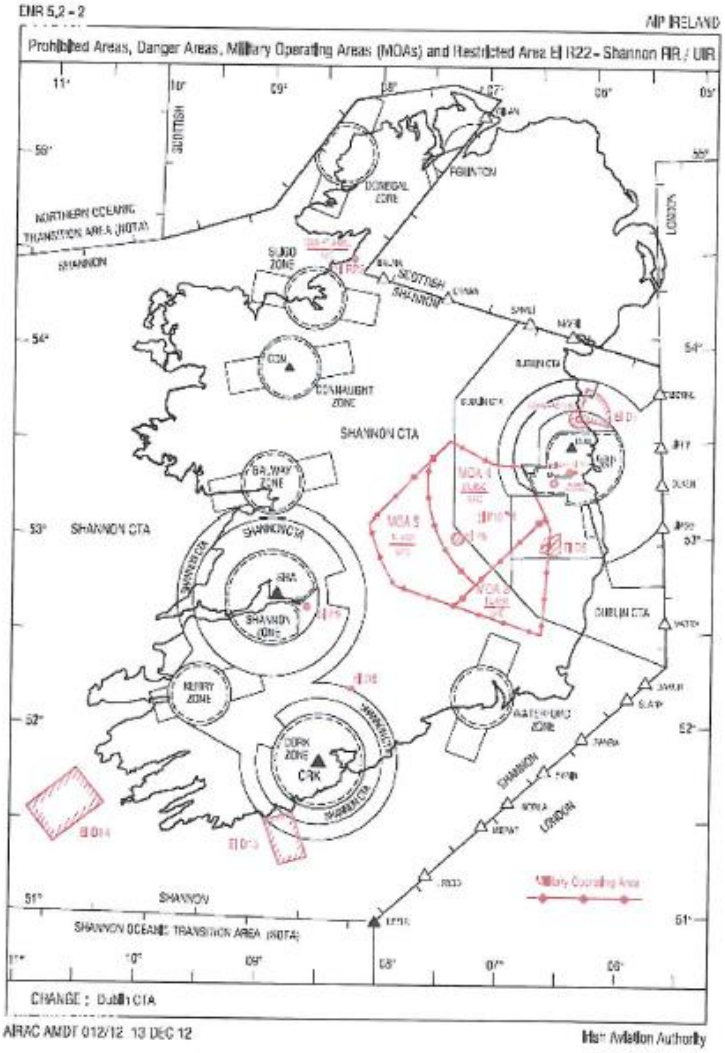
Low Flying Area – LFTA WEST

1. Area contained within the following grid L6972; L6945; M0745; M0772
2. Routes are primarily within valley areas.
3. Applications for wind farms/masts should be referred to Air Corps Operations for assessment against low flying routes.

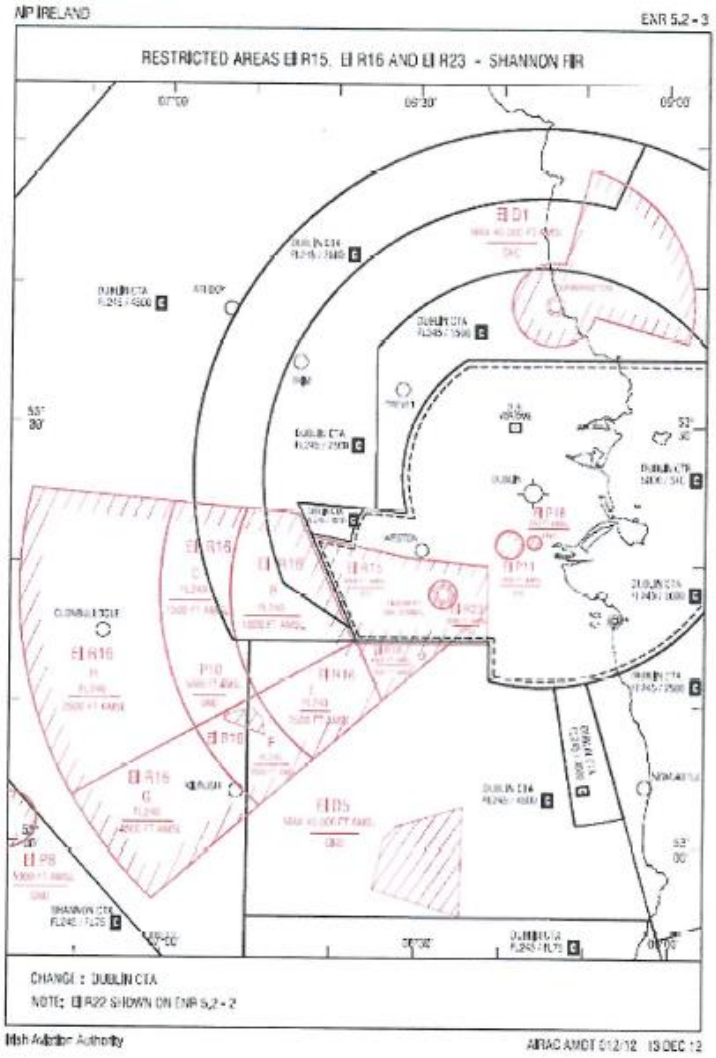
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Annex C

Designated Airspace
Restricted Areas, Danger Areas and Military Operating Areas



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Annex D

Low Level Routes



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APPENDIX D – Radius of Turn Calculations

The Radius of Turn calculations are based on the following formula which was taken from the "*Pilot's Handbook of Aeronautical Knowledge – Federal Aviation Administration - 2016*"

Radius of Turn: $R = V^2 / 11.26 \tan \theta$

V = Velocity
Tan θ = Tangent of Bank Angle

Sample Calculation:

An aircraft travelling at a velocity of 80 KTs (V) turning with a bank angle of 25° (Tan θ).

Radius of Turn = 6400/11.26 x 0.47 = 1209 feet (0.2 NM)

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An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

Your Ref: P20211-FT-XX-XX-LT-AT-0002
Our Ref: G Pre00401/2025 (Please quote in all related correspondence)

23 January 2026

Fehily Timoney
Core House
Pouladuff Road
Cork

Via email: conor.auld@ftco.ie

Proposed Pre Planning Development: Fehily Timoney and Company for BnM and SSE Renewables: proposed wind farm development at Littleton, Co. Tipperary: Littleton, Co. Tipperary

A chara

I refer to correspondence received in connection with the above. Outlined below are heritage-related observations/recommendations co-ordinated by the Development Applications Unit under the stated headings.

Archaeology

The information provided was not sufficiently detailed to allow for a full assessment of the archaeological implications of this proposal. The Department, however, wishes to advise that as part of EIA requirements you are obliged to retain the services of a Consultant Archaeologist to carry out the Archaeological Impact Assessment (AIA) as part of the overall Cultural Heritage Impact Assessment (CHIA) of the proposed development, which should be integrated into the finalised EIAR.

It is noted that the development is large in scale. Given the scale, extent and location of the proposed development and its proximity to a number of Recorded Monuments it is possible that subsurface archaeological remains could be encountered during the construction phases that involve ground disturbance.

In line with national policy, see Section 3.6 of Frameworks and Principles for the Protection of the Archaeological Heritage 1999, the Department recommends that an Archaeological Impact Assessment, as described below, should be prepared to assess the potential impact on archaeological remains in the area where development is proposed to take place. And that such an assessment be submitted with a future planning application

Archaeological assessment;

The applicant should engage the services of a suitably qualified archaeologist to carry out an archaeological impact assessment (of the development site. The Archaeological Impact Assessment must include:

- A baseline archaeological and historical study comprising site inspection/s by a suitably qualified Archaeologist and documentary research including reviews of historical, cartographic and aerial photography sources.
- Walkover surveys and field inspections
- An Archaeological/Historic Landscape study.
- Visual Impact Assessment
- The desk-study and field inspection regime should inform:
    - Targeted non-intrusive advance geophysical survey or prospection (such as Resistivity, Magnetometer or Ground Penetrating Radar Surveys)
    - Targeted peatland surveys
    - Targeted advance archaeological test excavation
- Any and all intrusive advance investigations (such as, but not limited to, ground investigations for soils/geology/hydrogeology) carried out as part of the EIA or design process should be subject to a programme of archaeological monitoring by a suitably qualified archaeologist

Nature Conservation

Meeting date yet to be confirmed.

The above observations and recommendations are based on the papers submitted to this Department on a pre-planning basis and are made without prejudice to any observations the Minister may make in the context of any consultation arising on foot of any development application referred to the Minister, by the planning authority, in his role as statutory consultee under the Planning and Development Act 2000, as amended.

You are requested to send further communications to the Development Applications Unit (DAU) at **manager.dau@npws.gov.ie**.

Is mise le meas,



Diarmuid Buttimer
Development Applications Unit
Administration

FEHILY TIMONEY

DESIGNING AND DELIVERING A SUSTAINABLE FUTURE

National Monuments Service,
Department of Housing, Local Government and Heritage,
Custom House,
Dublin 1
By email:

nationalmonuments@housing.gov.ie
manager.dau@housing.gov.ie

Our Ref: P20211-FT-XX-XX-LT-AT-0002

10 December 2025

Re: Proposed Wind Farm - Littleton Wind Farm, Co. Tipperary

Dear Sir, Madam,

Fehily Timoney and Company are acting on behalf of our client, Littleton Wind Farm DAC (part of a 50:50 joint venture between BnM and SSE Renewables), in relation to a proposed wind farm development at Littleton, Co. Tipperary.

As part of the EIA scoping process we had previously reached out to the National Monuments Service in September 2021 and May 2025, to date no response has been received.

As our client is intending to lodge the application for permission with An Coimisiún Pleanála in early March 2026, we are contacting the National Monuments Service to inform them of the proposed development and to arrange a meeting to discuss if deemed necessary.

The proposal includes the following:

- A 10-year permission and a 35-year operational life from the date of commissioning of a Proposed Wind Farm;
- Construction of 11 no. wind turbines with a blade tip height of 200 m, a hub height of 119 m and a rotor diameter of 162 m;
- Construction of permanent turbine foundations and crane pad hard standing and assembly areas including associated drainage infrastructure;
- Construction of 15.44 km of new internal access tracks and associated drainage infrastructure;
- Upgrading of 2.95 km existing tracks and associated drainage infrastructure;
- Creation of 3 no. new site accesses (2 no. on the Local Road L4114 and 1 no. on the Regional Road R639) to serve as construction and operation accesses to the Proposed Wind Farm Site;
- Upgrading of 3 no. existing site entrances (1 no. on the L2201 and 2 no. on the Local Road L4153) to serve as construction and operation accesses to the Proposed Wind Farm Site;
- Installation of new pipe and box culverts within the wind farm site where proposed infrastructure crosses existing drains;

- All associated drainage and sediment control including interceptor drains, cross drains, sediment ponds and swales;
- Development of 1 no. on-site construction borrow pit and associated ancillary drainage;
- 5 no. temporary construction site compounds and associated ancillary infrastructure including parking; 1 no. temporary security cabins .
- Erection of 1 no. permanent meteorological mast to a height of 120 m above ground level;
- Construction of 1 no. permanent onsite 110 kV electrical substation to EirGrid specifications, including an associated compound and ancillary infrastructure comprising:
    - Control buildings, equipment storage and welfare facilities;
    - Electrical infrastructure;
    - EV Parking and charging;
    - Wastewater holding tank;
    - Rainwater harvesting tank;
    - Telecommunications tower to a height of 36m and associated fencing, foundation and hard-standing area
    - Lightning masts and lighting poles
    - Security fencing and stock proof fencing.
- Installation of medium voltage underground electrical and communication cabling connecting the wind turbines to the proposed on-site substation and associated ancillary works;
- All associated infrastructure, services and site works including excavation, earthworks, peat and spoil management;
- Creation of dedicated peat and spoil deposition areas and berms for the management of peat and spoil within the Site;
- Vegetation clearance to facilitate construction and operation of the proposed development;
- Temporary accommodation works along the Proposed Turbine Delivery Route to facilitate turbine component deliveries;
- Construction of 3.95 km of a new recreational amenity in the form of walking/cycling trails within the Wind Farm Site and existing and proposed associated car parks;
- Biodiversity enhancements measures within the Proposed Biodiversity Enhancement and Management Plan Lands, all of which are contained within the Wind Farm Site.

Whilst consent is not being sought for the proposed grid connection route to facilitate a connection to the national transmission grid network at Ballyragget, Co. Kilkenny, it is assessed as part of the EIAR.

Please see enclosed with this letter figures illustrating the location of the proposed wind farm and grid connection route.

An Archaeological Impact Assessment has been undertaken for the proposed development by John Cronin and Associates, this has also informed the proposed layout of the wind farm development. An Archaeological, Architectural and Cultural Heritage chapter will be included in the EIAR.

Please do not hesitate to contact us if you have further queries, if possible by 23rd January 2026.We would welcome the opportunity to meet to discuss the proposed development in more detail, ahead of finalising the EIAR and submitting the planning application.

Yours sincerely,



_____

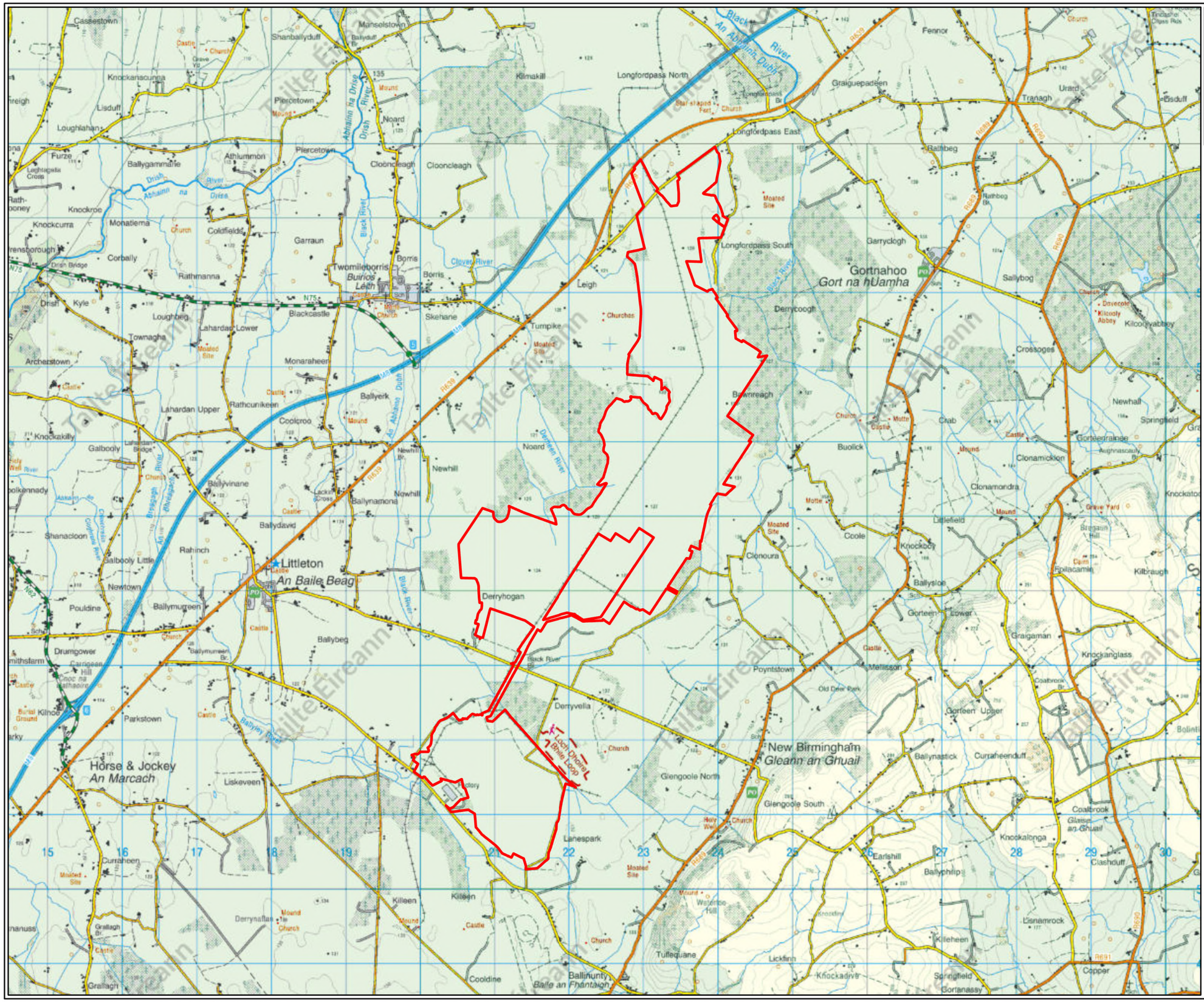
Conor Auld, Principal Planner

for and on behalf of **Fehily Timoney and Company**

Encl./

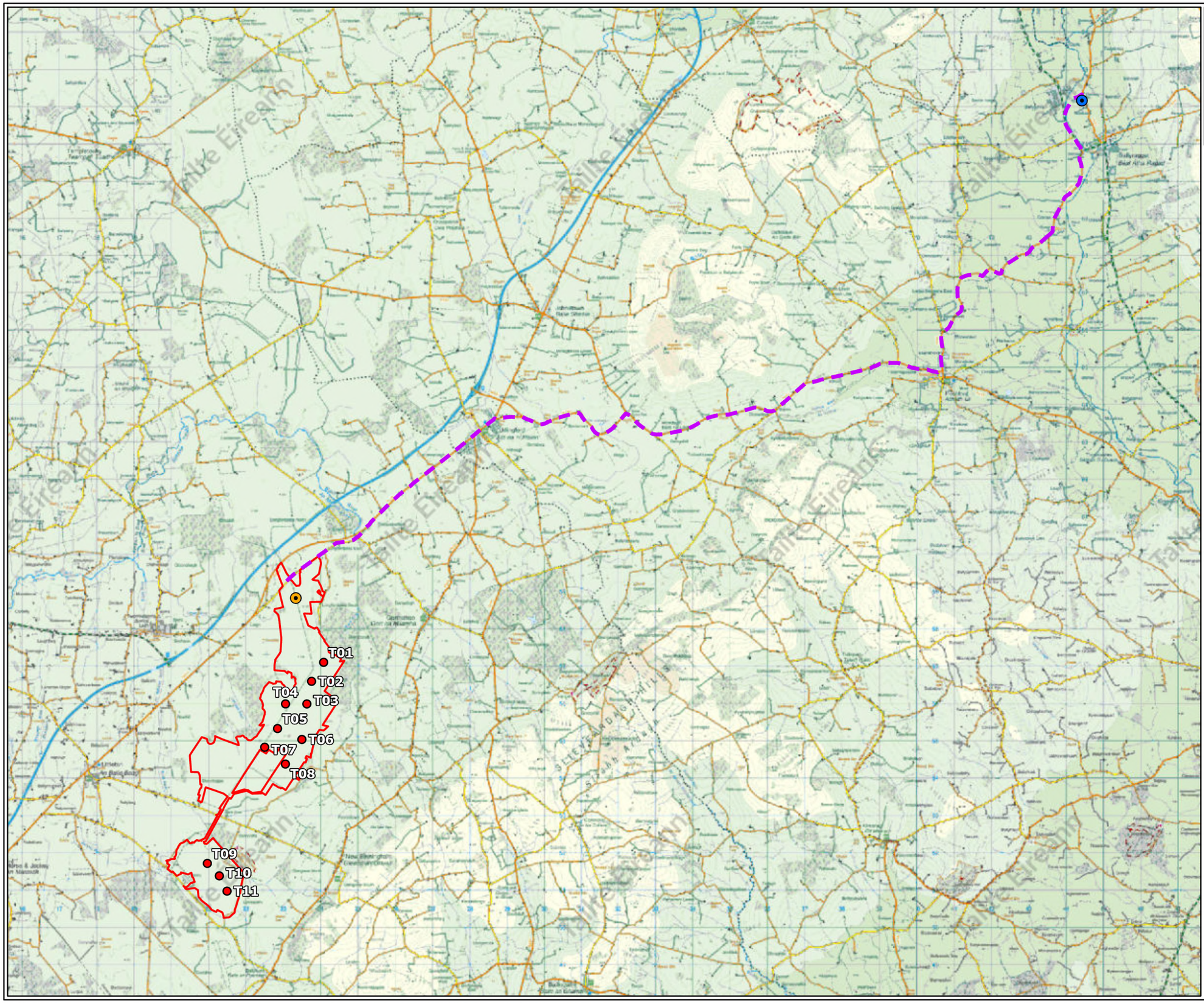
World Topographic Map: Esri, HERE, Garmin, FAO, NOAA, USGS
MapGenieDiscoveryITM: © Tailte Éireann
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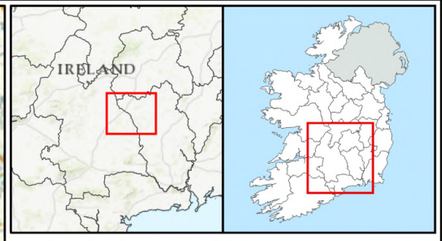
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Monatiera
Corbally
Rathmanna
Drish
Kyle
Loughbeg
Townagha
Archerstown
Lahardan Upper
Knockakilly
Galbooly
Ballyvinane
Shanballyduff
Mansolstown
Piercetown
Athlummon
Coldfields
Garraun
Twomileborris
Buiríos Léith
Borris
Skehane
Blackcastle
Lahardan Lower
Monaraheen
Rathcunikeen
Coolcroo
Ballyerk
Newhill
Ballynamona
Nowhill
Ballydavid
Littleton
An Baile Beag
Rahinch
Galbooly Little
Newtown
Pouldine
Ballymurreen
Ballybeg
Drumgower
Parkstown
Horse & Jockey
An Marcach
Liskeveen
Curraheen
Killeen
Derrynaflan
Gralagh
Ballinunty
Baile an Fhantaigh
Cooldine
Tullequane
Lickfinn
Knockadiva
Springfield
Gortanassy
Copper
Lisnamrock
Killeheen
Clashduff
Earlshill
Ballyphilips
Knockalonga
Coalbrook
Glaise an Ghuail
New Birmingham
Gleann an Ghuail
Ballynastick
Curraheenduff
Glengoole North
Glengoole South
Lanespark
Derryvella
Poyntstown
Old Deer Park
Gorteen Upper
Gorteen Lower
Graigaman
Knockanglass
Ballysloe
Knockboy
Littlefield
Clonamondra
Clonoura
Coole
Derryhogan
Ballyard
Ballyhea
Ballyhea Br.
Ballyard Br.
Ballyard Cross
Ballyard Bridge
Ballyard Lower
Ballyard Upper
Ballyard Hill

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Legend

- Site Boundary
- Grid Connection Route
- Ballyragget 38kV Substation
- Onsite Substation
- Turbine Locations

TITLE:	Grid Connection Route		
PROJECT:	Littleton Windfarm		
FIGURE NO:	4.3		
CLIENT:	Littleton Wind Farm DAC		
SCALE:	1:100,000	**REVISION:**	0
DATE:	27/11/2025	**PAGE SIZE:**	A3

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APPENDIX 2.3

Community Engagement Report

Littleton Wind Farm Community Engagement Report

April 2026



Powering
Green Energy
Together

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1. Introduction

This Community Engagement Report has been prepared to document and record the engagement undertaken with the local community in respect of the proposed Littleton Wind Farm (the Proposed Development) during the pre-planning phase. The Applicant for the Proposed Development is Littleton Wind Farm DAC, a designated activity company, formed as part of a 50:50 joint venture between Bord na Móna (trading as BnM) and SSE Renewables.

The Proposed Development was launched in 2021 by Bord na Móna Powergen Ltd. In 2024, BnM and SSE Renewables announced a joint venture partnership to deliver 800 MW of onshore wind energy – which includes the Proposed Development. Since 2021, the Project Team has conducted an extensive engagement and consultation programme in relation to the Proposed Development with local stakeholders, members of the public, residents, and community groups. The objective of the consultation programme was to ensure that the views and concerns of all were considered as part of the project design and Environmental Impact Assessment (EIA) process.

This report is informed by a number of wind energy industry's best practices and guidelines, namely:

1. The Wind Energy Development Guidelines[1] (2006), which state that:

   "While it is not a mandatory requirement, it is strongly recommended that developers of a wind energy project should engage in active consultation and dialogue with the local community at an early stage in the planning process, ideally prior to submitting a planning application."

2. The Preferred Draft Approach to Wind Energy Development in Ireland[2] (June 2017), which states the following with respect to planning applications for wind farms:

   "Planning applications must contain a Community Report prepared by the applicant which will specify how the final proposal reflects community consultation. The Community Report must also outline steps taken to ensure that the Proposed Project will be of enduring economic benefit to the communities concerned."

3. The Draft Revised Wind Energy Guidelines[3] (Department of Housing, Planning and Local Government, 2019) has retained this position, stating the following:

   "In order to promote the observance of best practice, planning authorities should require applicants to prepare and submit a Community Report with their planning application and a condition on any subsequent planning permission should require developers to carry out the development in accordance with the approved Community Report."

This Community Report outlines the public consultation and community engagement initiatives undertaken by the Project Team prior to the submission of the planning application for the Proposed Development. It also outlines the key issues identified during the community consultation process, how the final design of the Proposed Development reflects community consultation and the steps taken to ensure that the Proposed Development will be of enduring economic benefit to the communities concerned.

[1] The Department of the Environment, Heritage and Local Government, Wind Energy Planning Guidelines 2006, p. 19
[2] The Department of Communications, Climate Action and Environment and Department of Housing, Planning, Community and Local Government, Information Note Review of the Wind Energy Development Guidelines 2006 "Preferred Draft Approach", 2017 p.8
[3] The Department of Housing, Planning and Local Government, Draft Revised Wind Energy Development Guidelines 2019, p. 4

2. Consultation with the Local Community

The Proposed Development was launched by Bord na Móna Powergen Ltd (trading as BnM), in April 2021, during the Covid-19 pandemic. This timing presented a number of significant challenges, including restrictions on in-person meetings and community events. Despite these obstacles, the Project Team adapted by embracing virtual engagement tools and at all times endeavoured to carry out engagement on the Proposed Development in a proactive manner that was both safe and risk-free for the health and wellbeing of all involved and in full compliance with the Government's Covid-19 restrictions in place at the time. This section of the Community Report outlines the engagement activities carried out for the Proposed Development and the steps taken to overcome the challenges presented by the global pandemic.

2.1 Summary of Engagement

Between 2021 and 2025, BnM, and later the BnM–SSE Renewables Joint Venture, undertook an extensive and structured community engagement programme for the Proposed Development. This Programme was adapted throughout to reflect evolving Covid19 public health restrictions and incorporated household outreach, virtual platforms, virtual meetings, communication with elected representatives, and public information events.

The Proposed Development was launched in April 2021, during a period when Covid-19 restrictions prevented traditional in-person consultation. To ensure continued communication, the Project Team implemented a suite of alternative engagement measures, including a dedicated project website, a 3D virtual consultation room, and appointment-only online Community Engagement Clinics. Between April and May 2021, two online clinics were held. Across Phases 1 and 2, a total of 70 feedback submissions were received from the public.

In October - November 2021, updated information packs, including the draft turbine layout, were delivered to approximately 190 homes, supported by targeted print and radio advertising and updated online resources.

On the 17th of November 2021, 63 letters were sent to the Mailing List to inform subscribers of the forthcoming community engagement sessions taking place at Littleton, Glengoole and Gortnahoe.

A series of public information and community engagement sessions were held during November and December 2021 at Littleton, Glengoole and Gortnahoe. These sessions provided local residents and stakeholders with an opportunity to learn more about the project, ask questions, and share feedback directly with the project team. The sessions were well attended and formed part of an ongoing programme of community engagement to inform the development of the project and ensure local views were considered as the project progressed. These sessions were held in line with the most up to date Covid-19 Government Health Guidelines at that time.

Following the announcement of the Joint Venture between BnM and SSE Renewables in March 2024, updated project information was delivered to approximately 190 homes within 2 km of the proposed turbines.

In September 2025, refined packs containing the final turbine layout and draft amenity plan were distributed to 190 homes. A Public Information Event was held at Moycarkey Borris Community & Sport Centre, Ballybeg, Littleton, Thurles, Co. Tipperary, E41 A0V5 on 8th October 2025 with circa 50-60 people in attendance,

providing an opportunity for direct engagement with the Project Team and specialist consultants.

Throughout the pre-planning period, engagement was further supported through ongoing correspondence, meetings with residents and community groups, and continuous availability of a dedicated Community Liaison Officer. A total of circa 74 individuals joined the project mailing list between 2021 and 2026, ensuring continued communication and transparency.

Local representatives were also kept informed. In April 2021, Tipperary County Councillors and relevant TDs were contacted electronically and provided with project information materials, including booklets, maps, letters, and questionnaires, due to restrictions on in-person briefings. Additional updated information was issued to them again in October 2021, November 2021, March 2024, and September 2025, including invitations to attend online or in-person briefing sessions as circumstances allowed.

2.2 Notification of Local Representatives

As a consequence of the Covid-19 Pandemic, travel and meeting restrictions in place during April 2021, the Applicant was not in a position to hold an in-person briefing session for the Municipal District Councillors to coincide with the first round of public consultation events. Accordingly, in April 2021, by way of electronic communication, the Project Team informed Tipperary County Councillors for the Municipal Districts of Thurles and Carrick-on-Suir of the company's intention to develop a wind farm on Littleton Bog to be known as Littleton Wind Farm. As part of this communication, the Councillors for the above-mentioned Municipal District were provided with a Project Information Booklet, A2 Double-sided Map, Project Information Letter, and a Feedback Questionnaire. The purpose of this communication was to provide them with information on the Proposed Development and invite them to contact the Project Team. *(See Appendix 1 – Project Information Pack, Spring 2021).*

In addition to informing the Councillors of the above-mentioned Municipal Districts about the Proposed Development, relevant TDs representing the Dáil Éireann Constituency of Tipperary were also sent an electronic communication in April 2021 to provide them with information on the Proposed Development and invite them to attend an online Community Engagement Clinic with the Project Team.

As a result, in October 2021, by way of electronic communication, the Project Team provided relevant TDs and County Councillors with more information on the Proposed Development, including Project Information Booklet, Photomontage Booklet, Virtual Room, A2 double-sided Map, Project Information Letter and Feedback Questionnaire. Due to the pertaining Covid-19 restrictions in place, the Applicant was not in a position to hold a briefing session for TDs and Councillors in advance of the second round of Community Information engagements. *(See Appendix 2 - Project Information Pack, Autumn/Winter 2021*).

In November 2021, by way of electronic communication, the relevant TDs and Councillors were issued a letter providing details of the forthcoming community engagement sessions taking place at Littleton, Glengoole and Gortnahoe. *(See Appendix 3 - Community Engagement Sessions Letter)*

In March 2024, by way of electronic communication, the relevant TDs and Councillors were issued a letter announcing the joint venture partnership between BnM and SSE Renewables which incorporated the Proposed Development. *(See Appendix 4 - Joint Venture Announcement).*

In September 2025, by way of electronic communication, the relevant TDs and Councillors were issued a copy of the final layout for the Proposed Development and were invited to attend an in-person information session on the 8th of October 2025 at Moycarkey-Borris Community & Sport Centre, Ballybeg, Littleton, Thurles, Co. Tipperary, E41 A0V5. As earlier sessions were constrained by pandemic travel and meeting restrictions, this additional information session was scheduled to enable further engagement between the Project Team and local stakeholders. *(See Appendix 5 – Final Layout and Draft Amenity Plan)*

In October 2025, the Project Team facilitated an on-line briefing session with local Councillors to discuss the proposed final layout.

2.3 Notification of Local Community

At the time of the launch of the Proposed Development in April 2021, Covid-19 restrictions prohibited any house-to-house activity in particular knocking on doors of households to speak with residents.Accordingly, to inform local residents about the Proposed Development, the Community Liaison Officer distributed a Project Information Pack regarding the Proposed Wind Farm to circa 490 households within a distance of approximately 2km from the site boundary through the letterbox or via the post-box of each household between 19th April and the 5th May, 2021.

The Project Information Pack *(Appendix 1)* contained the following:

- Project Information Brochure – *including Community Liaison contact details for any follow-up queries or concerns.*
- An A2 double-sided map – *outlining the study area for the Proposed Development.*
- A Feedback Questionnaire – *to submit any comments/suggestions or identify other people/groups who should be included on the circulation list for project updates.*
- A Communications Opt-Out form – *to no longer receive related information on the Proposed Development.*
- A Consent form – *to join the Proposed Development's postal system.*
- A Freepost envelope – *to facilitate the return of completed Feedback Questionnaire; Communications Opt-Out form and Consent form to the Project Team.*

At the same time, the Proposed Development was launched with a print and radio advertising campaign (details provided in section 2.4.1 and 2.4.2 and a dedicated website inviting local residents to book an appointment at an online Community Engagement Clinic with the Project Team *(Appendix 6 – Print Media Advertisement Spring 2021*). The website also contained links to an online Virtual Consultation Room which provided information on the following:

- Cover Letter
- Project Information Booklet
- Location Map of the Proposed Development Site
- Feedback Questionnaire.

2.4 Community Information Sessions – Phase 1

Due to the Covid-19 restrictions in place regarding public gatherings in April 2021, it was not possible to arrange formal Community Information Sessions in the local area. Instead, a dedicated project website and Virtual consultation room were launched containing all the information that would normally be displayed at our traditional Community information Sessions, namely:

- Cover Letter
- Project Information Booklet
- Map of the Location of the Proposed Development Site.
- Feedback Questionnaire

As an alternative to the Community Information Session format, residents were invited, via the Project Feedback Questionnaire and dedicated website, to complete an expression of interest form to attend Community Engagement Clinics, which were to be held online and by appointment only. The Project Team received 8 expressions of interest to attend its online Community Engagement Clinics and subsequently, held two Clinics by appointment, in line with the Covid-19 Guidelines in place by the Government at that time. Residents were also invited to contact our Community Liaison Officer and request hard copies of any of the above-mentioned information which would be sent to their homes.

2.4.1 Print Advertisement of Public Consultation

Advertisements with details on the Proposed Development were carried by local newspapers for two weeks in April 2021. A map was displayed indicating the Proposed Development site and all other relevant project details, including contact information, were advertised in three local papers, namely the Kilkenny People, Nenagh Guardian and Tipperary Star. *(Appendix 6 – Print Media Advertisement Spring 2021).*

2.4.2 Broadcast Advertisement of Community Information Sessions

Details of the Proposed Development were broadcast on local radio (TippFM) three times daily from the 8th – 10th April 2021 and again three times daily from the 6th – 8th May 2021 to inform the local community of the launch of the Proposed Development and to direct them to the dedicated website or to contact our Community Liaison Officer for more information.

2.4.4 Virtual Room

A virtual consultation room for the Phase 1 sessions was created and launched on 1st April 2021 and was available online until 25th May 2021. Access to the virtual room was available directly through the virtual room link and also through the dedicated project website. The virtual consultation room provided a 3D virtual environment to enable an immersive visitor experience to a wide demographic of key stakeholders including local communities and the wider community.

For this consultation, geographical breakdown showed visitors from counties Tipperary, Dublin, Cork, and Kilkenny. The website also had visitors from different countries including United Kingdom and USA. The primary areas explored by visitors varied from month to month, however the 'Top Hotspot Clicks' frequently included the Welcome Video, Littleton Development Study Area Map, Proposed Littleton Wind Farm overview and Community Engagement. There were 256 visits to the 'Virtual Room' between April and May 2021. *(See Appendix 7 – Virtual Consultation Room Report 2021).*

2.4.5 Feedback Forms

In addition to the Clinics, the Project Team received 58 responses via the dedicated feedback form between April and May 2021. The main queries/concerns raised during this stage of consultation were:

Proximity of Turbines	Noise Levels
Number of Turbines	Turbine locations
Ecological sensitivity/wildlife	Property Prices
Community Benefits - Employment	Engagement and consultation
Planning and road infrastructure	Health

2.4.6 Mailing List

Between April 2021 and February 2026, circa 90 people signed up for the Proposed Development's mailing list.

2.5 Community Information Sessions – Phase 2

Due to the Covid-19 restrictions in place regarding public gatherings in October 2021, it was still not possible to arrange formal Community Information Sessions in the local area. Instead, the dedicated project website and virtual consultation room were launched containing all the information that would normally be displayed at our traditional Community information Sessions, namely:

- Cover Letter
- Project Information Booklet
- Draft Wind Turbine Layout A2 Map
- 360-degree Photomontage Viewer
- Feedback Questionnaire.

Between the 17th of October and the 17th of November 2021, the Community Liaison Officer visited circa 490 homes from the boundary of the site to provide them with a detailed project pack *(Appendix 2)* containing updated information on the Proposed Development, namely the draft layout. The information distributed to each household consisted of:

- Project Information Booklet
- Photomontage booklet
- Draft Wind Turbine Layout A2 Map
- Feedback Questionnaire
- Freepost Envelope.

Residents were also informed that, subject to the proposed further easing of Covid-19 restrictions (then scheduled for the 22 October 2021) it was the Project Team's intention to hold a series of Community Engagement Sessions in late November in the locality of the proposed development. While a schedule of

fixed dates was not available at this time (*due to pending confirmation of the easing of restrictions mentioned above)*, once known, details of these Sessions would be advertised via local media or alternatively, if they had signed up for the project mailing list they would receive a letter via post with these details.

Following the easing of the Covid-19 restrictions, on the 17th of November 2021, 63 letters were sent to subscribers of the Mailing List to inform them of the forthcoming public information sessions taking place at Littleton, Glengoole and Gortnahoe. *(See Appendix 3 - Community Engagement Sessions Letter)*

Accordingly, a series of Community Engagement Sessions were held as follows with circa 100 attendees:

- Tuesday 30th November, Moycarkey-Borris Community Centre
- Wednesday 1st December, Glengoole Community Hall
- Thursday 2nd December, Gortnahoe Community Centre

See Appendix 8 - Community Engagement Sessions Information Panels November/December 2021

2.5.1 Print Advertisement of Community Information Sessions

Advertisements with details on the Community Engagement Sessions were carried by three newspapers – Nenagh Guardian, Kilkenny People and Tipperary Star for two weeks in October and November 2021 *(Appendix 9 – Print Media Advertisement Autumn/Winter 2021).* Details of the Community Engagement Sessions were advertised along with information on how to view the public consultation material on the project website or via contacting the Community Liaison.

2.5.2 Broadcast Advertisement of Community Information Sessions

Advertisements with details on the Community Engagement Sessions were broadcast via TippFm in November and December 2021.

2.5.3 Virtual Room

The virtual consultation room was updated on 18th October 2021 and was available online until 30th December 2021. Access to the virtual room was available directly through the virtual room link and also through the dedicated project website.

For this consultation, geographical breakdown showed visitors from counties Tipperary, Dublin, Louth, Cork, Kilkenny and Galway. The website also had visitors from different countries including China, USA, and Germany. The primary areas explored by visitors varied from month to month, however the 'Top Hotspot Clicks' frequently included the Welcome Video, Oweninny Wind Farm Video, Proposed Location of Wind Farm, Benefits of the Development, Photomontage Viewer and Littleton Development Study Area Map. There were 71 visits to the 'Virtual Room' between October 18th and December 30th, 2021. *(Appendix 10 - Virtual Consultation Room Report Winter 2021)*

2.5.4 Feedback Questionnaires

In respect of feedback questionnaires which were available in the Project Information Pack and accessible online through the Project website and the 'Virtual Consultation Room', between October and December 2021, the Proposed Development's communications team received 12 responses. Overall, the main queries/concerns raised during this stage of consultation were:

Engagement and Consultation	Visual Impact
Planning and Infrastructure	Noise - Turbines
Turbine - Height / number	Turbine – Proximity / Layout
Community Benefit	Amenity – Internal / External
Environmental and Biodiversity	Alternative renewable energies

2.6 Joint Venture Announcement

In March 2024, BnM announced that the company had entered into a joint venture partnership with SSE Renewables for the development of renewable energy projects on the BnM landbank, which included the Proposed Development. Between 28th March and 11th April 2024, the Community Liaison Team visited circa 190 homes within a distance of approximately 2km of the proposed turbine location to inform them of this partnership *(See Appendix 11 – Joint Venture Announcement Spring 2024).*

2.7 Community Information Session – Phase 3

2.7.1 Publication of Final Layout

Between the 8th - 11th September 2025, the Community Liaison Officer delivered a project information pack *(Appendix 112 – Final Layout and Draft Amenity Plan September 2025)* containing updated information on the Proposed Development; namely a revised layout for the Proposed Development on an A2 double-sided map to 190 homes within approximately 2km of the proposed turbine locations. The pack distributed to each household consisted of:

- Project Information Letter
- Final Wind Farm turbine layout A2 Map
- Draft Amenity Infrastructure A2 Map
- Notification of public information event.

The map depicted the proposed final turbine layout, indicative substation location, internal road infrastructure, and amenity pathways. The map also included distance bands out to 2km from a proposed turbine to enable members of the community identify the proximity of the nearest proposed turbine to their residential property.

2.7.2 Public Information Event

On 8th October 2025, a Public Information Event was held in Moycarkey Borris Community & Sport Centre, Ballybeg, Littleton, Co. Tipperary. This was advertised via local media – Tipperary Star for one week – commencing week of the 29th *September (see appendix 13 - Print Media Advertisement Public Information Event Autumn 2025)*. Over 60 people attended this event over the evening where they spoke with members of the Project Team and external planning and environmental consultants. *(See appendix 14 - Community Engagement Sessions Information Panels October 2025)*

2.7.3 Direct Correspondence and Meetings

As outlined in the preceding sections, the Project Team engaged with the local community on an ongoing basis throughout the pre-planning stage through Community Information Sessions, written communication with households and meetings with local elected representatives. In addition to this, at the request of individuals, the Project Team also facilitated 21 meetings with individual residents and community groups to discuss the Proposed Development and ideas/issues/concerns they had in relation to the Proposed Development.

2.8 Dedicated Contact Details

Since the project was first announced in April 2021, the Project Team has provided dedicated contact details for the Proposed Development, including a dedicated phone number, email address, and postal address. To date, these channels have facilitated 228 enquiries about the Proposed Development.

2.9 Project Website

A dedicated project website, www.Littletonwindfarm.ie, was created at the beginning of the Proposed Development and was updated throughout the lifecycle of the Proposed Development with information about the Proposed Development, such as information distributed at Community Information Sessions, news, events, dedicated contact details for the Project Team, and downloadable material relating to the proposed location, project information booklets, layout maps, and communications with the public.

2.10 Dedicated Community Liaison Officer

In April 2021, BnM appointed a dedicated Community Liaison Officer (CLO) for the Proposed Development to ensure a continued 'on the ground' engagement presence with the local community. As the company's main 'point of contact' for the local community and vice versa, the role of the CLO is to represent, communicate, consult, and inform residents through regular updates via formal and informal meetings such as house calls, 'one to one' meetings and clinics.

However, the frequency of these updates was impeded by restrictions brought in and implemented nationally by the Government in response to the Covid-19 pandemic from March 2020 onwards.

Nevertheless, the CLO endeavoured to provide and share updates when available to the community in line with Government Guidance as it pertained at that time around engagements such as house calls, 'one to one' meetings and clinics.

As outlined in the preceding paragraphs, there has been numerous pathways of consultation and engagement with the community while also fully adhering to the Covid-19 regulations at the time.

2.11 Engagement with Community Groups

The Code of Practice for Wind Energy Development in Ireland requests that all community groups local to the Proposed Development should be provided with the same information material as provided to local residents.

The Project Team liaised with Tipperary Public Participation Network (PPN) to determine the most suitable way to contact community groups with information on the Proposed Development. Due to Data Protection, Tipperary PPN could not share contact information with the Project Team but agreed to circulate copies of the information material to all relevant community groups on its behalf. Contact details were also provided in case any of the groups wanted additional information on the project or requested a meeting with the Project Team to discuss the Proposed Development.

3. Community Input into Proposed Development

3.1 Number of Turbines

Due to feedback received from these consultation sessions, along with further desk-based and environmental surveys, noise and shadow flicker modelling, and discussions with the planning and environmental consultants, the initial 14-turbine draft layout was scaled back to a 11-turbine layout

3.2 Recreational Facilities

The Proposed Development will include the construction of new access roads to install and maintain the proposed turbines. A Draft Amenity Plan was published in September 2025, which seeks to utilise the Proposed Wind Farm infrastructure as a basis for most of the proposed trails for walking and cycling. Additional amenity links were also provided to create loops and increase accessibility within the Proposed Wind Farm. The Draft Amenity Plan was produced in conjunction with community feedback received from the consultation stages described in this Report . In addition to the amenity trackways outlined under Section 3.3 below, it is also intended to provide trail infrastructure such as benches, way marker posts and interpretation panels.

3.2.1 Interpretation Panels

Interpretation and orientation signage will be strategically located throughout the Proposed Wind Farm to guide, inform, and maximise enjoyment of the Proposed Wind Farm for all users. The style of all signage will be consistent throughout. Materials such as corten steel will be used to provide a durable finish that will visually blend in with the natural landscape and create a visual link to other site furnishings including proposed benches.

3.2.2 Benches and Picnic Tables

Simple rustic style benches with armrests are proposed throughout the Proposed Wind Farm. Recycled/reusable materials will be used where possible. Typical examples of such materials would be reclaimed timber or recycled plastic. Picnic table sets of a similar design will be installed at various locations to provide users with opportunities to rest and enjoy lunch on their visit. They will be designed to be wheelchair accessible.

3.2.3 Way marker Post

Way marker posts will be used at key junctions throughout the site to guide users along designated trails. This may include:

- Tall finger posts with labelled markers at main path intersections to highlight routes to specific features such as car parks.
- Smaller way marker bollards at path junctions with colour coded directional discs to direct people along designated trails.

3.3 Amenity Trackways

During the various consultation events conducted, the local community expressed a desire for the Proposed Development to include a provision for amenity facilities as part of the development. As a result, as part of the Proposed Wind Farm design, a network of trails forming loops and links is proposed utilising a combination of the internal access tracks proposed for the wind farm and approximately 4.0 km of new floating dedicated amenity tracks. All new amenity trails have been designed to a width of 3m to accommodate both pedestrians and cyclists and to link with existing and planned amenity trails of the Littleton Labyrinth and Midlands Trail Network.

3.3.1. Primary Access Points - Amenity Carparks

One new public car park will be provided for recreational use during the operational stage of the Proposed Wind Farm. During the consultation process, some concerns were raised on the matter of public access near their properties. These concerns were considered when selecting the amenity car park location. A number of car parks are also proposed for the area as part of the permitted Midlands Trail Network (MTN) for Tipperary as per (ACP Ref 323662-25 & PL Ref: 25/60154). Accordingly, the number of proposed car parks was reduced to a singular car park.

The car park will provide 15 no. spaces for private vehicles, 3 no. spaces for wheelchair accessible parking, and parking for buses. The car park will also provide bicycle rack facilities for those who want to cycle to the area and then utilise the amenity loops for walking. Rest furniture such as benches and picnic tables are to be sited at this location for amenity users.

If planning permission is granted for the Proposed Wind Farm, the associated amenity tracks will seamlessly connect into the already permitted Midlands Trail Network (MTN) for Tipperary which shall provide 5km of trail tracks when built. The MTN is a long-term plan to create a network of walking and cycling trails that connects rural areas to open spaces. The MTN will consist of a serviced network of inclusive off-road trails that enables local people and visitors to explore the Midlands region by bike, and on foot. The network will connect rural settlements to open spaces, traversing peatlands, waterways and other habitats and linking to heritage sites and visitor attractions.

4. Enduring Economic Benefit

4.1 Enduring Economic Benefit

The Applicant recognises that the Preferred Draft Approach to Wind Energy Development in Ireland (June 2017) and the Code of Practice for Wind Energy Development in Ireland (December 2016) stipulates that wind farm developers should identify enduring economic benefit to the communities concerned from the Proposed Development and highlight short term economic benefits to the communities concerned.

4.1.1 Short Term Economic Benefits

During the construction phase, it is estimated that at peak construction between 80-100 jobs will be created. This in turn will have a knock-on effect on the local economy through the supply of services to the workforce. While at a regional level additional employment will be created in the region through the supply of services and materials (such as stone and concrete) to the site.

Additionally, the payment of a development contribution to the relevant local authorities in respect of public infrastructure and facilities will potentially provide benefits to the local community through schemes such as the refurbishment, upgrading or replacement of roads, car parks and car parking places, sewers and wastewater facilities, drains or water mains, provision of open spaces/parks, community facilities, amenities and landscaping works, etc.

4.1.2 Long-Term Economic Benefits

The Proposed Development will provide many long-term economic benefits to the communities surrounding the Proposed Development including:

- **Employment**

  Once operational, the wind farm will support 2-3 long term, high-quality, on-site technical jobs in operation and maintenance.

- **Commercial Rates**

  Annual rates paid by the wind farm to Tipperary County Council will potentially support the provision of local services.

- **Community Benefit Fund**

  Should the Proposed Development be consented and subject to final investment decision, a Community Benefit Fund will be developed during the first year of operation of the Proposed Wind Farm.

  A key criterion of the Department's Community Benefit Rulebook, as updated in 2025, is that the projects and initiatives will benefit the communities surrounding the wind farm. As part of this, a Fund Committee will be established and will consist of a number of volunteer community representatives, the Project Developer and Administrator (if applicable). The Fund Committee should aim to represent the widest

cross-section of the community possible. The Fund Committee will then develop a strategy for the Community Fund. Both BnM and SSE have a long history of delivering local community funds, and have supported a number of strategic initiatives, including scholarships and major projects.

For example, SSE operates a Scholarship Fund for students living near Galway Wind Park, and BnM offers Scholarships across its Cloncreen, Derrinlough and Oweninny Phase 2 Wind Farms. These funds can provide a monetary grant to a number of successful applicants, for each year of study, up to a maximum of 4 years, for a number of students (including apprenticeships) living in the vicinity the Proposed Development. The Scholarship may be used towards course fees, accommodation, tools, transport costs, etc.

The Fund will also include a Near Neighbour Scheme which will offer principal primary residents within a prescribed distance of a wind turbine an annual financial payment, which could be used towards energy bills, home retrofits, or other energy efficiency measures. In addition to these payments, this Scheme may also offer participants a contribution towards the completion of energy measures on the property and/or education support.

The value of the Community Benefit Fund will be linked to the productivity of the wind farm and is calculated based on €2/MWh of the overall total generated by the wind farm. It is estimated that the proposed Fund could be in the region of circa €5.5 million over the first 15 years of the operation of the Proposed Wind Farm, on the basis of an annual generation of 185,204MWh.

5. Conclusion

The Project Team has pro-actively engaged and consulted with the local community from an early stage during the pre-application phase. The project launched in April 2021, during the height of the Covid-19 pandemic. This timing meant that traditional in-person meetings and community events were not possible due to government restrictions. The Project Team adapted by using virtual engagement tools, such as a dedicated project website and a 3D virtual consultation room, to share information and gather feedback from the community. Despite the challenges, during this period the Project Team received significant community feedback through online forms, virtual sessions, and limited in-person clinics once allowed.

The consultation process has been an extremely positive and valuable learning experience for all involved. It has provided the company with a detailed and inclusive pathway to understanding of key issues and concerns of the community which have influenced, shaped, and ultimately enhanced the final project proposal.

The Proposed Development will provide an enduring economic benefit to the communities surrounding the Proposed Development. The Proposed Development will create job opportunities during both the construction and operation phase. It will pay annual rates to the local authority. Additionally, the provision of the amenity trails and access points will enhance recreational opportunities.

The Community Benefit Fund will provide enduring socio-economic benefit to the local communities. The Fund will provide financial support for local initiatives, such as community infrastructure improvements, community services, and tourism and recreational programmes. The Fund will seek to support specific community needs and priorities – ensuring that the positive impacts of the wind farm are felt broadly and equitably across the wider community.

Appendix 1

Project Information Pack
Spring 2021

Bord na Móna
Main Street
Newbridge
Co. Kildare

6th April 2021

Ref: Proposed Littleton Wind Farm

Dear Resident,

In line with ongoing company strategy, Bord na Móna is proposing to develop a wind farm on Littleton Bog located in north Tipperary. The proposed wind farm will be known as Littleton Wind Farm. Please see enclosed map for detail on the study area for the proposed development.

Bord na Móna's interest in bringing forward the proposed Littleton Wind Farm is a result of the company's transition to becoming a major supplier of renewable energy. As part of its 'Brown to Green' Strategy, the company is implementing an extensive peatland rehabilitation programme and expanding its new low carbon operations and resource recovery business. A key objective of this strategy involves using the land to continue to underpin Ireland's energy independence by developing green, sustainable energy sources to assist with Ireland's commitment to generate 70% renewable electricity by 2030.

The proposed development of Littleton Wind Farm will contribute to both Ireland's and the European Union's renewable energy targets. It will also contribute to increasing the security of Ireland's energy supply and will facilitate a higher level of energy generation and self-sufficiency.

As the project is at a very early stage the proposed turbine locations and height have not yet been determined. At this stage of the project, the company is seeking to consult the local community about its intention to develop a wind farm on this bog.

Information Pack

Within the Information Pack enclosed, please find the following information:

1. Project Information Booklet.
2. An A2 double sided map - outlining the study area for the proposed development.
3. Project Feedback Questionnaire.
4. A form should you not wish to receive further related information on the proposed development.
5. A consent form to sign up to our postal system.

Community Engagement Clinics

Subject to Covid-19 restrictions, Bord na Móna intend to hold Community Engagement Clinics in the locality in the coming months. However, in order to ensure the safety of both our employees and members of the public due to Covid-19, and that all social distancing requirements and Government health guidelines are adhered to, these Community Engagement Clinics will be held by appointment only.

If we are not able to hold these Clinics in person, we will endeavour to hold them virtually via Zoom or Teams. If you would like to find out more about the Clinics and provisionally book an appointment, please contact us via the contact details at the end of this letter. Alternatively, you can visit the dedicated project website: www.littletonwindfarm.ie and complete the expression of interest form online.

Please turn over

Project Feedback Questionnaire

Should you wish to submit any comments/suggestions about aspects of this proposed Project, you are invited to complete the enclosed Feedback Questionnaire or alternatively, it can also be completed online through the Project's dedicated website www.littletonwindfarm.ie

Contact Details

In the meantime, if you would like any further information or wish to discuss any queries or concerns in relation to the proposed development, please contact our Community Liaison Officer, Colm Dempsey via:

Mobile: 087 414 3305 *(9 a.m. to 5 p.m. Monday to Friday)*

Email: littletonwindfarm@bnm.ie

Mail: Littleton Wind Farm, Bord na Móna, Main Street, Newbridge, Co. Kildare

Yours Faithfully,

Littleton Wind Farm Communications Team

Bord na Móna
Naturally Driven

Proposed Littleton Wind Farm



Introduction

Bord na Móna is an iconic commercial semi-state company that was established almost 90 years ago to develop Ireland's peat resources for the economic benefit of Ireland and to enhance security of energy supply. In recent times, the business has gone through radical change, announcing the new "Brown to Green" strategy, moving away from peat, and focusing on renewable energy, recycling, and peatland rehabilitation operations. A key objective of this strategy involves using the land to continue to underpin Ireland's energy independence by developing green, sustainable energy sources to assist with Ireland's commitment to achieve 70% renewable electricity by 2030.

Bord na Móna is committed to investing to deliver low carbon energy solutions in Ireland, thereby continuing its pivotal role in contributing to the State's energy security. To achieve this Bord na Móna will significantly increase its existing renewable energy asset base beyond the current installed capacity of almost 400 MW.

The company has been a leader in the Irish renewables sector for some time, having been involved in the development of Ireland's first ever commercial wind farm on its Bellacorick Bog in Co Mayo in 1992.

As part of the company's Brown to Green Strategy, Bord na Móna has identified Littleton Bog Group as having the potential for the development of a wind farm.



The Proposed Development - Littleton Wind Farm

The Development Study Area (as shown in Figure 1 below) for the proposed wind farm is part of the Littleton Bog Group located in County Tipperary. This Bog Group is close to the communities of Gortnahoe, Littleton, New Birmingham, Twomileborris and Urlingford.

As the project is at an early stage, the height and number of turbines has not yet been determined but it is envisaged that the development could be of similar scale to our existing Bruckana Wind Farm located in counties Kilkenny, Laois and Tipperary.

The development of a wind farm on this Bog would continue the long tradition of energy production in a new increasingly sustainable form and underpin Bord na Móna's move away from its traditional 'brown' generation to a more sustainable 'green' future. The electricity generated by the turbines would be transmitted directly onto Ireland's National Grid which is managed by EirGrid for distribution around the country.

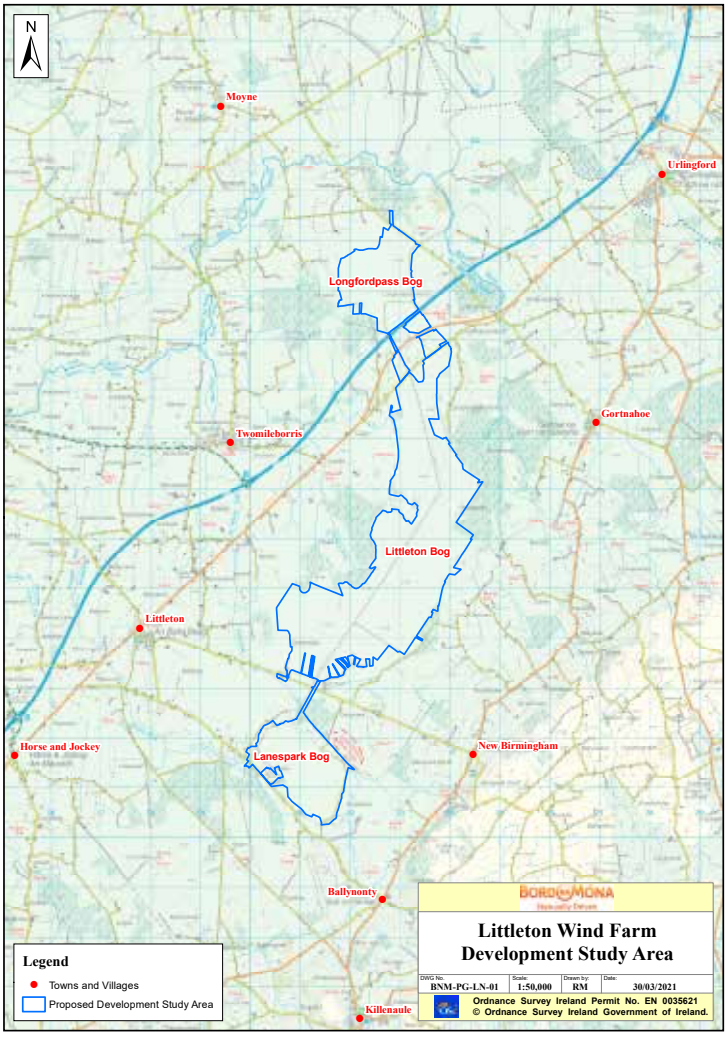


Figure 1: Study Area for proposed Littleton Wind Farm

Bord na Móna's peatlands offer a number of advantages for the development of onshore wind farms, which include:

- Significant scale, and are present in large blocks
- Industrial, brown-field sites, suitable for redevelopment
- Open, unenclosed landscapes with good wind characteristics
- Linked by rail or road passageways, suitable for cable connection
- Generally flat and well drained, with minimal dangers of land slippage
- Proven delivery of this type of development, as demonstrated by Bruckana, Mountlucas and Oweninny Wind Farms.

Irish Government Policy on Renewable Energy

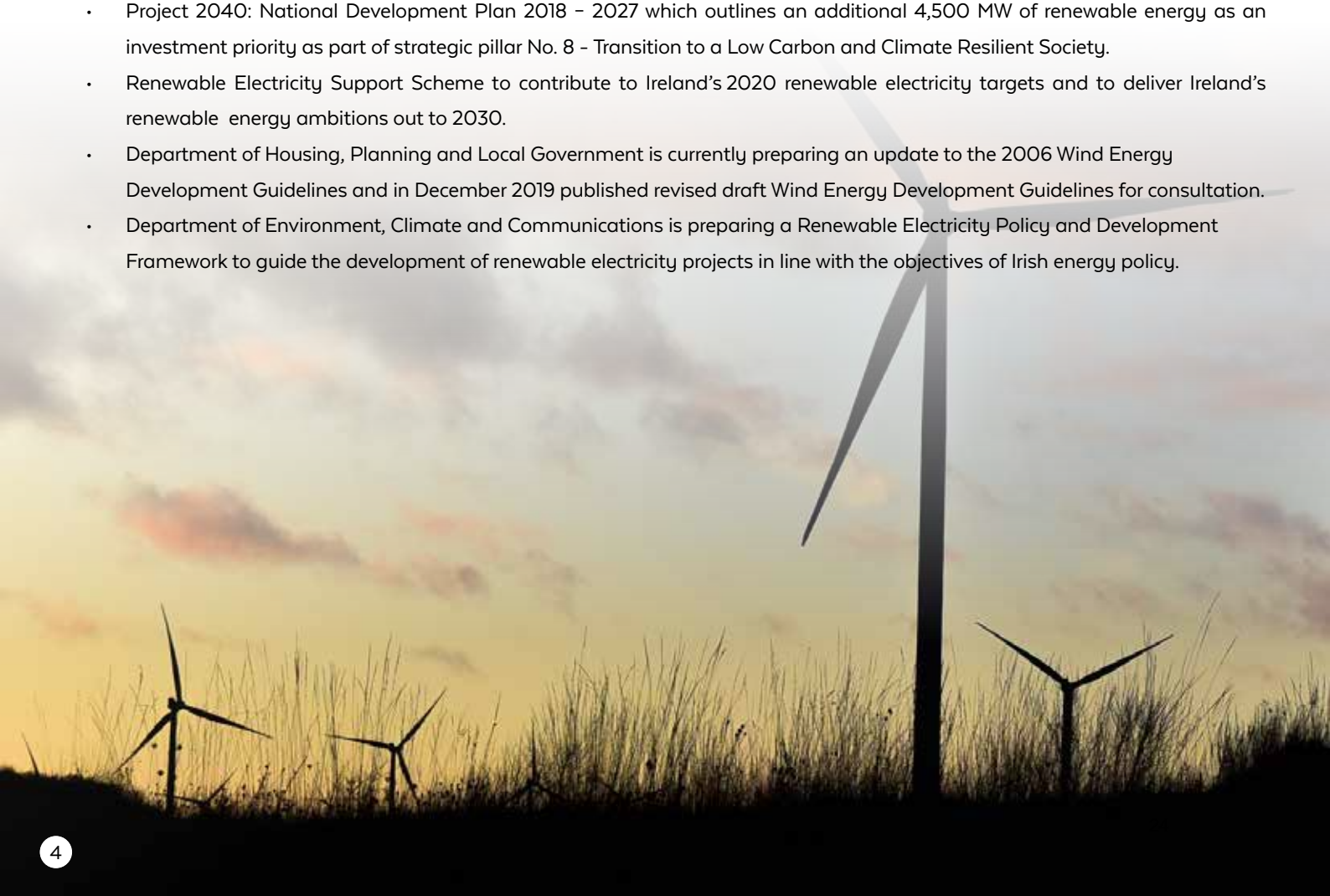
Successive Governments have been developing policy to chart a course towards ambitious decarbonisation targets for Electricity, Transport, Built Environment, Industry and Agriculture.

In March 2019, the Joint Oireachtas Committee on Climate Action published its cross-party report entitled, Climate Change: A Cross-Party Consensus for Action, which set out 42 priority recommendations in the area of climate action, including a target for 70 percent renewable electricity.

The Programme for Government 2020 details how energy will play a central role in the creation of a strong and sustainable economy over the next decade. The reliable supply of safe, secure and clean energy is essential in order to deliver a phase-out of fossil fuels. We need to facilitate the increased electrification of heat and transport. This will create rapid growth in demand for electricity which must be planned and delivered in a cost-effective way.

The Irish Government supports the use of Ireland's wind resources to meet our renewable energy targets. Outlined below is some of the most recent relevant Irish Government Policy:

- Energy White Paper entitled Ireland's Transition to a Low Carbon Energy Future 2015-2030.
- Climate Action and Low Carbon Development Act 2015 as a landmark national milestone in the evolution of climate change policy in Ireland. The purpose of the act is pursuing the transition to a low carbon, climate resilient and environmentally sustainable economy.
- The Climate Action Plan 2019: This plan identifies how Ireland will achieve its 2030 targets for carbon emissions, and puts the country on a trajectory to achieve net zero carbon emissions by 2050. The plan outlines that Ireland will move to 70% renewable electricity by 2030. The Government will be bringing forward the Climate Action (Amendment) Bill, this will ensure the Climate Action Plan is made into law.
- Project 2040: National Development Plan 2018 – 2027 which outlines an additional 4,500 MW of renewable energy as an investment priority as part of strategic pillar No. 8 - Transition to a Low Carbon and Climate Resilient Society.
- Renewable Electricity Support Scheme to contribute to Ireland's 2020 renewable electricity targets and to deliver Ireland's renewable energy ambitions out to 2030.
- Department of Housing, Planning and Local Government is currently preparing an update to the 2006 Wind Energy Development Guidelines and in December 2019 published revised draft Wind Energy Development Guidelines for consultation.
- Department of Environment, Climate and Communications is preparing a Renewable Electricity Policy and Development Framework to guide the development of renewable electricity projects in line with the objectives of Irish energy policy.



Need for Wind Energy

Wind farms produce renewable electricity and assist in the offset of carbon emissions including those arising from other sectors, such as agriculture. The proposed project will contribute to both Ireland's and the European Union's renewable energy targets. It will also contribute to increasing the security of Ireland's energy supply and will facilitate a higher level of energy generation and self-sufficiency.

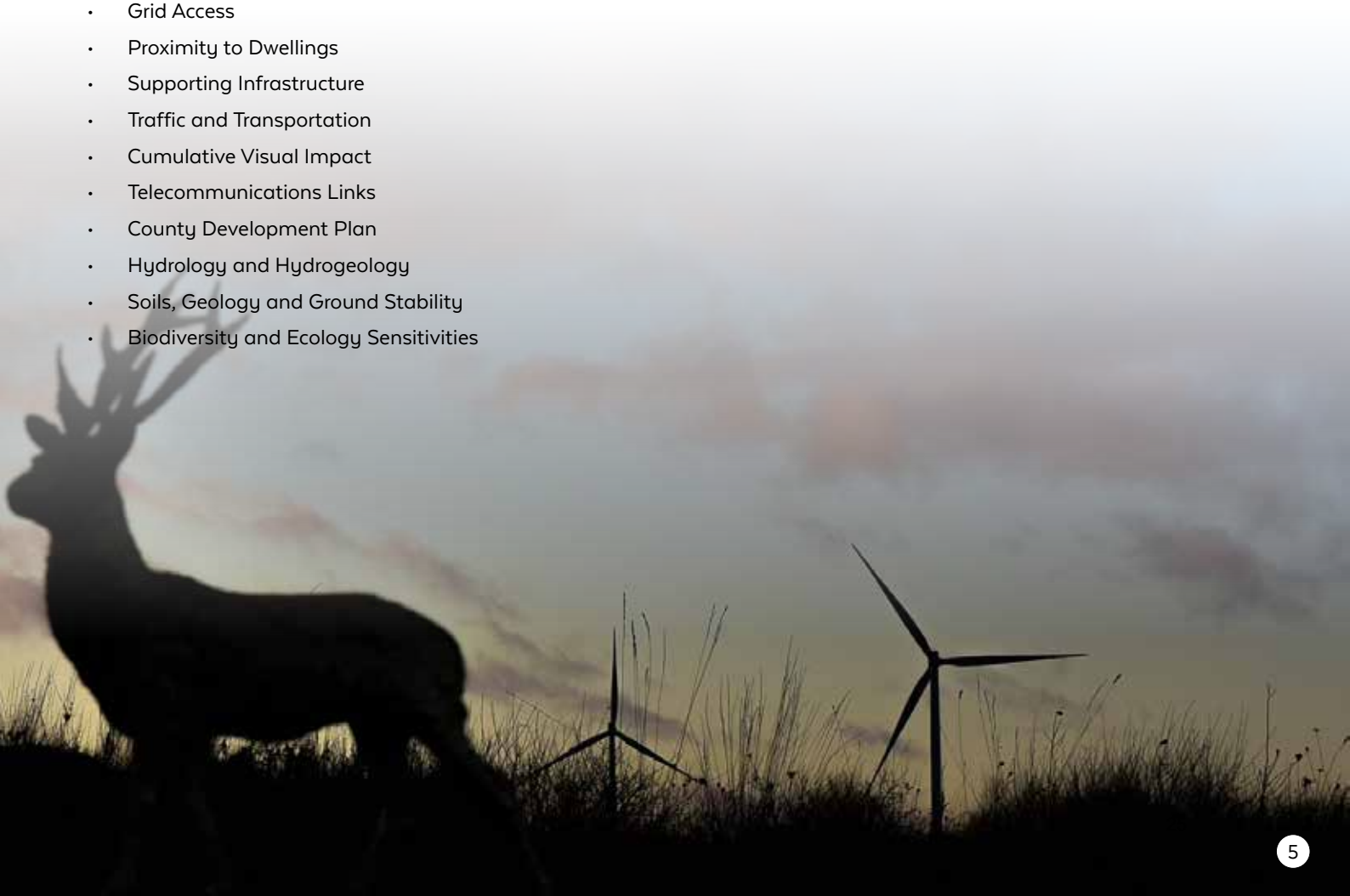
In March 2019, the Government announced a renewable electricity target of 70% by 2030. It is acknowledged that wind energy will provide the main component of Ireland's renewable electricity at that time. The proposed development is likely to be operational before 2030 and would therefore contribute to this 2030 target.

The Climate Action Plan 2019 (CAP) was published on the 1st of August 2019 by the Department of Environment, Climate and Communications. The CAP sets out an ambitious course of action over the coming years to address the impacts which climate may have on Ireland's environment, society, economic and natural resources. This Plan clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption. The CAP identifies a need for 8.2GW of onshore wind generation. The CAP presents clear and unequivocal support for the provision of additional renewable energy generation and presents yet further policy support for increased wind energy.

Site Selection

In selecting a site for a wind farm development there are a number of criteria that must be considered. Based on these criteria some sites are more suitable for wind farms than others. The main criteria that we consider include:

- Noise
- Aviation
- Grid Access
- Proximity to Dwellings
- Supporting Infrastructure
- Traffic and Transportation
- Cumulative Visual Impact
- Telecommunications Links
- County Development Plan
- Hydrology and Hydrogeology
- Soils, Geology and Ground Stability
- Biodiversity and Ecology Sensitivities



Wind Stats - Did you know?

16%

In 2020, wind energy covered 16% of the EU's electricity demand.

Installed Wind Energy Capacity in Republic of Ireland

4,255 MW

36.3%

In Europe, Ireland had the second highest share of wind in its electricity demand in 2020 - 36.3% (according to Wind Energy Ireland)

1992

Year Ireland's first commercial wind farm was commissioned at Bellacorick, Co. Mayo.

10,729,500 MWh

Total amount of electricity generated by wind in Ireland in 2020.

220,000 MW

At the end of 2020, Europe had 220,000 MW of wind energy capacity installed

169 MW

Installed capacity of Ireland's largest wind farm in Co. Galway

4,471 MW

New All Ireland Wind Record was set on 12th February 2021.

€37bn

Wind contributes €37bn to EU GDP. Each GW of onshore wind that Europe builds supports around 5,000 jobs in planning, manufacturing and installation.

Source: Wind Energy Ireland Annual Report 2020 / Wind Energy in Europe - 2020 Statistics and the outlook for 2021-2025 / Eirgrid Smart Dashboard 2021



How Wind Turbines Operate

Almost all wind turbines producing electricity consist of vertical blades which rotate around a horizontal axis. Most modern wind turbines have three blades which face into the wind when extracting the energy needed to generate electricity. The blades are attached to a hub which in turn is connected to a generator by means of a gearbox or direct drive mechanism, which are located inside a protective container called a nacelle. This is where the electricity is made. As the blades are turning, they spin the generator to create electricity. A generator is a machine that produces electrical energy from mechanical energy, whereas an electric motor does the reverse.

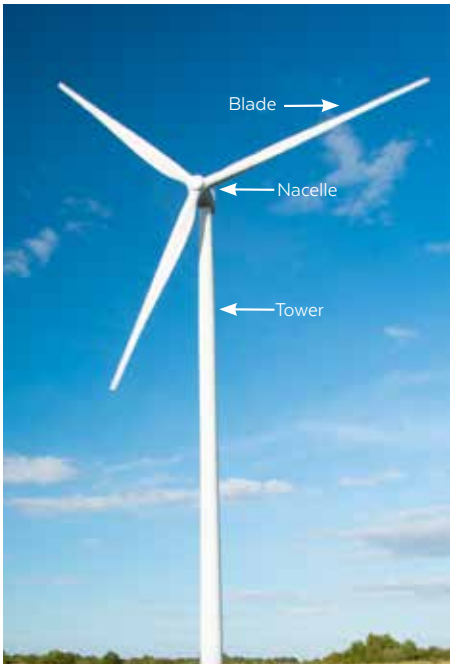


Figure 2 – Image of a Typical Wind Turbine

The nacelle is the large box at the top of the tower where all the main electrical components are located. Figure 2 shows an image which depicts the main elements of a modern wind turbine. Many of the key working parts of a wind turbine are located in the nacelle at the top of the tower and their enclosure within the nacelle reduces noise from the turbine. A schematic of a wind turbine nacelle is shown in Figure 3, with the key components labelled for easy reference.

Tubular towers, which support the nacelle and rotor, are usually made of steel and taper from their base to the top. The entire nacelle and rotor are designed to swing around, or 'yaw', in order to face the prevailing wind and extract the maximum amount of energy.

A modern wind turbine is designed to produce high quality electricity whenever enough wind is available. Wind turbines can operate continuously, unattended, and with low maintenance, with a design life of over 20 years. They are highly reliable, with operating availabilities (the proportion of the time in which they could generate if wind conditions were suitable) of up to 98%. Few other electricity generating technologies offer a higher availability.

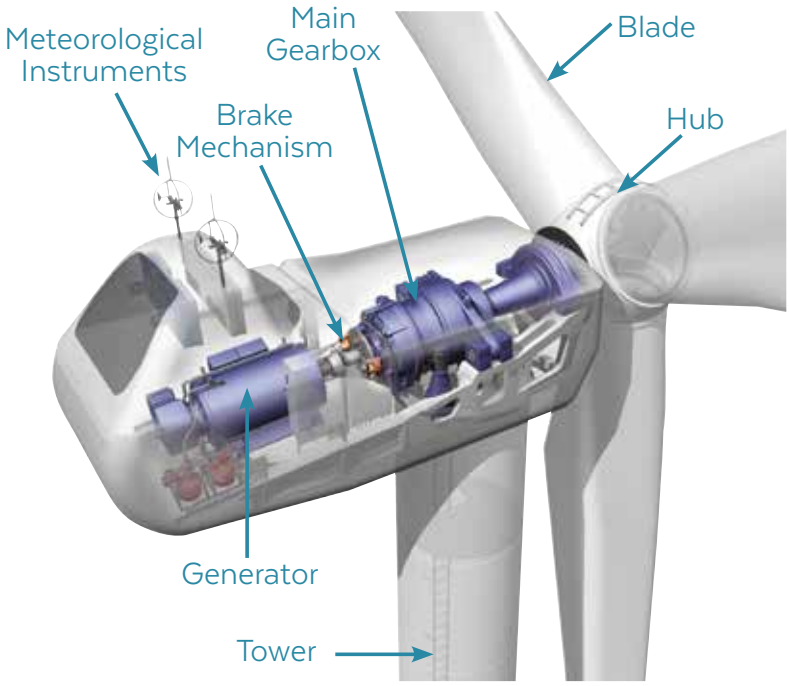


Figure 3 - Schematic of a typical Wind Turbine nacelle

Draft Revised Wind Energy Development Guidelines in Ireland

In 2019, Revised Wind Energy Development Draft Guidelines were issued for public consultation. Key aspects of these Draft Guidelines included:

1. Noise Limits

Noise restriction limits consistent with World Health Organisation standards are proposed. The noise limits will apply to outdoor locations at any residential or noise sensitive properties.

2. Visual Amenity Setback

A visual amenity setback distance, of 4 times the tip height, between a wind turbine and the nearest residential property is proposed, subject to a mandatory minimum setback of 500 metres.

3. Shadow Flicker

It is proposed that technology and appropriate modelling at design stage is adopted to eradicate the occurrence of shadow flicker and must be confirmed in all planning applications for wind energy development.

4. Consultation Obligations

Planning applications must contain a 'Community Report' prepared by the applicant which will specify how the final proposal reflects community consultation and the steps taken to ensure that the proposed development will be of enduring economic benefit to the communities concerned and demonstrate adherence to community engagement codes of practice.

5. Grid Connection

From a visual amenity aspect, undergrounding of cable connections from wind farms to the transmission and distribution system is the most appropriate solution, except where specific ground conditions or technical considerations make this impractical.

6. Community Dividend

Wind farm developers will also be required to take steps to ensure that the proposed development will be of enduring economic benefit to the communities concerned.



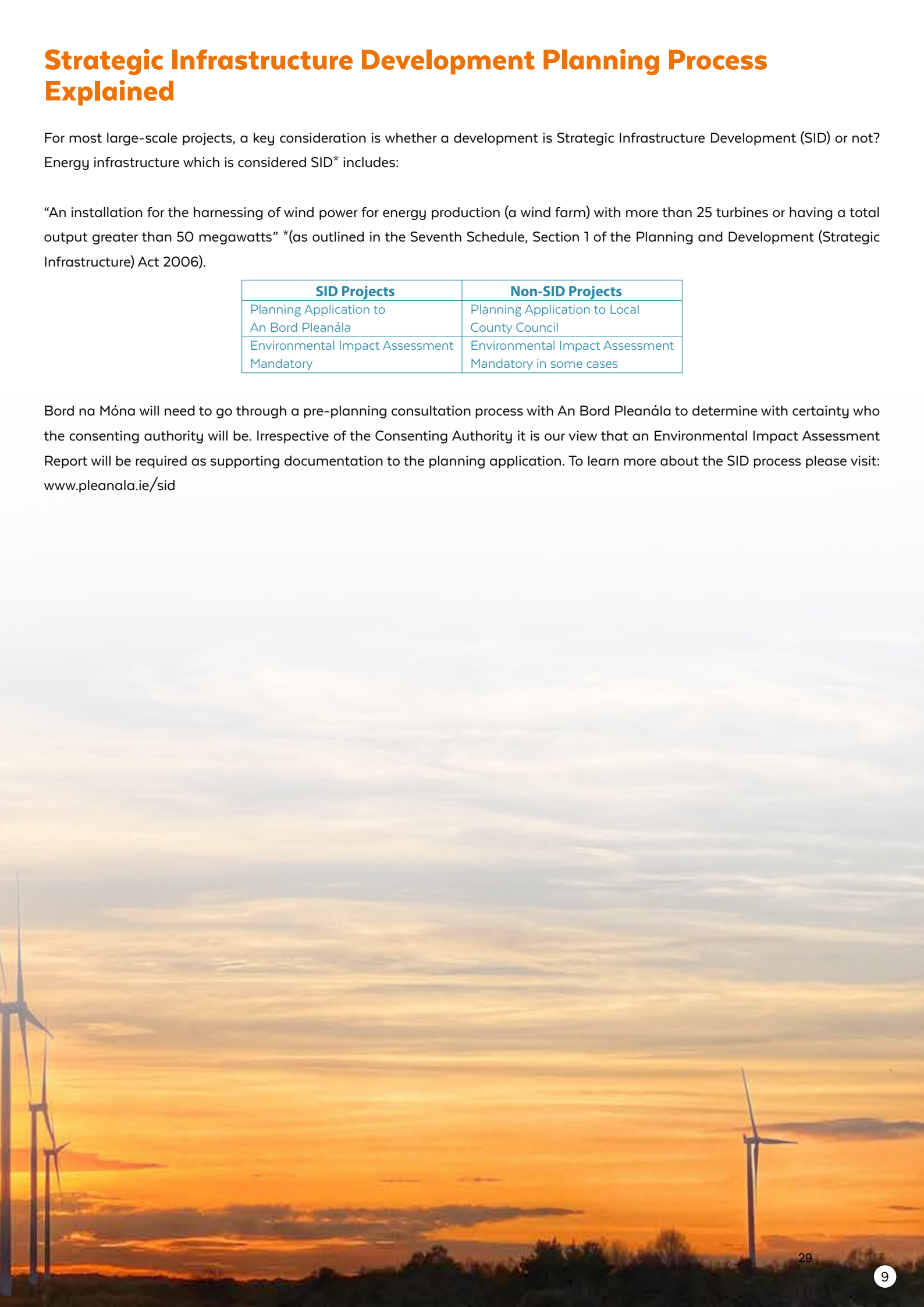
Strategic Infrastructure Development Planning Process Explained

For most large-scale projects, a key consideration is whether a development is Strategic Infrastructure Development (SID) or not? Energy infrastructure which is considered SID* includes:

"An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 megawatts" *(as outlined in the Seventh Schedule, Section 1 of the Planning and Development (Strategic Infrastructure) Act 2006).

SID Projects	Non-SID Projects
Planning Application to An Bord Pleanála	Planning Application to Local County Council
Environmental Impact Assessment Mandatory	Environmental Impact Assessment Mandatory in some cases

Bord na Móna will need to go through a pre-planning consultation process with An Bord Pleanála to determine with certainty who the consenting authority will be. Irrespective of the Consenting Authority it is our view that an Environmental Impact Assessment Report will be required as supporting documentation to the planning application. To learn more about the SID process please visit: www.pleanala.ie/sid

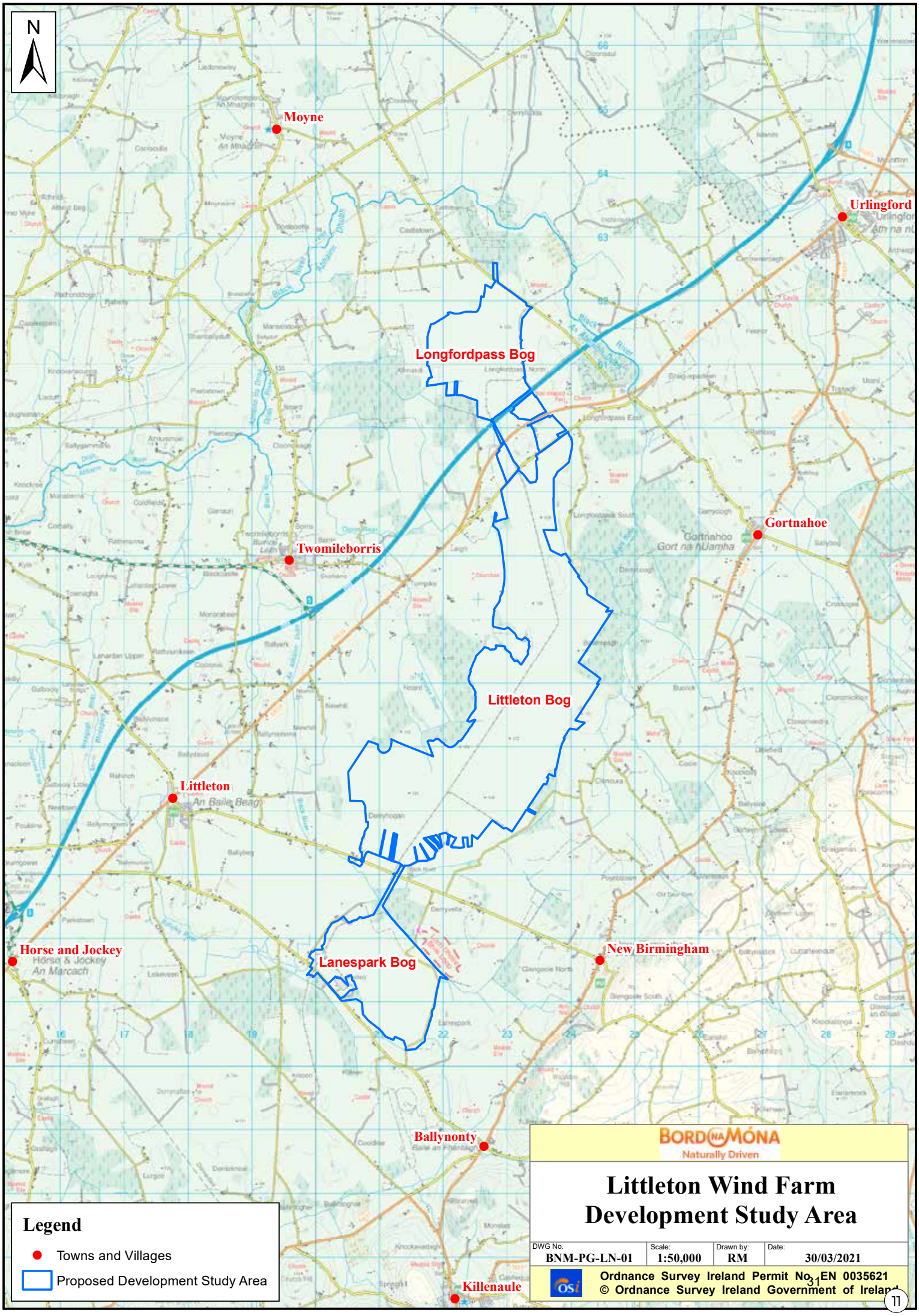


What is included in an Environmental Impact Assessment Report (EIAR)?

Due to the nature and scale of the proposed development an Environmental Impact Assessment (EIA) of the proposed development will need to be carried out. As part of this process, an environmental baseline for the proposed development site will be established through fieldwork and other baseline surveys.

All of this information will be described and documented in an Environmental Impact Assessment Report (EIAR) (formerly known as an Environmental Impact Statement (EIS)) which will accompany the planning application documentation submitted to the appropriate Consenting Authority for consideration. The EIAR will comprise the following chapters as a minimum:




N
Moyne
Urlingford
Longfordpass Bog
Gortnahoe
Twomileborris
Littleton Bog
Littleton
An Baile Beag
Horse and Jockey
An Marcach
Lanespark Bog
New Birmingham
Ballynonty
Killenaule
Legend
Towns and Villages
Proposed Development Study Area
BORD NA MÓNA
Naturally Driven
Littleton Wind Farm
Development Study Area
DWG No. BNM-PG-LN-01
Scale: 1:50,000
Drawn by: RM
Date: 30/03/2021
Ordnance Survey Ireland Permit No. EN 0035621
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Landscape and Visual Impact Assessment

A typical tool utilised in the assessment of the visual impact of a wind farm is a Photomontage. Photomontages are visualisations that superimpose an image of a proposed development upon a photograph or series of photographs and are used to illustrate the potential impact of a development on the existing landscape. A number of photomontages will be created as part of the Landscape and Visual Impact Assessment (LVIA) for the proposed wind farm.

Photomontages were produced as part of the LVIA for Mountlucas Wind Farm during the planning application process. A comparison of one of the photomontages generated for the LVIA, and a photograph taken from the same location post construction, is shown below. It illustrates the effectiveness and accuracy of this tool when applied to this type of development. Samples of the photomontages which will form part of the LVIA for this proposed development will be provided at the next round of Community Information Sessions.



Figure 4 - Comparison of Mountlucas Wind Farm photomontage and real photograph taken at same location

Benefits of the Development

The proposed development will give rise to a range of benefits at different levels:

At a Local Level, benefits arising from the construction and operation of the proposed wind farm will include:

- Community Benefit Fund.
- 80 to 100 jobs at peak construction.
- Substantial rates paid to the relevant Local Authority.
- Upgrading of the road infrastructure in the vicinity of the wind farm (as required).
- Payment of taxes from the project, and dividends from Bord na Móna to the State.
- Supporting a number of long term, high quality technical jobs in operations and maintenance.
- Indirect employment created through the sub-supply of a wide range of products and services.

At a Regional Level, the new development will help to supply the rising demand for electricity, resulting from renewed economic growth in the Mid-West region. During construction, additional employment will be created in the region through the supply of services and materials to the wind farm.

At a National Level, the new development will play a significant role in contributing to the country's national renewable electricity production and carbon emissions reduction targets by 2030, while also supporting a growing economy and population. During operation, the wind farm will eliminate the need to generate the equivalent amount of electricity from fossil fuels, and it will therefore help to reduce total national greenhouse gas emissions. In doing so, it will reduce our dependence on external energy sources, help improve our energy security of supply and make a major contribution to Ireland's Climate Action Plan 2019, which has set a target of 8.2GW of onshore wind capacity by 2030.

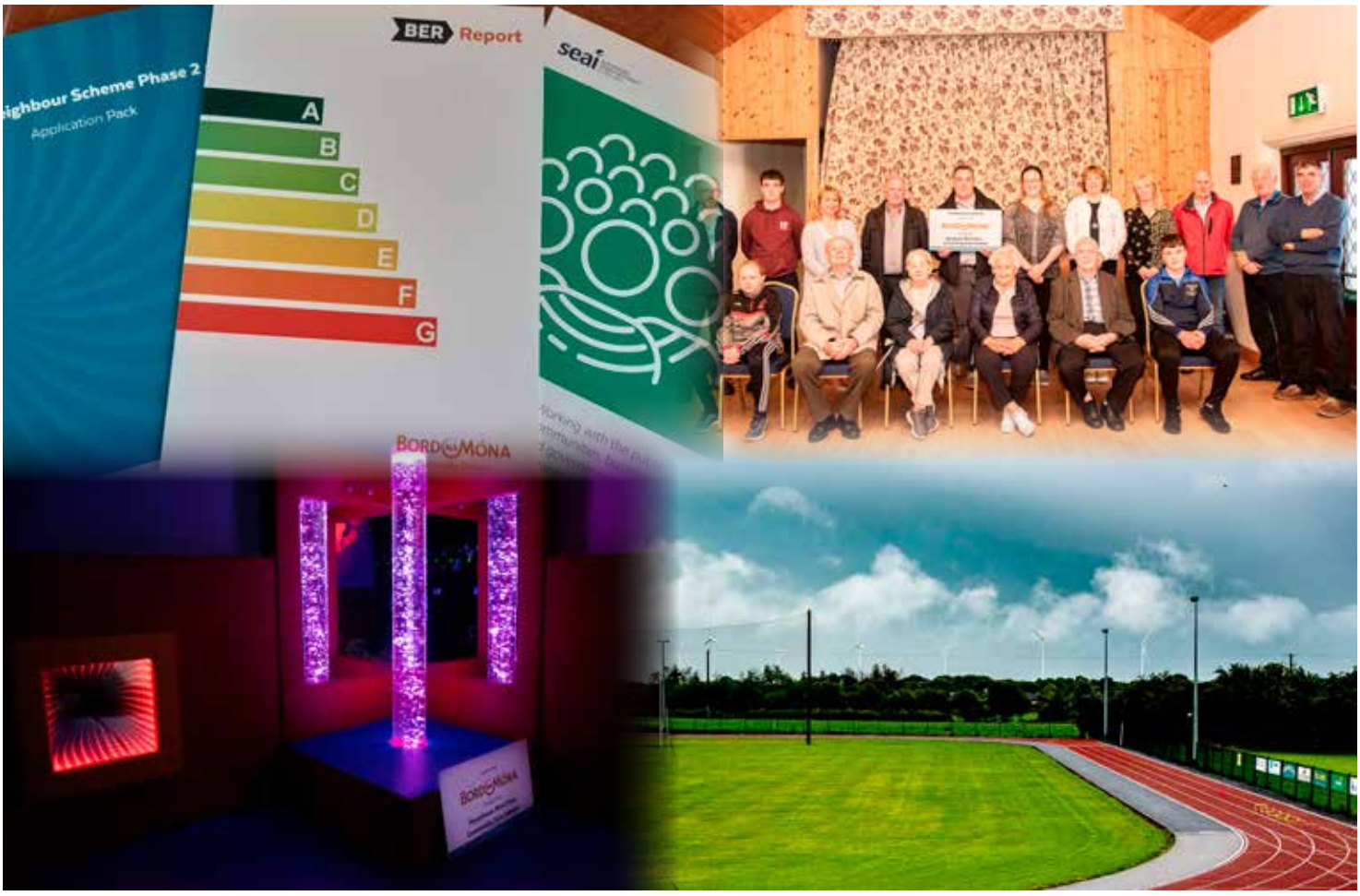


Figure 5 - Various examples of community benefit projects supported by Bord na Móna Wind Farms

Potential Wind Farm Recreational Facilities

Public Walkway - Cycleway

Bord na Móna began commercial operation of its Mountlucas Wind Farm in 2013. The site consists of a 10km walkway / cycleway around the wind farm in addition to interpretative signage, outdoor exercise equipment and a learning hub which is utilised by various school & college groups for educational purposes and day trips.

The wind farm is generally accessible all year round – free of charge with onsite parking facilities at both the Northern and Eastern access points.

In 2020 the wind farm had over 45,000 visits to its amenity facilities and it is hoped to incorporate similar amenities as part of the proposed Littleton Wind Farm.

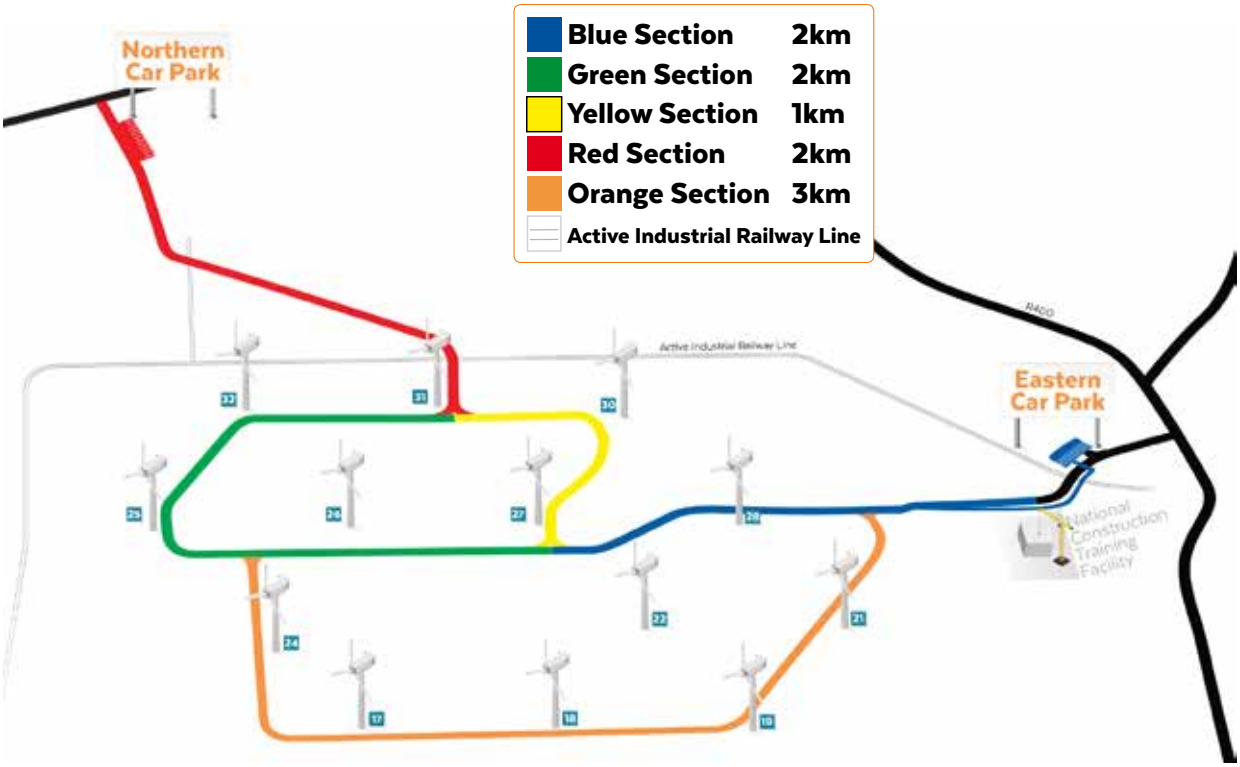


Figure 6 - Map of Mountlucas Wind Farm highlighting the 10km walkway/cycleway routes



Community Engagement

1st Public Consultation: Spring/Summer 2021 – Consultation Sessions
2nd Public Consultation: Autumn/Winter 2021 – Draft Layout Consultation Sessions

Bord na Móna understand the importance of community engagement at every stage of the proposed Littleton Wind Farm development process. We are constantly updating and adapting our communications channels to ensure the public are informed about the proposed development. This means continuing to use our traditional methods of communication in addition to a number of interactive online tools to ensure we engage on an ongoing basis through:

- A Virtual Consultation Room
- Online Feedback Questionnaires
- Virtual Meetings via Zoom or Teams
- Community Engagement Clinics (by appointment)
- Community Liaison Officer - House to House visits*
- Dedicated project website – **www.littletonwindfarm.ie.**

***Subject to Covid-19 restrictions.**

Virtual Consultation Room

As part of our Community Engagement activities, we have launched a 'Virtual Consultation Room'. The Virtual Room is set-up in a similar style to our traditional public consultation events which we are currently unable to hold due to Covid-19. The Room contains information about the proposed Littleton Wind Farm in an interactive format. Please feel free to visit the Virtual Consultation Room which can be accessed via our website **www.littletonwindfarm.ie.**

Community Engagement Clinics

Subject to Covid-19 restrictions, Bord na Móna intend to hold Community Engagement Clinics in the locality in the coming months. In order to ensure the safety of both our employees and members of the public due to Covid-19, and that all social distancing requirements and Government health guidelines are adhered to, these Community Engagement Clinics will be held in by appointment only. If we are not in a position to hold these Clinics in person, we will endeavor to hold them virtually via Zoom or Teams.

If you would like to find out more about the Clinics and provisionally book an appointment, please contact the projects Community Liaison Officer Colm on 087-4143305. Alternatively, you can visit the dedicated project website: **www.littletonwindfarm.ie.** and complete the expression of interest form on the website.



Frequently Asked Questions

1. How many turbines are proposed for the development?

As the project is at an early stage the number and location of turbines has not yet been determined.

2. What is the size of the proposed development study area?

The development study area totals approximately 1,020 hectares and it is envisaged the wind farm may be of similar scale to our Bruckana Wind Farm located in counties Kilkenny, Laois and Tipperary.

3. Where will the power from the proposed wind farm go?

The electricity generated by the turbines would be transmitted directly onto Ireland's National Grid which is managed by EirGrid for distribution around the country. The proposed development will also make a significant contribution to Irelands Climate Action Plan 2019, which has a set a target of 8.2GW of onshore wind capacity by 2030.

4. What works are the project team currently undertaking?

Over the coming months, in order to determine the extent of the proposed development Bord na Móna will undertake a number of on-site surveys on Littleton Bog Group, such as ecology surveys, ornithology surveys, aquatic surveys, heritage surveys and site investigation works. Additionally, the company will also commence a series of off-site surveys, such as noise monitoring at sensitive receptors around the site and topographical surveys of the proposed grid connection and proposed haul routes.

5. What Information will be provided at the next stage of public consultation which is planned for Late 2021?

The draft wind turbine layout will be available at the second round of public consultations and will provide detail on the setback distance, location, height and number of proposed turbines. Information will also be provided on the proposed substation location for the development. The project team will also have a subset of Photomontages available that will show what the proposed development may look like from the area. For more information on Photomontages please refer to page 12.



How you can Get in Touch


Colm

Call our Community Liason Officer - Colm:

Colm is available to discuss residents' queries or concerns in relation to the proposed development. Please feel free to contact him by phone or email to enquire about any aspect of the project or request a call back.

Call Colm on: 087 4143305 (9 a.m. to 5 p.m. Monday to Friday) or email: **littletonwindfarm@bnm.ie**

Join our Mailing List:

Keep informed of all project updates by signing up to our project mailing list. Please visit our dedicated project website to complete the sign-up form: **www.littletonwindfarm.ie**

Request a Call Back:

Visit our project website **www.littletonwindfarm.ie** to request a call back

Email us:

Email: **littletonwindfarm@bnm.ie**

Write to us:

Littleton Wind Farm Communications Team, Bord na Móna, Main Street, Newbridge, Co. Kildare

About Bord na Móna

Bord na Móna is an iconic Irish company operating five business units – Renewable Energy, Resource Recovery, Land & Habitats, Consumer Products and New Business. Over 80 years ago, Bord na Móna was established to develop Ireland's peat resources for the economic benefit of Ireland. Ireland's urgent need to support positive climate action measures means the company is now managing its land in a very different way.

As part of its Brown to Green Strategy, Bord na Móna is implementing an extensive peatland rehabilitation programme and expanding its low carbon operations as well as its Resource Recovery and recycling business. A key objective of this strategy involves using the land to continue to underpin Ireland's energy independence by developing green, sustainable energy sources to assist with Ireland's commitment to achieve 70% renewable electricity by 2030.

The company is rapidly decarbonising and as it does it is building a new, more sustainable business and rural economy. Bord na Móna has a strong record of siting, designing and delivering wind farms within its cutaway peat lands, such as Bellacorick, Bruckana, Mountlucas and Oweninny Wind Farms.



Overview of Bord na Móna Renewable Energy Projects*

*correct as of time of print, 1st April 2021.



Overview of Bord na Móna Renewable Energy Projects*

*correct as of time of print, 1st April 2021.

1 Project Name: Oweninny Wind Farm Phase 1 (Joint Venture with ESB)
Location: County Mayo
Project Stage: Operational (2019)
Installed Capacity: 93 MW
No. Turbines: 29
Overall Blade Tip Height: 176 metres
website: www.oweninnywindfarm.ie

2 Project Name: Oweninny Wind Farm Phase 2 (Joint Venture with ESB)
Location: County Mayo
Project Stage: Construction
Proposed Maximum Export Capacity: 83MW
Proposed No. Turbines: 31
Proposed Overall Blade Tip Height: 176 metres
website: www.oweninnywindfarm.ie

3 Project Name: Cloncreen Wind Farm
Location: County Offaly
Project Stage: Construction
Proposed Maximum Export Capacity: 100MW
Proposed No. Turbines: 21
Proposed Overall Blade Tip Height: 170 metres
website: www.cloncreenwindfarm.ie

4 Project Name: Proposed Derryadd Wind Farm
Location: County Longford
Project Stage: Consented
Proposed Maximum Export Capacity: 96 MW
Proposed No. Turbines: 24
Proposed Overall Blade Tip Height: 185 metres
website: www.derryaddwindfarm.ie

5 Project Name: Proposed Derrinlough Wind Farm
Location: County Offaly
Project Stage: Planning
Proposed Maximum Export Capacity: 85 MW
Proposed No. Turbines: 21
Proposed Overall Blade Tip Height: 185 metres
website: www.derrinloughwindfarm.ie

6 Project Name: Proposed Ballivor Wind Farm
Location: Counties Meath and Westmeath
Project Stage: Pre-Planning
Proposed Maximum Export Capacity: 100MW
Proposed No. Turbines (draft layout): 26
Proposed Overall Blade Tip Height (draft layout): 200 metres
website: www.ballivorwindfarm.ie

7 Project Name: Timahoe North Solar Farm (Co-Development Agreement with ESB)
Location: County Kildare
Project Stage: Consented
Proposed Installed Generating Capacity: 70 MW

8 Project Name: Proposed Cuil na Móna Renewable Gas Facility
Location: County Laois
Project Stage: Consented

9 Project Name: Bruckana Wind Farm
Location: Counties Tipperary/Laois/Kilkenny
Project Stage: Operational (2014)
Installed Capacity: 42 MW
No. Turbines: 14
Overall Blade Tip Height: 150 metres
website: www.bruckanawindfarm.ie

10 Project Name: Mountlucas Wind Farm
Location: County Offaly
Project Stage: Operational (2014)
Installed Capacity: 84 MW
No. Turbines: 28
Overall Blade Tip Height: 150 metres
website: www.mountlucaswindfarm.ie

11 Project Name: Sliabh Bawn Wind Farm (Joint Venture with Coillte and Greencoat Renewables)
Location: County Roscommon
Project Stage: Operational (2017)
Installed Capacity: 64 MW
No. Turbines: 20
Overall Blade Tip Height: 130 metres
website: www.sliabhbawnwindfarm.ie

12 Project Name: Bellacorick Wind Farm
Location: County Mayo
Project Stage: Operational (1992)
Installed Capacity: 6.45 MW
No. Turbines: 21

13 Project Name: Proposed Oweninny Wind Farm Phase 3
Location: County Mayo
Project Stage: Pre-Planning
Proposed Maximum Export Capacity: 90MW
Proposed No. Turbines (draft layout): 18
Proposed Overall Blade Tip Height (draft layout): 200 metres
website: www.oweninnywindfarmphasethree.ie

14 Project Name: Proposed Ballydermot Wind Farm
Location: Counties Kildare and Offaly
Project Stage: Pre-Planning
website: www.ballydermotwindfarm.ie
** At this stage, the scale of the proposed development has not been determined.*

15 Project Name: Proposed Lemanaghan Wind Farm
Location: County Offaly
Project Stage: Pre-Planning
website: www.lemanaghanwindfarm.ie
**At this stage, the scale of the proposed development has not been determined*

16 Project Name: Proposed Cloncreen Battery Storage Project
Location: County Offaly
Project Stage: Planning

17 Project Name: Proposed Littleton Wind Farm
Location: County Tipperary
Project Stage: Pre-Planning
website: www.littletonwindfarm.ie
**At this stage, the scale of the proposed development has not been determined*

N

Moyne

Urlingford

Longfordpass Bog

Gortnahoe

Twomileborris

Littleton Bog

Littleton

Horse and Jockey

Lanespark Bog

New Birmingham

Ballynonty

Killenaule

Legend

- Towns and Villages
- Proposed Development Study Area

BORD NA MÓNA
Naturally Driven

Littleton Wind Farm
Development Study Area

DWG No.	Scale:	Drawn by:	Date:
BNM-PG-LN-01	1:50,000	RM	30/03/2021

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Littleton Wind Farm
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BNM-PG-LN-02	1:50,000	RM	30/03/2021

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Feedback Questionnaire - Proposed Littleton Wind Farm

Please return completed Form by 14th May 2021
You can also complete this questionnaire online by visiting www.littletonwindfarm.ie

Q1. What are the main concerns you have about the Company's proposal to developing Littleton Wind Farm?

_____
_____
_____
_____

Q2. If the proposed project is developed, what types of benefits should the Littleton Wind Farm provide the local community?

_____
_____
_____
_____

Q3. What further information would you like to see at the next stage of the Community Consultation process?
Note, a draft layout including proposed number of turbines and their locations will be published at the next stage of Community Consultation.

_____
_____
_____
_____

Q4. Have you any other comments in relation to the proposed project?

_____
_____
_____
_____

Q5. Bord na Móna is committed to keeping the local community informed about the proposed project. Please help us identify other local groups which you may feel should be included on the circulation list for project updates.

_____
_____
_____
_____

PLEASE COMPLETE IN BLOCK CAPITALS

Name: _____

Address: _____

Eircode: _____

RETURN ADDRESS: Bord na Móna Renewable Energy, Main Street, Newbridge, Co. Kildare
E-mail: littletonwindfarm@bnm.ie

Littleton Wind Farm - Consent Form to join Postal Communication List

You can also complete this form online by visiting www.Littletonwindfarm.ie

Dear Resident,

To keep you informed of all relevant project updates Bord na Móna Powergen Ltd. is providing the option to subscribe to our postal service to provide project updates. If you wish to participate in this service for the Littleton Wind Farm project, please provide your name and address on the below form and return it via freepost in the enclosed envelope. Please note you can Opt-Out of the service at any time by email to Littletonwindfarm@bnm.ie *or by writing to: Littleton Wind Farm, Bord na Móna Powergen, Newbridge Co. Kildare.*

For the purposes of data protection, please note that the only personal data that we hold will be your name and address. This will not be connected to any other personal data relating to you. Your details will be stored in a secure encrypted database on the Bord na Móna servers for the duration of the Littleton Wind Farm project (or until you opt out of the service). Your details will only be used to send you postal updates with relevant project updates for the Littleton Wind Farm project.

If you decide to opt out at any time, your details will be securely deleted from our systems and you will no longer be contacted. Otherwise, your details will be deleted from our systems on completion of the Littleton Wind Farm project.

By submitting your name and address to us, you are consenting to allow us to use your information for the above purpose.

Yours Faithfully,
Littleton Wind Farm Communications Team

By submitting my contact details to Bord na Móna Powergen Ltd., I consent **to allow** them to use my information to send me relevant project updates via post for the *Littleton* Wind Farm project.

Please complete and print in BLOCK CAPITALS

PLEASE COMPLETE IN BLOCK CAPITALS.

Name: _____

Address: _____

Eircode: _____

Please return to: **Bord na Móna Renewable Energy, Newbridge, Co. Kildare.**

Littleton Wind Farm - Communications Opt Out Form

You can also complete this form online by visiting www.Littletonwindfarm.ie

Dear Resident,

*Should you **not** wish to receive any further related information on the proposed development please complete the form below and return via the freepost envelope enclosed.*

For the purposes of data protection, please note that the only personal data that we hold will be your name and Eircode. This will not be connected to any other personal data relating to you. Your details will be stored in a secure encrypted database on the Bord na Móna servers for the duration of the Littleton Wind Farm project. Your details will only be used to ensure you are not included on any of circulation lists for project updates/further related information on the Littleton Wind Farm project. Your details will be deleted from our systems on completion of the Littleton Wind Farm project.

By submitting your name and Eircode to us, you are consenting to allow us to use your information for the above purpose.

Yours Faithfully,
Littleton Wind Farm Communications Team

By submitting my contact details to Bord na Móna Powergen Ltd., I confirm I **do not** wish to receive any further related information on the proposed *Littleton* Wind Farm project.

PLEASE COMPLETE IN BLOCK CAPITALS

Name: _____

Address: _____

Eircode: _____

Please return to: **Bord na Móna Renewable Energy, Newbridge, Co. Kildare.**

Appendix 2

Project Information Pack
Autumn 2021

Bord na Móna

Bord na Móna Giníuint Cumhachta Oifig Chláraithe: An bPriómhshráid, Droichead Nua, Co. Chill Dara, W12 XR59, Éire
Bord na Móna Powergen Limited Registered Office: Main Street, Newbridge, Co. Kildare, W12 XR59, Ireland
Fón /T +353 (0)45 439 000 **Facs/F** +353(0) 45 439 001 **bordnamona.ie**

Autumn/Winter 2021

Dear Resident,

Project: Proposed Littleton Wind Farm

The purpose of this communication is to provide you with an update on the proposed Littleton Wind Farm. Firstly, we would like to thank everyone who submitted feedback and participated in our online clinics during our first round of public consultations conducted in recent months.

Since then, the project team has been advancing the project design and has now produced a draft layout for the site comprising of 14 turbines with an overall tip height of 200 metres for the proposed wind farm development. This draft layout has been designed with regard to the draft Wind Energy Development Guidelines (2019), along with site surveys, constraints mapping, and public consultations carried out to date.

Accompanying this letter please find enclosed a Project Information Pack consisting of:

1. A Photomontage Booklet
2. A Project Information Booklet
3. An A2 double sided draft layout map
4. A feedback questionnaire and freepost envelope

In launching this second phase of consultation, it is very important to us that local communities have the opportunity to provide feedback to help inform design, construction, and operation of the proposed wind farm. At this stage of the project, we are now seeking feedback from the local community on this draft layout. For more detailed information on the proposed development please refer to the enclosed Project Information Booklet.

In addition, subject to the proposed further easing of Covid-19 restrictions *(currently scheduled for the 22 October)* we intend to hold a series of Community Engagement Sessions in late November in the locality of the proposed development. While we do not have a schedule of fixed dates at this time *(due to pending confirmation of the easing of restrictions mentioned above)*, once known, details of these Sessions will be advertised via local media or alternatively, if you have signed up to our project mailing list you will receive a letter via post with these details. If you would like to find out more about the Sessions and/or register your interest in attending, please contact the Project's Community Liaison Officer Colm (contact details below) or, visit the Project website (www.littletonwindfarm.ie) where you can join our mailing list.

In the meantime, if you would like any further information on the proposed development, please contact our Community Liaison Officer – Colm (087-4143305) or via littletonwindfarm@bnm.ie. We remain committed to keeping you informed about the project as it progresses and will continue to provide you with updates over the coming months. It is envisaged that a planning application will be lodged in Autumn 2022 for the proposed development.

Yours Faithfully,
Littleton Wind Farm Communications Team

Proposed Littleton Wind Farm

Bord na Móna



Frequently Asked Questions

1. How many turbines are proposed for the development?
Resulting from the development of the draft wind turbine layout there are 14 turbines proposed for the Littleton Wind Farm project. For further information, please see page 5.

2. What height are the proposed turbines and how close are they to people's homes?
The proposed turbines will have an overall blade tip height of up to 200 metres. For further information, please see page 5.

3. What setback distance has been applied from houses?
The turbine layout has been designed with a minimum setback distance of 4 times the tip height (800 metres) to the nearest house. For further information, please see page 5.

4. When will a planning application be lodged?
It is envisaged that a planning application will be lodged in Autumn 2022 for the proposed development. It is intended to submit the planning permission application directly to An Bord Pleanála, under the provisions of the Planning and Development (Strategic Infrastructure) Act 2006. An initial approach is therefore being made to An Bord Pleanála seeking a determination in relation to the Strategic Infrastructure Development (SID) status, or otherwise, of the proposed wind farm development. For further information, please see page 7.

5. What land area will the proposed wind farm occupy?
Littleton Bog compromises of circa 1,020 hectares. Only approximately 5% of this area will be used for turbine bases, crane hard-standings and access tracks, so much of the land area will not be required by the development. This means that it can be utilised for other purposes, such as biodiversity and amenity.

6. Where will the power from the proposed wind farm go?
The electricity generated by the turbines will be transmitted directly onto Ireland's National Grid which is managed by EirGrid for distribution around the country. The proposed development will make a significant contribution to Irelands Climate Action Plan 2019, which has a set a target of 8.2GW of onshore wind capacity by 2030.

7. What stage is the project at now?
The project team is conducting a number of onsite surveys including ecology surveys, ornithology surveys, aquatic surveys, heritage surveys and site investigation work. In addition to these site works, we are also looking to consult with the community on the draft wind turbine layout.

8. How can I provide feedback on the proposed development to Bord na Móna?
We encourage feedback through a number of channels including:

- Through the Community Liaison Officer: Colm (see page 11 for further details).
- Submission of a Feedback Questionnaire (please see page 10 for further details).
- Via the project's dedicated email address: **littletonwindfarm@bnm.ie**



Introduction

Bord na Móna is an Irish, semi-state climate solutions company helping lead Ireland towards a climate neutral future.

Bord na Móna has been serving communities for over 90 years, always rising to meet the needs of the day. It was founded in 1934 as The Turf Development Board to enhance national energy security through peat harvesting and became Bord na Móna in 1946.

Today, we have radically changed our approach to face an even greater challenge: climate change. We have ended peat harvesting and now our focus is developing climate solutions in renewable energy, sustainable waste management, carbon storage, and biodiversity conservation.

Ireland has committed to ambitious climate goals and Bord na Móna's climate solutions are helping to achieve them. Our vision is to help Ireland reach net zero greenhouse gas emissions by 2050. This means helping to remove the same amount of greenhouse gases from the atmosphere that are released.

To power a net zero future, we are expanding our renewable energy infrastructure. We have been constructing and maintaining large-scale infrastructure for decades. Today, we are using that experience to build renewable energy developments across the country. These developments are transforming the way we generate and consume energy.

Ireland has committed to generating 70% of electricity from renewable sources by 2030. We are working across wind, solar, biomass and biogas to help achieve this target and to provide energy security for future generations.



Irish Government Policy on Renewable Energy

Successive Governments have been developing policy to chart a course towards ambitious decarbonisation targets for Electricity, Transport, Built Environment, Industry and Agriculture. In March 2019, the Joint Oireachtas Committee on Climate Action published its cross-party report entitled, Climate Change:

A Cross-Party Consensus for Action, which set out 42 priority recommendations in the area of climate action, including a target for 70 percent renewable electricity.

The Programme for Government 2020 details how energy will play a central role in the creation of a strong and sustainable economy over the next decade. The reliable supply of safe, secure, and clean energy is essential to deliver a phase-out of fossil fuels. To reduce emissions and decarbonise both Heat and Transport, electrification will play an important role in ensuring Ireland meets emission targets. This will create rapid growth in demand for electricity which must be planned and delivered in a cost-effective way.

The Irish Government supports the use of Ireland's wind resources to meet our renewable energy targets. Outlined below is some of the most recent relevant Irish Government Policy:

- Energy White Paper entitled Ireland's Transition to a Low Carbon Energy Future 2015–2030.
- Climate Action and Low Carbon Development Act 2015 as a landmark national milestone in the evolution of climate change policy in Ireland. The purpose of the act is pursuing the transition to a low carbon, climate resilient and environmentally sustainable economy.
- The Climate Action Plan 2019: This plan identifies how Ireland will achieve its 2030 targets for carbon emissions and puts the country on a trajectory to achieve net zero carbon emissions by 2050. The plan outlines that Ireland will move to 70% renewable electricity by 2030.
- Project 2040: National Development Plan 2018 – 2027 which outlines an additional 4,500 MW of renewable energy as an investment priority as part of strategic pillar No. 8 - Transition to a Low Carbon and Climate Resilient Society.
- Renewable Electricity Support Scheme to contribute to Ireland's 2020 renewable electricity targets and to deliver Ireland's renewable energy ambitions out to 2030.
- Department of Housing, Planning and Local Government is currently preparing an update to the 2006 Wind Energy Development Guidelines and in December 2019 published revised draft Wind Energy Development Guidelines for consultation.
- Department of Environment, Climate and Communications is preparing a Renewable Electricity Policy and Development Framework to guide the development of renewable electricity projects in line with the objectives of Irish energy policy.
- Climate Action and Low Carbon Development (Amendment) Bill 2021. Legislation designed to put Ireland on a path to net zero emissions, no later than 2050 and a 51% reduction in emissions by the end of the decade.



The Proposed Location

The location for the proposed wind farm is shown in Figure 1 below. It is adjacent to the communities of Gortnahoe, Littleton, New Birmingham, Twomileborris and Urlingford.

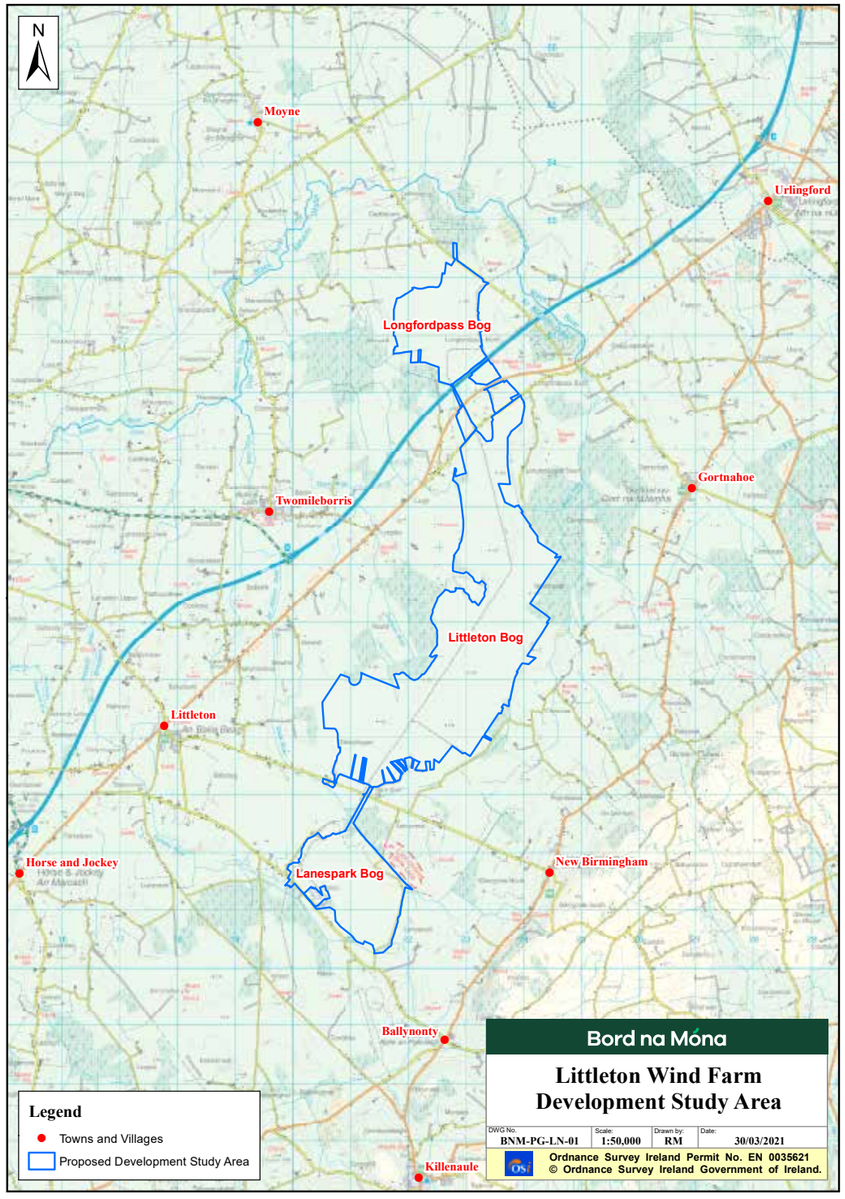


Figure 1 - Site Location Map

The proposed development will be located across the Bord na Móna Littleton Bog Group in Co. Tipperary which is circa 1,020 hectares. A draft layout, consisting of 14 turbines has been developed for the proposed wind farm (to view draft layout map, please refer to pages 6).

It is envisaged the proposed development footprint would occupy approximately 5% of the total site area for turbine bases, crane hard-standings and access tracks, meaning much of the land area will not be required by the development. This provides opportunity for the remainder of the site to be utilised for other purposes, such as biodiversity and amenity.

Site Layout Design

In designing a layout for the proposed Littleton Wind Farm several factors were considered including:



Biodiversity

Extensive surveys are ongoing to determine the habitats and species that occur within the site and the wider hinterland area. Features that are sensitive from a biodiversity perspective are constrained out at design stage. The surveys include breeding and wintering bird surveys, habitat surveys, bat, mammal and aquatic surveys, amongst others. A full description of the biodiversity of Littleton Bog and the surrounding area will be addressed in the Environmental Impact Assessment Report (EIAR) that will accompany the planning application for the proposed development, in particular the following chapters: Biodiversity; and Ornithology (birds).



The Proposed Wind Farm

Number of Turbines - 14

The draft layout comprises of 14 wind turbines. Apart from the turbines themselves, the other principal components of the wind farm are the foundations to support the turbine towers, access, crane hard standings, underground cables between the turbines, an electricity substation and an electrical connection to the appropriate node on the National Grid. Please see pages 6 for Draft Layout Map.

Height of Turbines - 200m

The proposed turbines will have an overall blade tip height of up to 200 metres. Within this size envelope, various configurations of hub height and rotor diameter may be used. The exact make and model of the turbine will be dictated by a competitive tender process, post planning and it will not exceed the maximum tip height of 200 metres.

Setback Distance - 800m

The turbine layout has been designed with a minimum setback distance of 800m to the nearest house from a turbine. This complies with the Draft Wind Energy Development Guidelines (2019), which proposes a setback distance of 4 times the tip height.

Table 1 depicts the number of houses within a range of setback distance bands from the proposed turbine layout (refer to the Draft Layout Map on pages 6).

Distance	No. of Houses	Cumulative
800m	0	0
1,000m	30	30
1,250m	25	55
1,500m	26	81
1,750m	36	117
2,000m	39	156

Table 1. Setback Distance to Houses



Wind Farm Output: 60–80MW

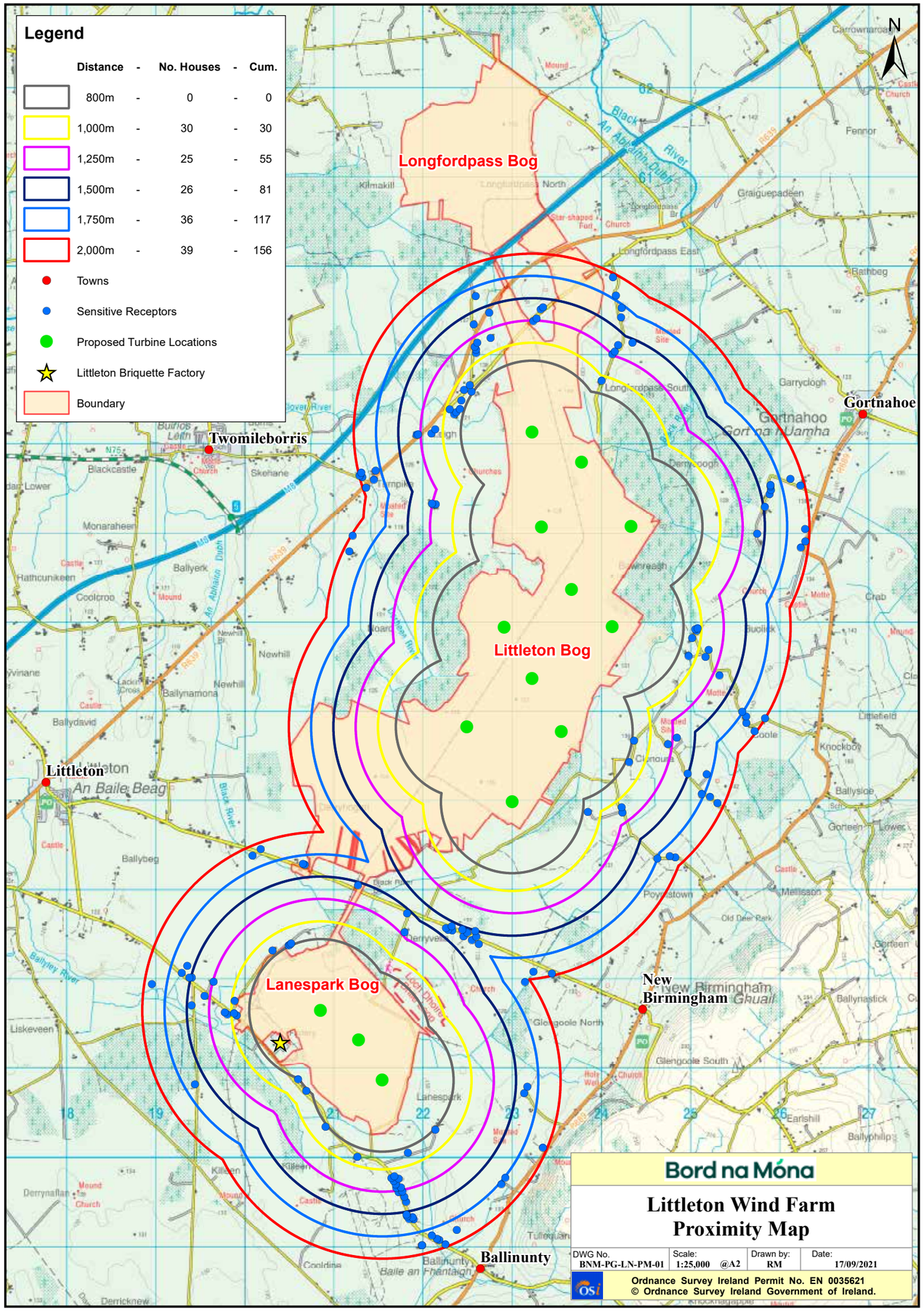
Early studies of the site have indicated that it may be capable of accommodating approximately 60–80 Megawatts (MW) of installed generating capacity. When operational, the proposed Littleton Wind Farm will generate a volume of electricity equivalent to the average annual electrical demand of circa 45,000 Irish homes*.

Planning Timeline

It is intended to submit a planning application in Autumn 2022 for the proposed development. It is envisaged that the planning permission application will be submitted directly to An Bord Pleanála, under the provisions of the Planning and Development (Strategic Infrastructure) Act 2006 (please refer to page 12 for more information on the wind farm development timeline process).

2nd Public Consultation: Autumn/Winter 2021
Final Layout Publication: Spring 2022
Submission of Planning Application: Autumn 2022

**based on Annual Capacity Factor across Ireland in 2019 of 29.3% and average household electricity consumption of 4,200kwH*



Strategic Infrastructure Planning Process Explained

For most large projects, a key issue is whether a development is Strategic Infrastructure Development (SID) or not?

Energy infrastructure which is considered SID* includes:

"An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 megawatts"

*(as outlined in the Seventh Schedule, Section 1 of the Planning and Development (Strategic Infrastructure) Act 2006).

SID Projects	Non-SID Projects
Planning Application to An Bord Pleanála	Planning Application to Local County Council
Environmental Impact Assessment Mandatory	Environmental Impact Assessment Mandatory in some cases

At this stage of the project, Bord na Móna estimate that the output of the proposed Littleton Wind Farm will be approximately 60–80MW. Consequently, Bord na Móna will need to go through a pre-planning consultation process with An Bord Pleanála to determine with certainty who the consenting authority will be.

Irrespective of the Consenting Authority it is our view that an Environmental Impact Assessment Report will be required as supporting documentation to the planning application.



Benefits of the Development

The proposed development will give rise to a range of benefits at different levels. At a Local Level, benefits arising from the construction and operation of the proposed wind farm will include:

- Employment
- Amenity and Recreational Facilities
- The provision of a Community Benefit Fund
- Substantial rates paid to the relevant Local Authority.
- Upgrading of the road infrastructure in the vicinity of the wind farm (as required).
- Payment of taxes from the project, and dividends from Bord na Móna to the State.

Employment

A large wind farm development of this scale would typically support 80–100 jobs at peak construction. There will also be indirect employment created through the sub-supply of a wide range of products and services including: gravel and graded stone for roads and hard stands, concrete and steel for turbine bases, building materials for sub stations, haulage of components from the ports to the site, accommodation, legal and financial services. Once complete the project will also support a number of long term, high quality technical jobs in operations and maintenance.

Amenity and Recreational Facilities

A high-level amenity plan will accompany the planning application and we would welcome any feedback or proposals the community may have with respect to amenity.

A good example of one of our existing wind farm amenity facilities is Mountlucas Wind Farm in North Offaly. The site consists of a 10km walkway / cycleway around the wind farm in addition to interpretative signage, outdoor exercise equipment and a learning hub which is utilised by various school and college groups for educational purposes and day trips. In 2020, the wind farm welcomed over 45,000 visits to its amenity facilities.

Community Benefit Fund

Similar to our existing wind farms, it is envisaged that an annual Community Benefit Fund will be set up for the proposed Littleton Wind Farm once the project is operational. As the project is at an early stage of its development, the exact nature and structure of a proposed Community Benefit Fund is not known at this time, albeit we would envisage it being similar in type to our existing Community Benefit Funds which include:

- A Community Gain Scheme – providing funding to local community and not-for-profit organisations
- A Near Neighbour Fund – providing an annual electricity contribution and once off support to carry out energy efficiency measures and/or education support to residents within a prescribed distance of a turbine.





Community Engagement

Bord na Móna understands the importance of community engagement at every stage of the proposed Littleton Wind Farm development process. The proposed development will benefit from participation by all interested parties during each stage of the development.

We are constantly updating and adapting our communications channels to ensure the public are informed about the proposed development. This means continuing to use our traditional methods of communication in addition to a number of interactive online tools to ensure we engage on an ongoing basis through the following:

Community Engagement Sessions

Subject to the proposed further easing of Covid-19 restrictions *(currently scheduled for the 22 October)* we intend to hold a series of Community Engagement Sessions in late November in the locality. While we do not have a schedule of fixed dates at this time *(due to pending confirmation of the easing of restrictions mentioned above),* once known, details of these Sessions will be advertised via local media or alternatively, if you have signed up to our project mailing list you will receive a letter via post with these details. If you would like to find out more about the Sessions and/or register your interest in attending, please contact the Project's Community Liaison Officer Colm (087 414 3305) or, visit the Project website (**www.littletonwindfarm.ie**.) where you can join our mailing list.

A Feedback Questionnaire

Should you wish to submit any comments/suggestions on the proposed development, a feedback questionnaire can also be completed on the project website. For your convenience, we have included a paper-based copy of the questionnaire and a freepost envelope within the project information pack you received for the proposed wind farm.

A Virtual Consultation Room

As part of our Community Engagement activities, we have updated the Littleton Wind Farm "Virtual Consultation Room' that was launched last Spring as part of our Communication Tools for the project. The Virtual Consultation Room contains a number of interactive features including a 360° Photomontage viewer and a virtual 'fly by' video of the site location. Please feel free to visit the Virtual Consultation Room via the project's dedicated website **www.littletonwindfarm.ie.**



Get in Touch

The Littleton Wind Farm will benefit from participation by all interested parties during each stage of the development. There is a few ways you can get in touch with us:



Call Us

If you wish to make a comment or require further information about the proposed wind farm please call the project's
Community Liaison Officer
Colm
+ 353 (0)87 414 3305*

Email Us

Email us any comments or queries via:
littletonwindfarm@bnm.ie

Write to us

Littleton Wind Farm Communications Team,
Bord na Móna,
Main Street,
Newbridge,
Co. Kildare

Join our Mailing List

Keep informed of all project updates by signing up to our project mailing list. Please visit the project website to complete the sign-up form:
www.littletonwindfarm.ie

**9 a.m. to 5 p.m. Monday to Friday excluding bank holidays*



How long does it take to develop a wind farm?

6 – 9 months

Site selection & feasibility studies

24 months

Preparation of planning application

Up to 24 months

Planning Consent

12 - 18 months

Pre-construction studies, procurement and financial close

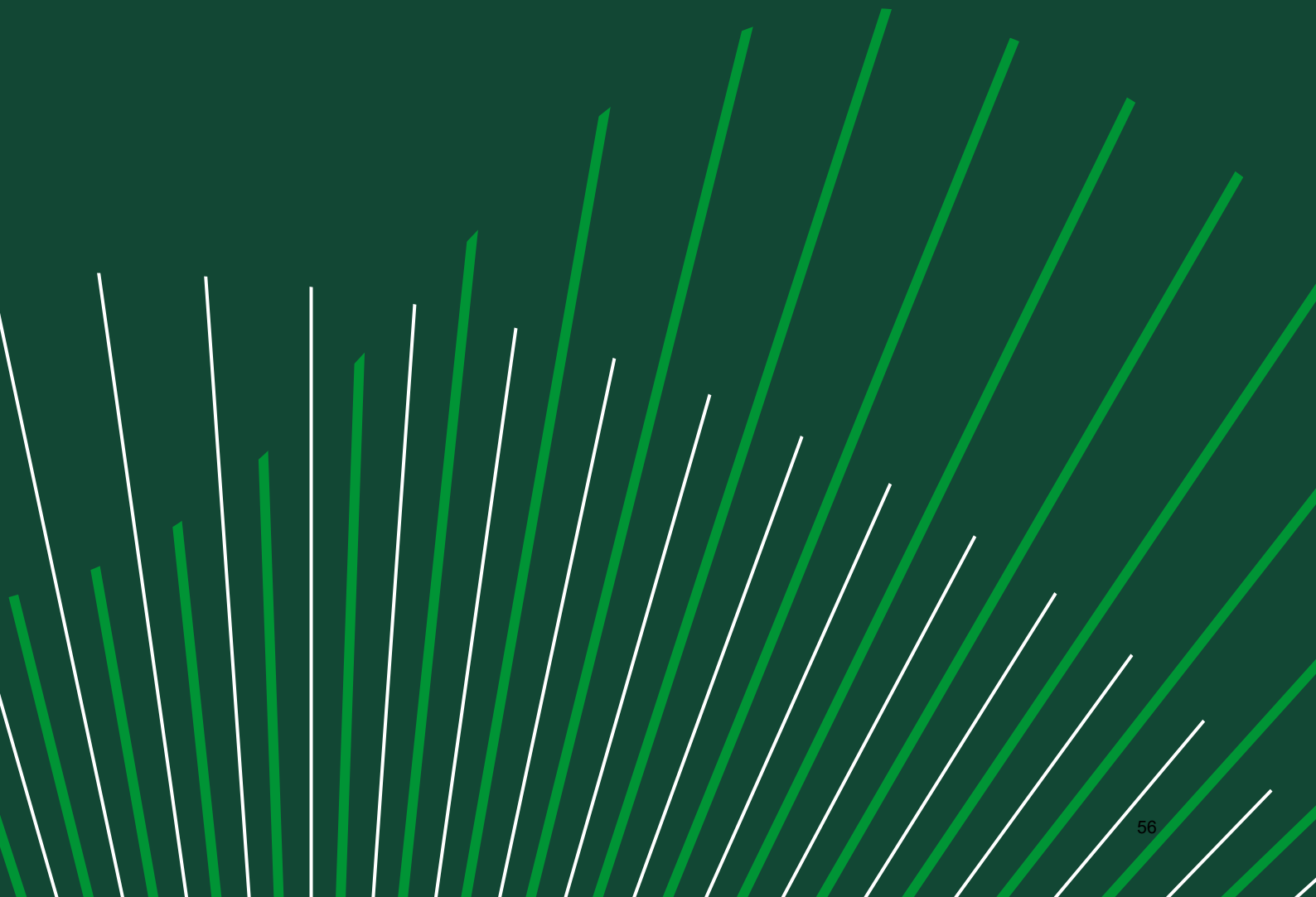
18 - 24 months

Construction of wind farm (including commissioning)

Typically 6 to 8 years

Notes

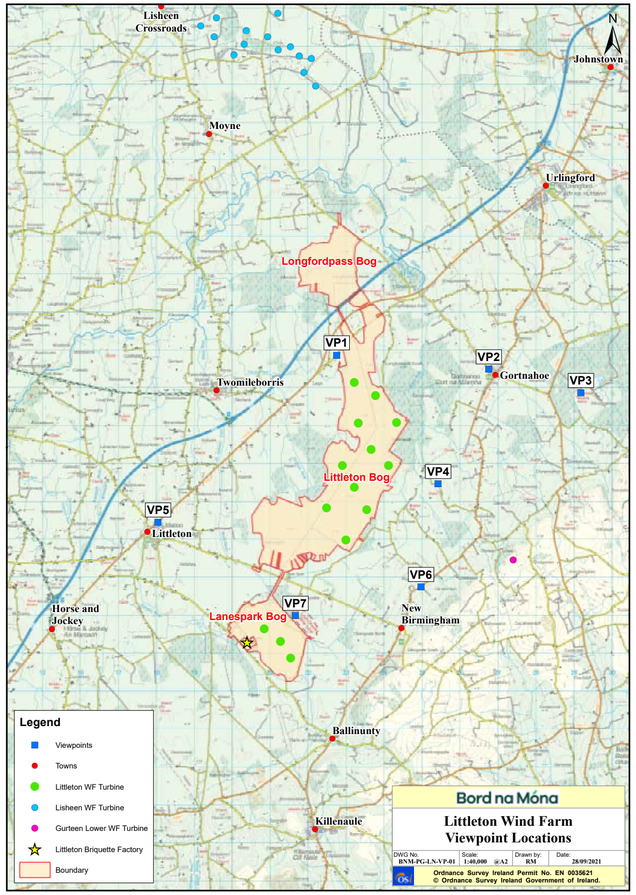




Photomontage Booklet for Proposed Littleton Wind Farm

Bord na Móna





What is a Photomontage?

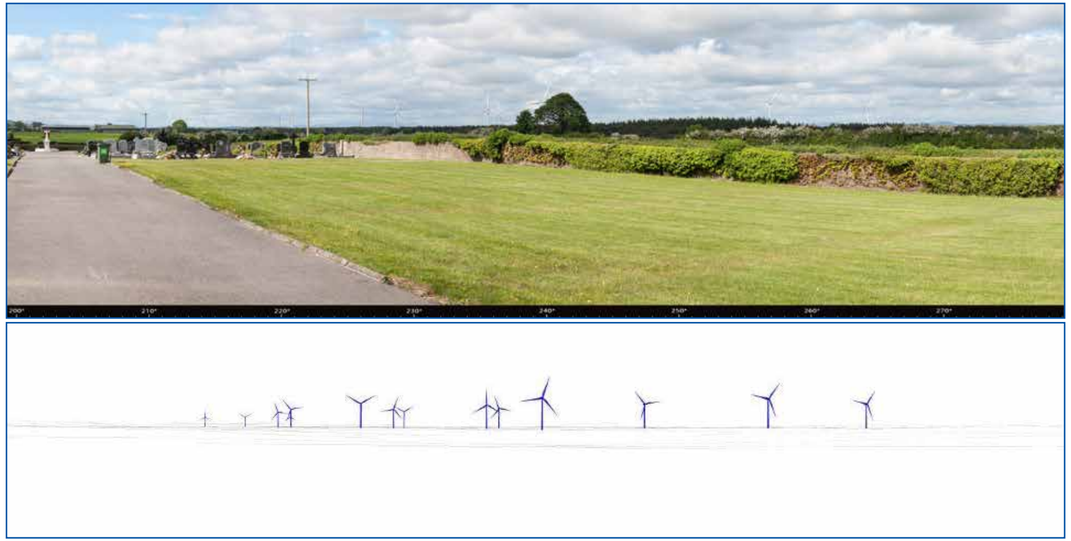
A typical tool utilised in the assessment of the visual impact of a wind farm is a Photomontage. Photomontages are visualisations that superimpose an image of a proposed development upon a photograph or series of photographs and are used to illustrate the potential impact of a development on the existing landscape. A number of photomontages will accompany the planning application as part of the Landscape and Visual Impact Assessment (LVIA) for the proposed wind farm. Within this booklet you will find samples of the photomontages which will form part of the LVIA for this proposed development.

To view a larger copy of the viewpoint map shown here please refer to the A2 double sided map included in the project consultation pack.



Viewpoint 1: View from Local Road in the townland of Leigh approximately 1km west of the proposed development.
VP1 on Viewpoint Locations Map.

Legend
Littleton WF Turbines



Viewpoint 2: View from the Good Shepard Cemetery at Gortnahoe, approximately 2.5km northeast of the proposed development.
VP2 on Viewpoint Locations Map.

Legend
Littleton WF Turbines



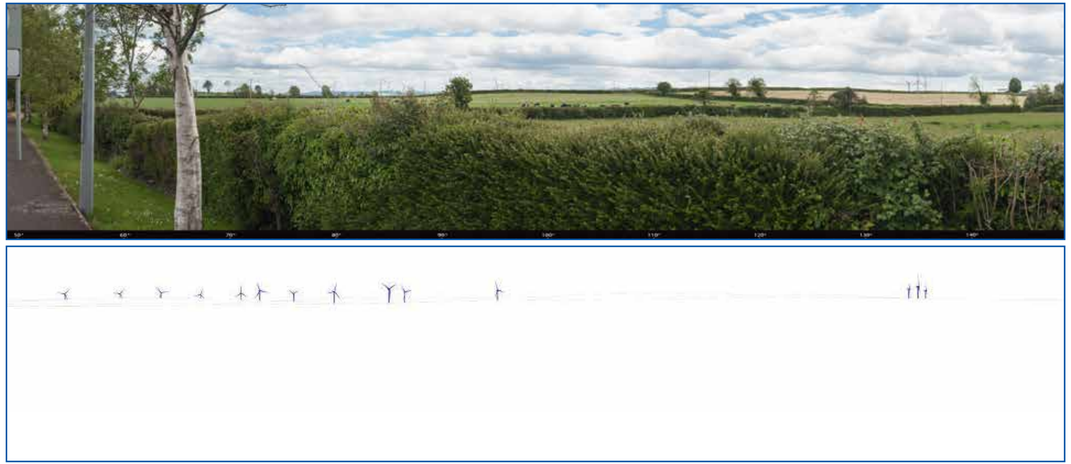
Viewpoint 3: View from Kilcooley Abbey, approximately 4.5km northeast of the proposed development.
VP3 on Viewpoint Locations Map.

Legend
Littleton WF Turbines



Viewpoint 4: View from the Local Road in the townland of Bawnreagh, approximately 1.1km east of the proposed development.
VP4 on Viewpoint Locations Map.

Legend
Littleton WF Turbines



Viewpoint 5: View from the Regional Road (R639), north of Littleton, in the townland of Ballydavid and approximately 2.5km west of the proposed development.
VP5 on Viewpoint Locations Map.

Legend
Littleton WF Turbines



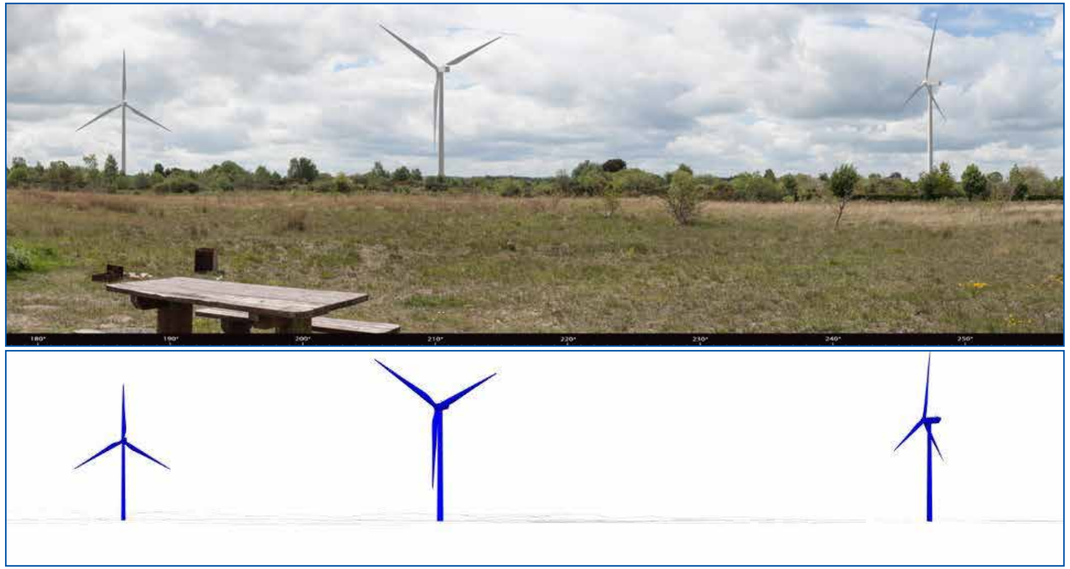
Viewpoint 6: View from the Regional Road (R689) in the townland of Poynstown, approximately 2.1km east of the proposed development.
VP6 on Viewpoint Locations Map.

Legend	
Littleton WF Turbines	



Viewpoint 7a: View from Lough Doire Bhile Looped Walking Trailing looking north and approximately 2.4km from the proposed development.
VP7 on Viewpoint Locations Map.

Legend	
Littleton WF Turbines	



Viewpoint 7b: View from Lough Doire Bhile Looped Walking Trailing looking south and approximately 0.8km from the proposed development.
VP7 on Viewpoint Locations Map.

Legend	
Littleton WF Turbines	

Notes

Legend

Distance	-	No. Houses	-	Cum.
800m	-	0	-	0
1,000m	-	30	-	30
1,250m	-	25	-	55
1,500m	-	26	-	81
1,750m	-	36	-	117
2,000m	-	39	-	156

Towns

Sensitive Receptors

Proposed Turbine Locations

Littleton Briquette Factory

Boundary

N

Longfordpass Bog

Littleton Bog

Lanespark Bog

Twomileborris

Littleton

Gortnahoe

New Birmingham

Ballinunty

Bord na Móna

Littleton Wind Farm
Proximity Map

DWG No.	Scale:	Drawn by:	Date:
BNM-PG-LN-PM-01	1:25,000 @A2	RM	17/09/2021

Ordnance Survey Ireland Permit No. EN 0035621
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Lisheen Crossroads

Moyne

Longfordpass Bog

Johnstown

Urlingford

VP1

VP2

Gortnahoe

VP3

Twomileborris

Littleton Bog

VP4

VP5

Littleton

VP6

New Birmingham

VP7

Lanespark Bog

Horse and Jockey

Ballinunty

Killenaule

N

Legend

- Viewpoints
- Towns
- Littleton WF Turbine
- Lisheen WF Turbine
- Gurteen Lower WF Turbine
- Littleton Briquette Factory
- Boundary

Bord na Móna

Littleton Wind Farm Viewpoint Locations

DWG No.	Scale:	Drawn by:	Date:
BNM-PG-LN-VP-01	1:40,000 @A2	RM	28/09/2021

Ordnance Survey Ireland Permit No. EN 0035621
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Bord na Móna

Littleton Wind Farm
Feedback Questionnaire

Please return completed form by 17th December
You can also complete this questionnaire online
by visiting **www.littletonwindfarm.ie**

To record your views and also help us improve future public consultation concerning this project we would be grateful if you would answer the following questions.

Q1. Do you have any feedback with regard to the draft layout for the proposed Littleton Wind Farm?

.....

.....

.....

.....

Q2. Do you have any amenity suggestions that you would like us to consider for inclusion in the proposed Littleton Wind Farm development?

.....

.....

.....

.....

Q3. What types of benefits do you believe the local community should receive if the wind farm is developed?

.....

.....

.....

.....

Q4. Do you feel this consultation process has enhanced your understanding of the proposed Littleton Wind Farm? If no, please state the reasons why?

.....

.....

.....

.....

Q5. Have you any other comments or additional information you would like to provide in relation to the proposed development.

.....

.....

.....

.....

PLEASE COMPLETE IN BLOCK CAPITALS.

Name: .....

Address: .....

Eircode: .....

Please return completed feedback questionnaire via Freepost envelope enclosed
or via email to: **littletonwindfarm@bnm.ie**

Bord na Móna

Littleton Wind Farm

Consent form to join postal communications list

You can also complete this form online by visiting **www.littletonwindfarm.ie**

Dear Resident,

To keep you informed of all relevant project updates Bord na Móna Powergen Ltd. is providing the option to subscribe to our postal service to provide project updates. If you wish to participate in this service for the Littleton Wind Farm project, please provide your name and address on the below form and return it via freepost in the enclosed envelope. Please note you can Opt-Out of the service at any time by email to Littletonwindfarm@bnm.ie or by writing to: Littleton Wind Farm, Bord na Móna Powergen, Newbridge Co. Kildare.

For the purposes of data protection, please note that the only personal data that we hold will be your name and address. This will not be connected to any other personal data relating to you. Your details will be stored in a secure encrypted database on the Bord na Móna servers for the duration of the Littleton Wind Farm project (or until you opt out of the service). Your details will only be used to send you postal updates with relevant project updates for the Littleton Wind Farm project.

If you decide to opt out at any time, your details will be securely deleted from our systems and you will no longer be contacted. Otherwise, your details will be deleted from our systems on completion of the Littleton Wind Farm project. By submitting your name and address to us, you are consenting to allow us to use your information for the above purpose.

Yours Faithfully,
Littleton Wind Farm Communications Team

By submitting my contact details to Bord na Móna Powergen Ltd., I consent **to allow** them to use my information to send me relevant project updates via post for the Littleton Wind Farm project.

PLEASE COMPLETE IN BLOCK CAPITALS

Name:

_____

Address:

_____

Eircode:

_____

Please return via the freepost envelope enclosed to:
Bord na Móna Renewable Energy, FREEPOST FNS109, Newbridge, Co. Kildare.

Littleton Wind Farm

Communications Opt Out Form

You can also complete this form online by visiting **www.littletonwindfarm.ie**

Dear Resident,

Should you **not** wish to receive any further related information on the proposed development please complete the form below and return via the freepost envelope enclosed.

For the purposes of data protection, please note that the only personal data that we hold will be your name and Eircode. This will not be connected to any other personal data relating to you. Your details will be stored in a secure encrypted database on the Bord na Móna servers for the duration of the Littleton Wind Farm project. Your details will only be used to ensure you are **not included** on any of circulation lists for project updates/further related information on the Littleton Wind Farm project. Your details will be deleted from our systems on completion of the Littleton Wind Farm project.

By submitting your name and Eircode to us, you are consenting to allow us to use your information for the above purpose.

Yours Faithfully,
Littleton Wind Farm Communications Team

By submitting my contact details to Bord na Móna Powergen Ltd., I confirm I **do not** wish to receive any further related information on the proposed Littleton Wind Farm project.

PLEASE COMPLETE IN BLOCK CAPITALS

Name:

_____

Address:

_____

Eircode:

_____

Please return via the freepost envelope enclosed to:
Bord na Móna Renewable Energy, FREEPOST FNS109, Newbridge, Co. Kildare.

Appendix 3

Community Engagement Sessions Letter

Bord na Móna

Bord na Móna Giniúint Cumhachta Oifig Chláraithe: An bPriómhshráid, Droichead Nua, Co. Chill Dara, W12 XR59, Éire
Bord na Móna Powergen Limited Registered Office: Main Street, Newbridge, Co. Kildare, W12 XR59, Ireland
Fón /T +353 (0)45 439 000 Facs/F +353(0) 45 439 001 bordnamona.ie

15th November 2021

Dear (insert name)

Project: Proposed Littleton Wind Farm

The purpose of this communication is to provide you with an update on the proposed Community Engagement Sessions regarding the draft layout for the proposed Littleton Wind Farm.

Community Information Sessions have been organised as follows:

- Tuesday 30th November: Moycarkey-Borris Community Centre
- Wednesday 1st December: Glengoole Community Hall
- Thursday 2nd December: Gortnahoe Community Centre

All sessions will run from 5-9pm.

We invite you to attend one of these Community Engagement Sessions during the scheduled opening hours. These sessions will be held in line with the most up to date Covid-19 Government Health Guidelines. Attendees will be required to provide proof of COVID Certificate & ID before entry.

In the meantime, for more information on the proposed development please contact the Project's Community Liaison Officer Colm on 087-4143305.

Yours Faithfully,
Littleton Wind Farm Communications Team

Appendix 4

Joint Venture Annoucement Letter - TDs, Councillors and Community Groups

March 2024

Dear Councillor,

Bord na Móna partners with SSE Renewables to deliver Littleton Wind Farm.

Bord na Móna have announced a significant joint venture with one of Ireland's leading renewable energy companies SSE Renewables to develop a series of onshore wind energy projects across the Midlands. This partnership will deliver up to 800 MW of new renewable energy generation for Ireland.

The joint venture includes the proposed Littleton Wind Farm located in Tipperary. Since the first announcement of this proposed wind farm in 2021, Bord na Móna has appointed a project Community Engagement and Stakeholder Team including a designated Community Liaison Officer to engage with local communities and near neighbours. This team remains in place and your local Community Liaison Officer will continue to be Colm Dempsey, whose contact details are provided below.

The wind farms jointly developed by Bord na Móna and SSE Renewables will contribute towards the goals set out in Ireland's Climate Action Plan 2023 and will also offer new economic opportunities across the Midlands, with the creation of hundreds of jobs. Working together, both companies will leverage their extensive expertise, resources, and presence across Ireland to generate positive outcomes for communities, local economies, and climate change.

All wind farms developed as part of this joint venture portfolio will have strong commitments to community benefits. Associated Community Benefit Funds will invest in local communities across the Midlands, delivering new public amenities where possible, and delivering biodiversity net gain across all sites.

The joint venture partnership is fully committed to continuing to inform and engage with you through an active communication programme. We are finalising the project design currently and will circulate updates to you in the coming months.

Your local Community Liaison Officer, Colm Dempsey will continue to be available to meet residents as before and is contactable at 087 4143305 or via littletonwindfarm@bnm.ie.

Yours faithfully,

Littleton Wind Farm Communication Team

Appendix 5

Final Layout and Draft Amenity Plan Letter - TDs, Councillors and Community Groups

Autumn 2025

Project: Proposed Littleton Wind Farm – Final Turbine Layout

Dear Resident,

The purpose of this communication is to provide you with an update on the proposed Littleton Wind Farm, and to advise that we have organised a Public Information Evening on 8th October 2025 from 5.00pm – 8.30pm.

Since the last communication on this proposed wind farm, the project team has been advancing the project design and has now produced a final layout for the proposed development. Accompanying this letter please find enclosed a double-sided map showing the final turbine layout and internal infrastructure for the proposed Littleton Wind Farm.

The revisions to the layout are primarily associated with feedback from public consultation events held in 2021 and revisions to the site constraints arising from further studies. The revised proposal, for which BnM and SSE Renewables intend to submit a planning application in the coming months, comprises of 11 turbines with an overall tip height of 200 metres. For reference, the previous draft layout, published in 2021, consisted of 14 turbines, with an overall tip height of 200 metres.

The proposed turbine layout design has taken account of the requirement of the *"Draft Wind Energy Development Guidelines (2019)"*, which proposes a visual amenity setback of four times the turbine tip height between a wind turbine and the nearest residential property, subject to a mandatory minimum requirement of 500 metres. The minimum setback distance applied to the proposed layout is 800 metres.

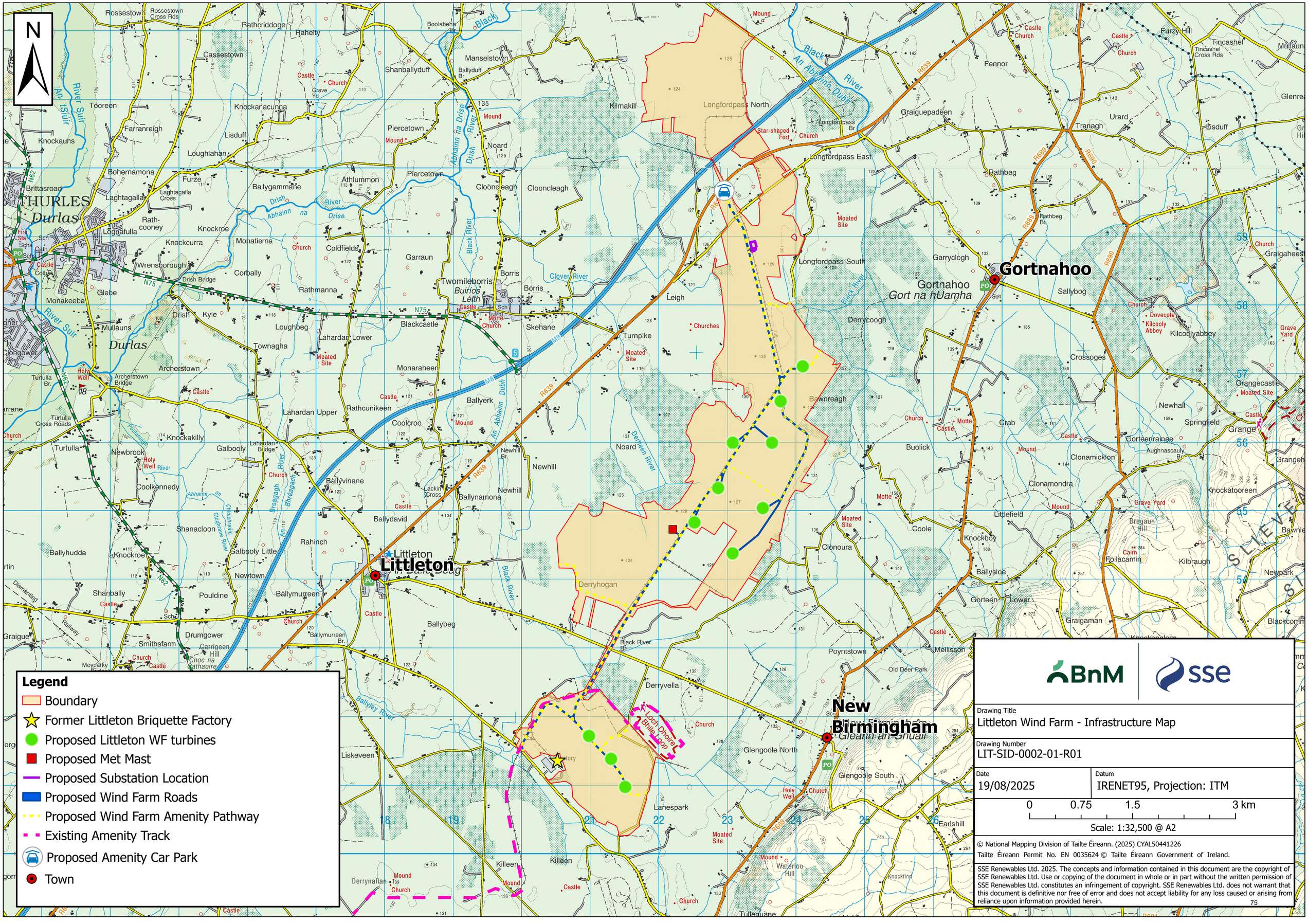
It is intended that the revised layout as shown on the enclosed map will be the layout submitted with the planning application – which is envisaged to be lodged in the coming months. Should there be any significant change to the proposed layout prior to submission we will keep you informed.

The proposed wind farm will include the construction of new access roads to install and maintain the wind turbines. The Draft Amenity Plan will seek to utilise these new access roads as a basis for most of the proposed trails for walking and cycling. Additional amenity links are all proposed as part of the wind farm development to create loops and increase accessibility within the site. Please refer to the enclosed map for more detail on the proposed draft amenity plans for the development.

We will inform you directly when a planning application has been lodged for the proposed development. In the meantime, we would like to invite you to attend a **Public Information Evening on 8th October 2025, from 5.00pm to 8.30pm in Moycarkey Borris Community & Sport Centre, Ballybeg, Littleton, Thurles, Co. Tipperary, E41 A0V5.**

If you would like further information on the proposed development in advance of the Information Evening please contact the Community Liaison Officer, Colm at 087 4143305 or contact us via **littletonwindfarm@bnm.ie**.

Yours faithfully,
Littleton Wind Farm Community Relations Team



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N

Gortnahoo

Littleton

New Birmingham

Legend

- Proposed Littleton WF turbines
- Dwellings
- 800m (0 Dwellings)
- 1000m (10 Dwellings, 10 Cum.)
- 1200m (7 Dwellings, 17 Cum.)
- 1400m (18 Dwellings, 35 Cum.)
- 1600m (16 Dwellings, 51 Cum.)
- 1800m (26 Dwellings, 77 Cum.)
- 2000m (19 Dwellings, 96 Cum.)

BnM | SSE

Drawing Title
Littleton Wind Farm - Proximity Map

Drawing Number
LIT-MISC-0001-01-R01

Date
18/08/2025

Datum
IRENET95, Projection: ITM

0 0.75 1.5 3 km

Scale: 1:35,000 @ A2

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Appendix 6

Print Media Advertisement Spring 2021

Littleton Wind Farm

Public Consultation Phase One

In line with ongoing company strategy, Bord na Móna is proposing to develop a wind farm within the Littleton Bog Group located in County Tipperary. The proposed wind farm will be known as Littleton Wind Farm.

Due to the current Coivd-19 restrictions in place, we are currently not in a position to hold a public event to discuss the proposed Littleton Wind Farm with you in person. Instead, we have launched a Virtual Public Consultation Experience on the dedicated project website: www.littletonwindfarm.ie

Through this Virtual Public Consultation Experience, you can view information on the proposed development, maps of the study area and submit feedback to the Project Team in a safe and accessible environment. As the project is at a very early stage, the proposed turbine locations or height have not yet been determined.

At this stage of the project, we are seeking to consult the local community about our intention to develop the proposed Littleton Wind Farm and to get your feedback on the proposed development. This can include any queries or concerns you may have on the proposed development or any information you have about the local area that you feel may be of interest to us.

To have your say, please complete the online survey via the dedicated project website mentioned above. You can also download a PDF version of the survey form from the above website. If you are unable to use the online survey you can send your completed survey form or other views, observations, or comments to us via the following channels:

By post to: Littleton Wind Farm, Bord na Móna, Main Street, Newbridge, Co. Kildare. W12 XR59
By email to: Littletonwindfarm@bnm.ie

Should you not have access to the internet, a postal copy of the public consultation material can be requested by contacting the project's Community Liaison Officer – Colm Dempsey on 087- 4143305 (Weekdays 9am-5pm).

Please return your feedback on this Consultation Phase to the Project Team by Friday 14th May 2021. A second round of Public Consultation will be held in Winter 2021.

The views submitted by you on our proposals, along with results from further studies, will help us to identify the best plan to take forward into the planning process. All feedback in relation to the proposed development will be reviewed and considered by the project team.

As part of our commitment to community engagement and to ensure you are kept up-to-date on developments of this project you can also join our project mailing list via the project website. Visit www.littletonwindfarm.ie for more information.

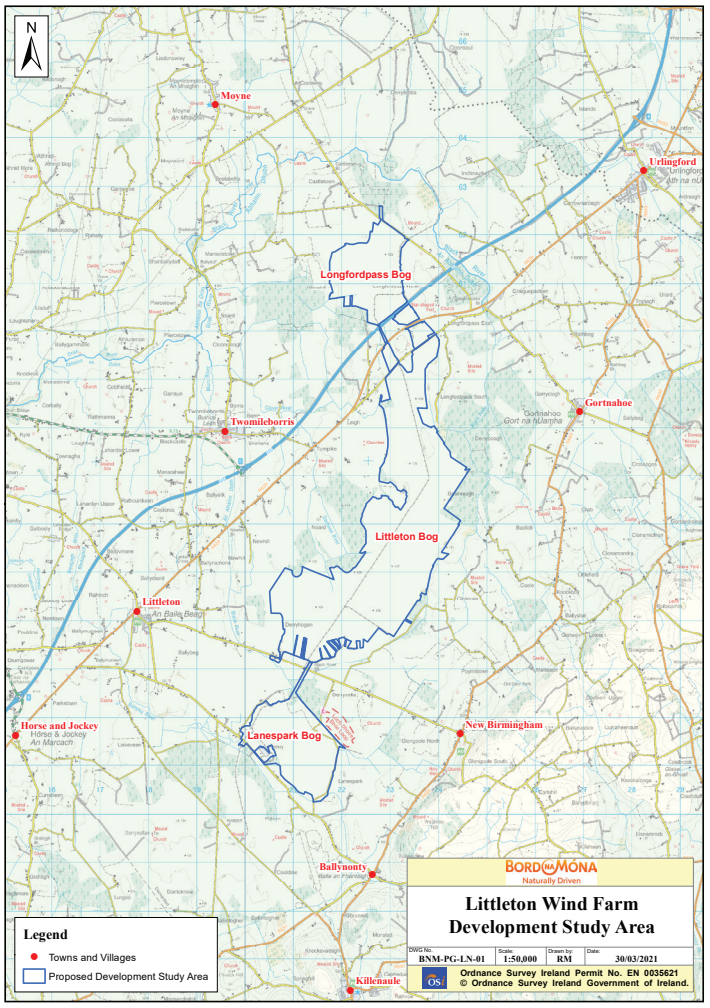


Figure 1: Development Study Area for Proposed Littleton Wind Farm

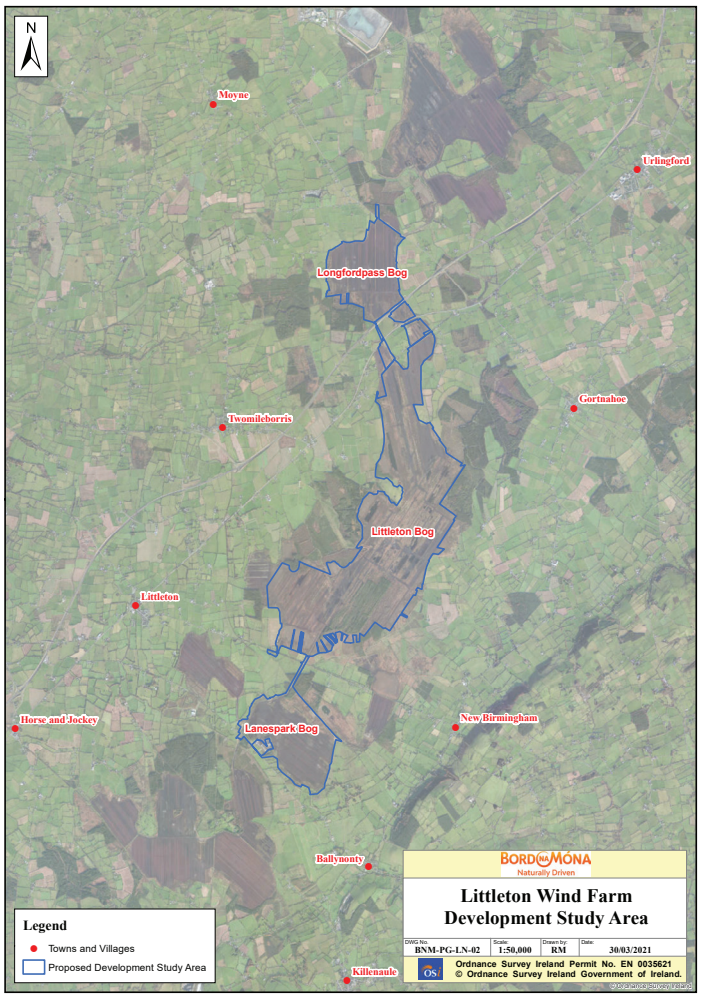
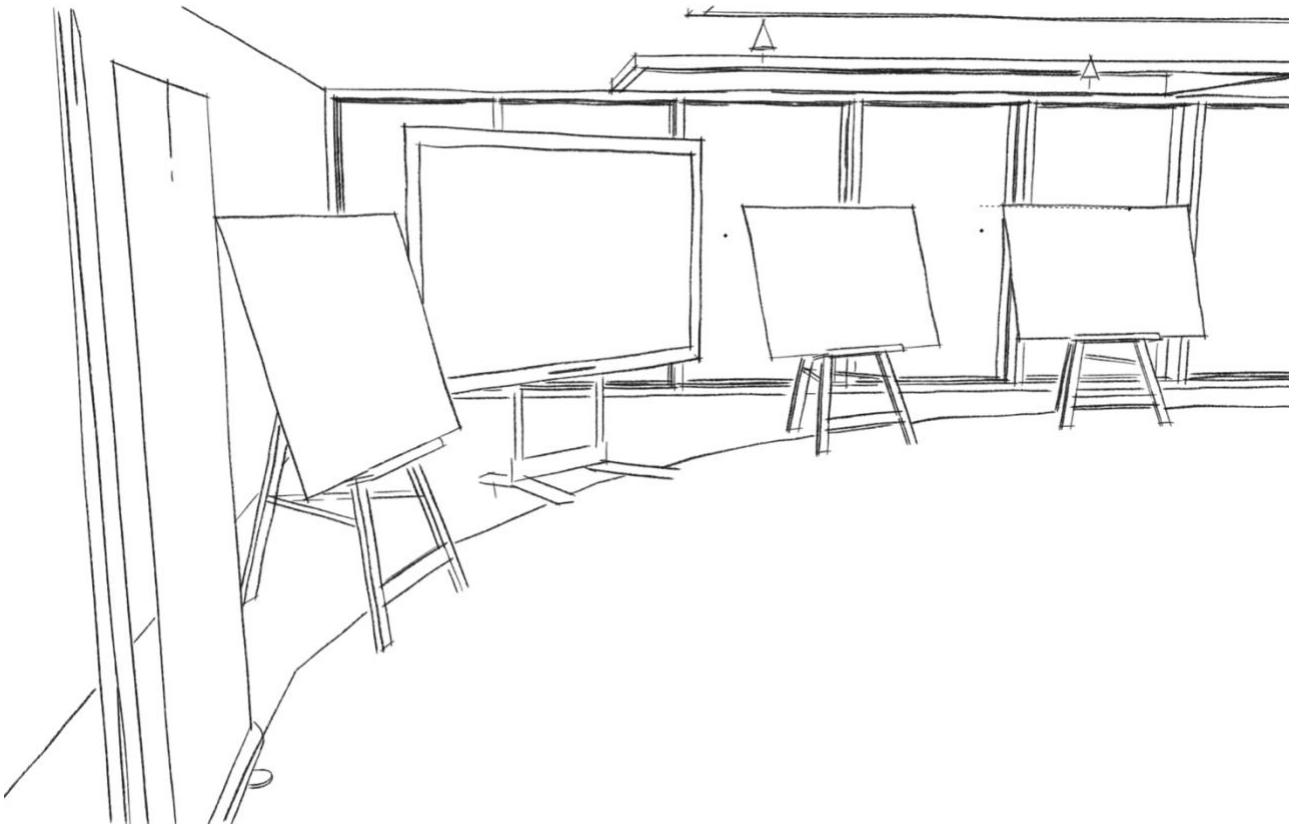


Figure 2: Development Study Area for Proposed Littleton Wind Farm (Ortho)

Appendix 7

Virtual Consultation Room Report Spring 2021



Virtual Public Exhibition
Web Traffic Report

Littleton Wind Farm

April 2021

Executive Summary

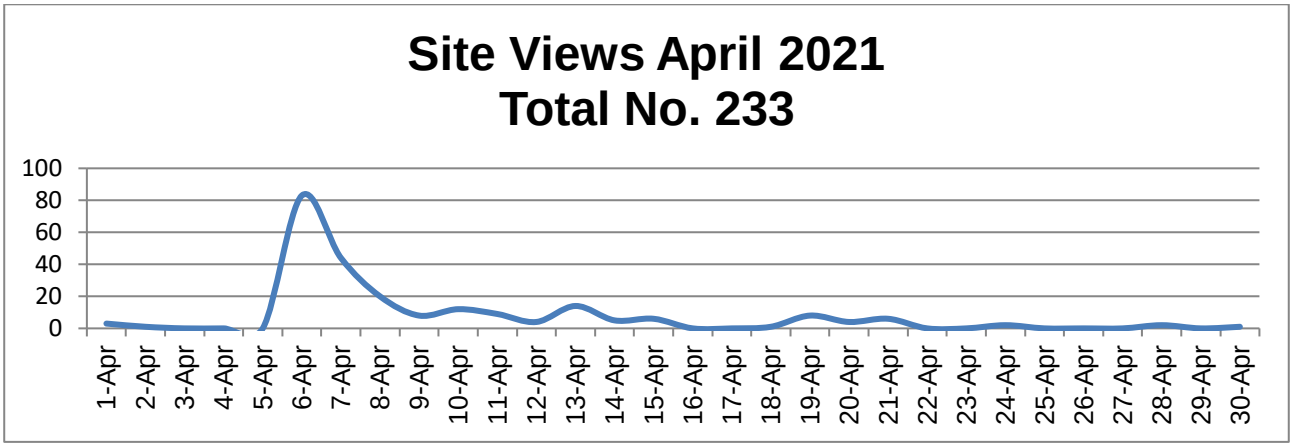
- The total number of visits to the site during this period was 233.
- The most popular parts of the site were the “Welcome” video followed by the “Proposed Littleton Wind Farm Project” banner.
- 35 visitors (15%) spent more than 5 minutes in the room.
- 82% of visitors were from Ireland with 36% of those in the Dublin area.
- A desktop/laptop computer was the most common device used to access the site.
- The most common platform in use was Windows.
- The browser used most frequently to access the site was Chrome.

Table of Contents

	Page
• Site Visits	3
• Top 5 Hotspot Clicks	4
• Duration of Site Visits	6
• Geographical Breakdown of Site Visitors	7
• Device, Browser and Platform Information	8

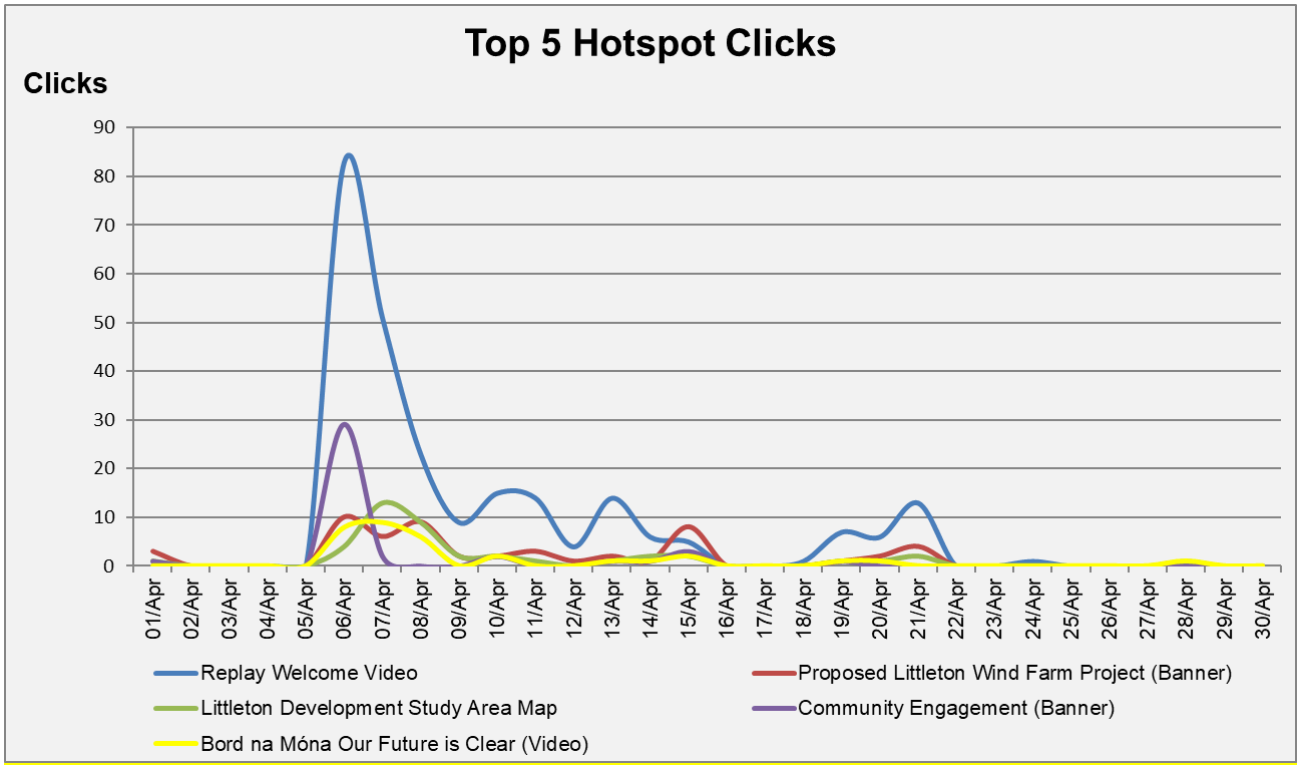
Site Visits

There were 233 visits to the room during the month of April. Most activity was during the week between the April 6th and April 13th. There was a small spike in activity again around April 20th. The graph below depicts the site views during the month.

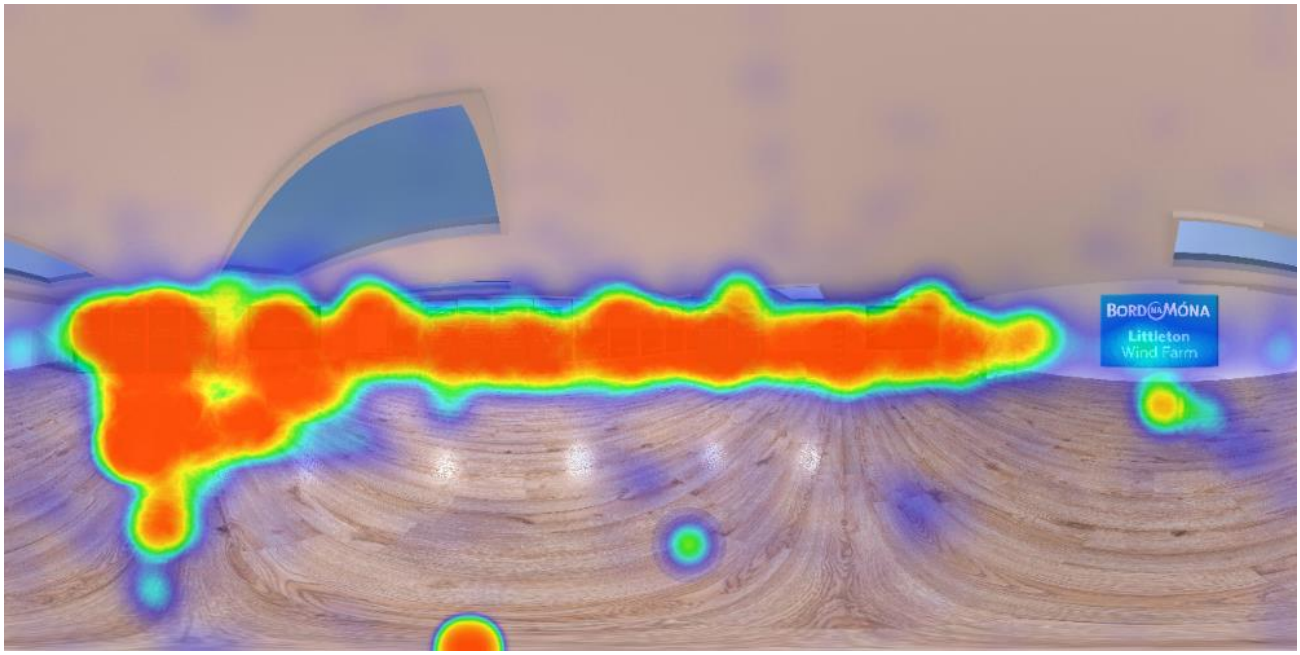


Top 5 Hotspot Clicks

The “Replay Welcome Video” was the most clicked on in the room with 253 clicks. This is followed by the “Proposed Littleton Wind Farm Project” banner and the “Littleton Development Study Area Map” with 54 and 41 clicks respectively. The “Community Engagement” banner attracted 40 clicks while the “Bord na Móna Our Future is Clear” video completed the most popular five with 32 clicks. All other figures are available in the table on page 5.



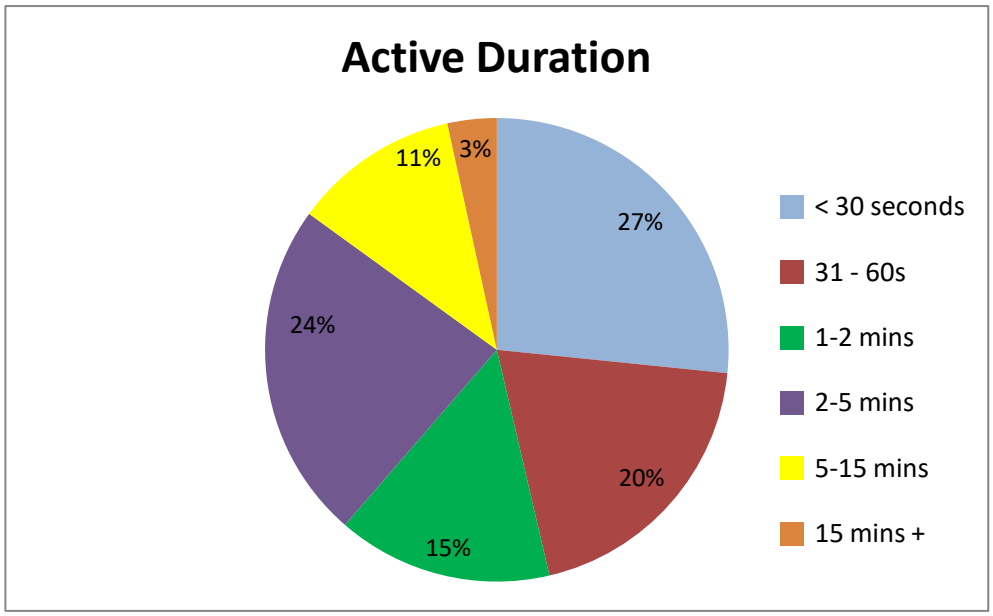
The heat map below indicates the areas of the room people have been looking at. The left-hand side, which is where visitors enter the room, shows the greatest popularity. There is steady activity throughout the room indicating that visitors were engaging throughout their visit.



Hotspot	No. Clicks
Replay Welcome Video	253
Proposed Littleton Wind Farm Project (Banner)	54
Littleton Development Study Area Map	41
Community Engagement (Banner)	40
Bord na Móna Our Future is Clear (Video)	32
Welcome (Banner)	29
Project Information Booklet	29
How Wind Turbines Operate (Banner)	27
Need For Wind Energy (Banner)	27
Oweninney Video	21
SID Process (Banner)	21
LVIA (Banner)	18
Benefits of the Development (Banner)	18
Community Engagement Clinics (Link)	17
Want to contact us?	17
FAQs	16
EIAR (Banner)	16
Exit / Project Feedback Questionnaire	14
Draft Revised Wind Energy Development Guidelines in Ireland (Banner)	13
Want to join our mailing list?	10
Have a minute to complete our project feedback questionnaire?	10
Total	**723**

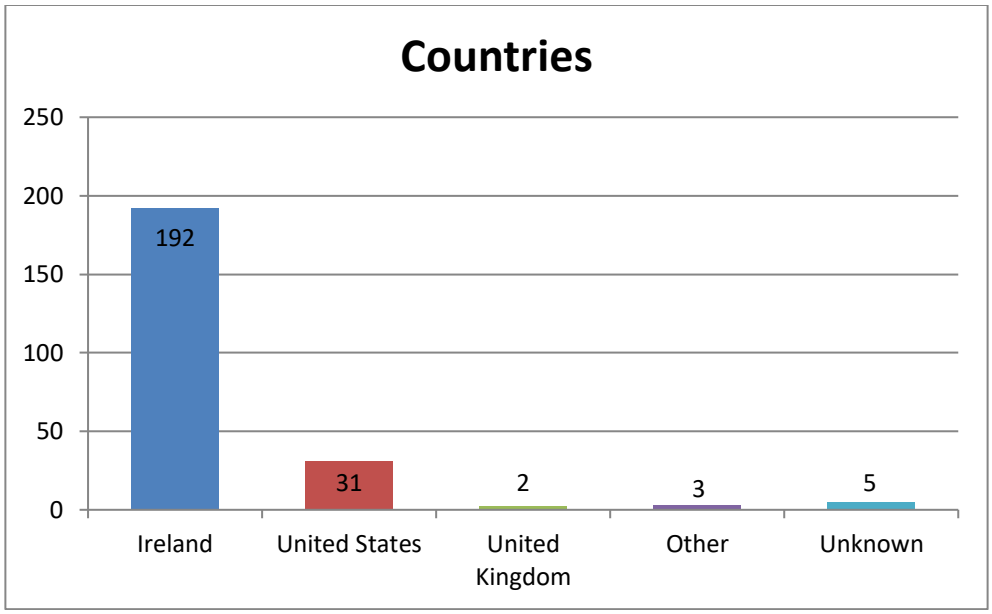
Duration of Site Visits

35 visitors (15%) spent longer than 5 minutes in the room while 108 visitors (46%) spent less than one minute in the room.

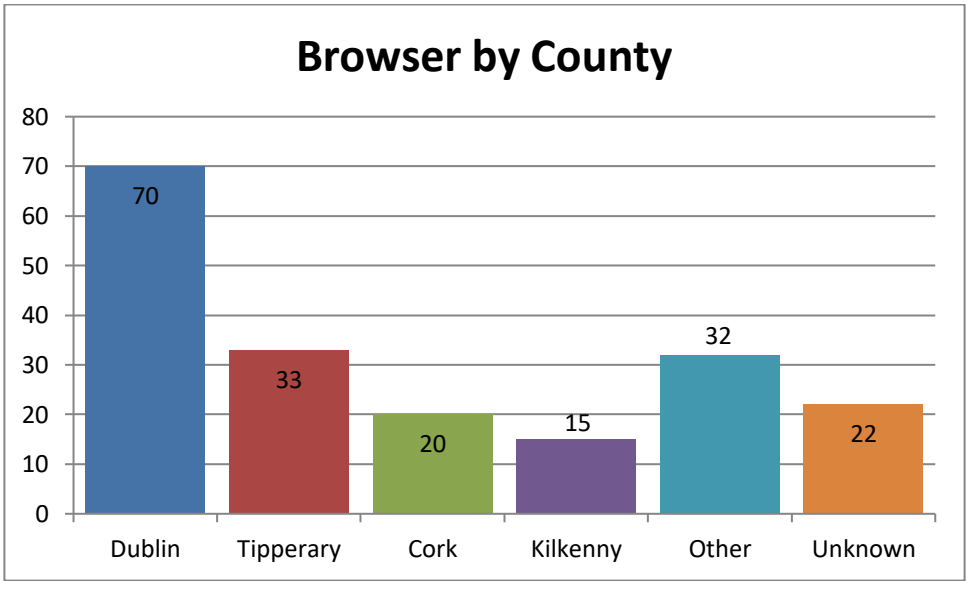


Geographical Breakdown of Site Visitors

82% of traffic in the period was from Ireland with 13% from the United States. The United Kingdom accounted for 1% while other countries or visits from unknown countries accounted for 4%.



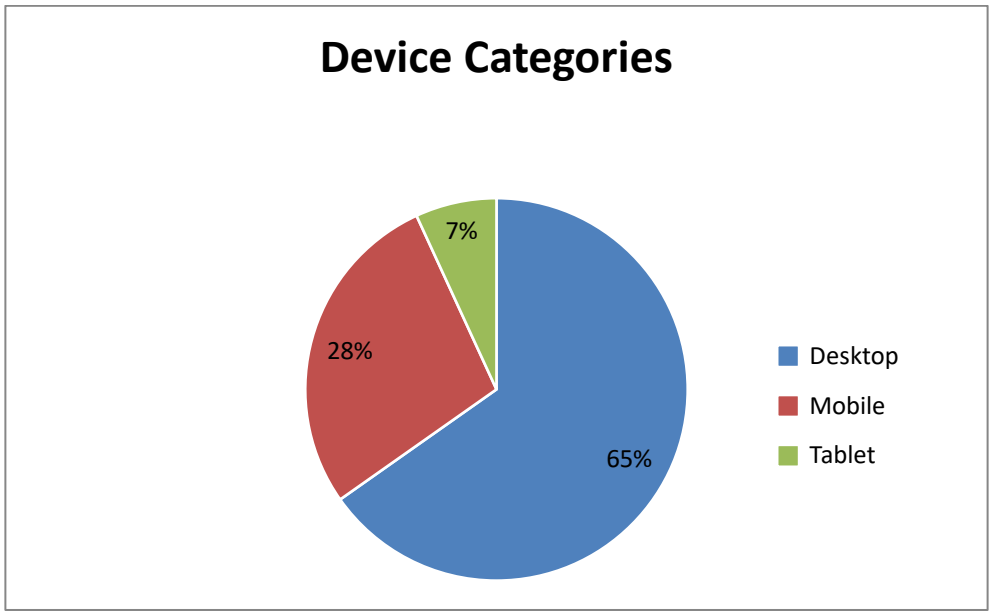
Dublin visitors (70) to the site represented approximately 36% of Irish visitors. There were 33 visitors from Tipperary, 20 from Cork and 15 from Kilkenny. A further 32 visitors were from other counties in Ireland. 22 visitors (11%) were from other locations in Ireland, but it was not possible to determine where due to user defined browser restrictions. These are indicated as “Unknown” in the chart below*.



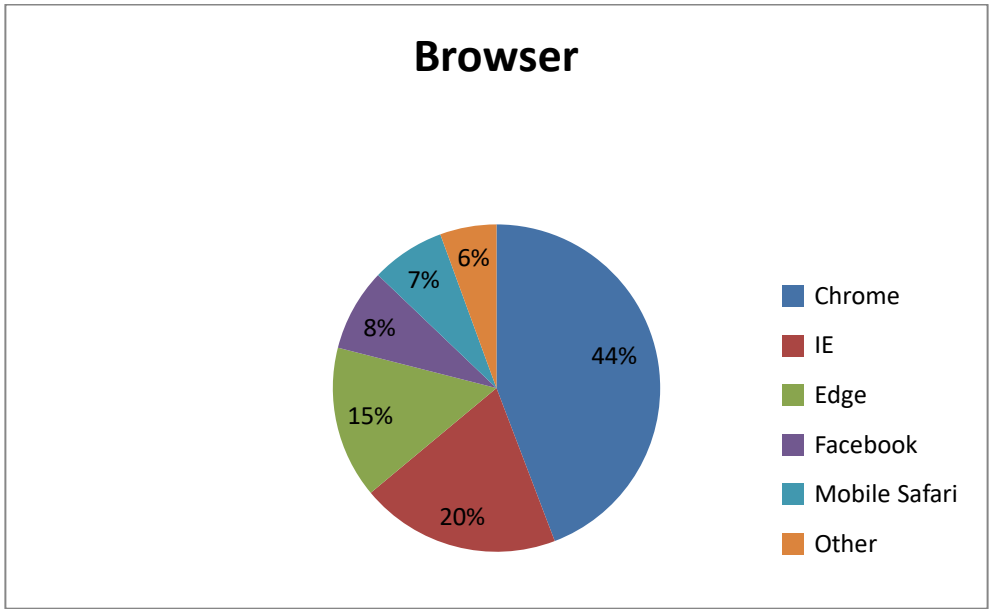
*Note: The above browser location statistics do not always necessarily represent the location of the device accessing the website and may just represent the location of the user’s internet service provider server. As such, these figures should be regarded with caution.

Device, Browser and Platform Information

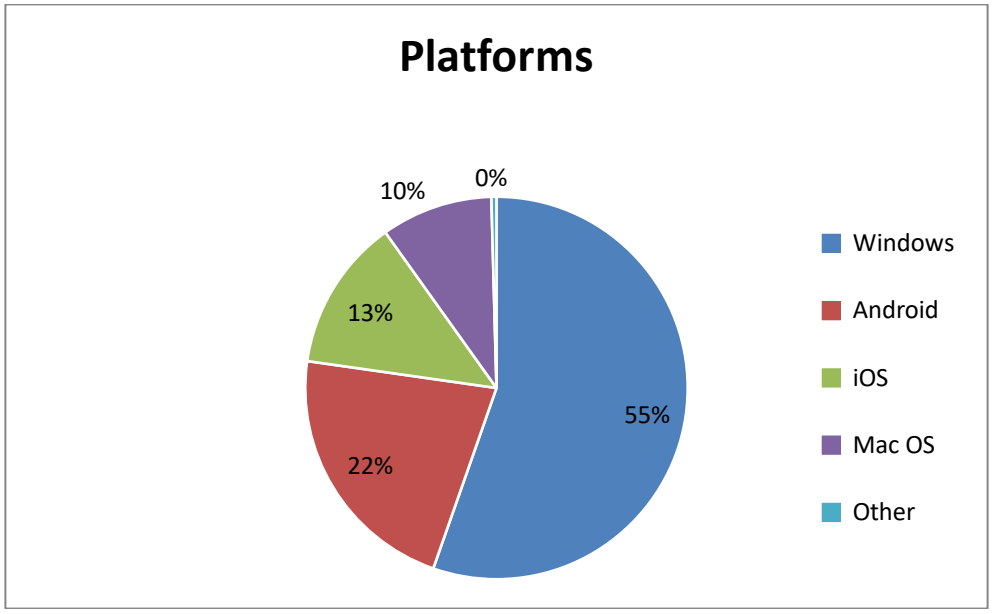
65% of visitors accessed the room from a laptop or desktop computer while 28% were accessing from a mobile device and 7% from a tablet.

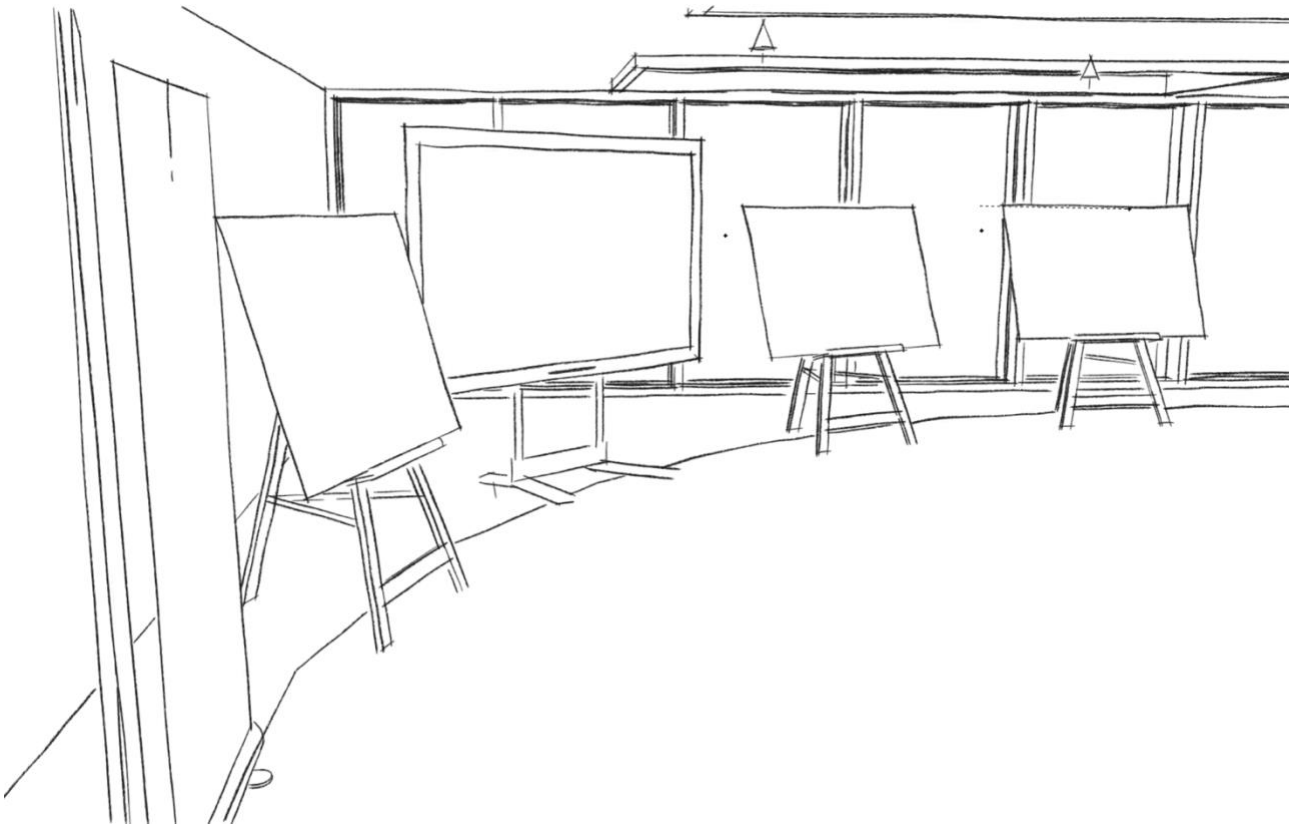


The most popular browser used to visit the site was Chrome. This accounted for 44%. IE accounted for 20% while Edge was used by 15% of visitors. These were followed by Facebook and Mobile Safari with 8% and 7% respectively. The remaining 6% were using other browsers.



Windows was the most popular platform used with 55% of traffic using it. This was followed by Android with 22% and iOS with 13%. MAC OS was used by 10% while one visitor used a browser not mentioned above.





Virtual Public Exhibition
Web Traffic Report

Littleton Wind Farm

May 2021

Executive Summary

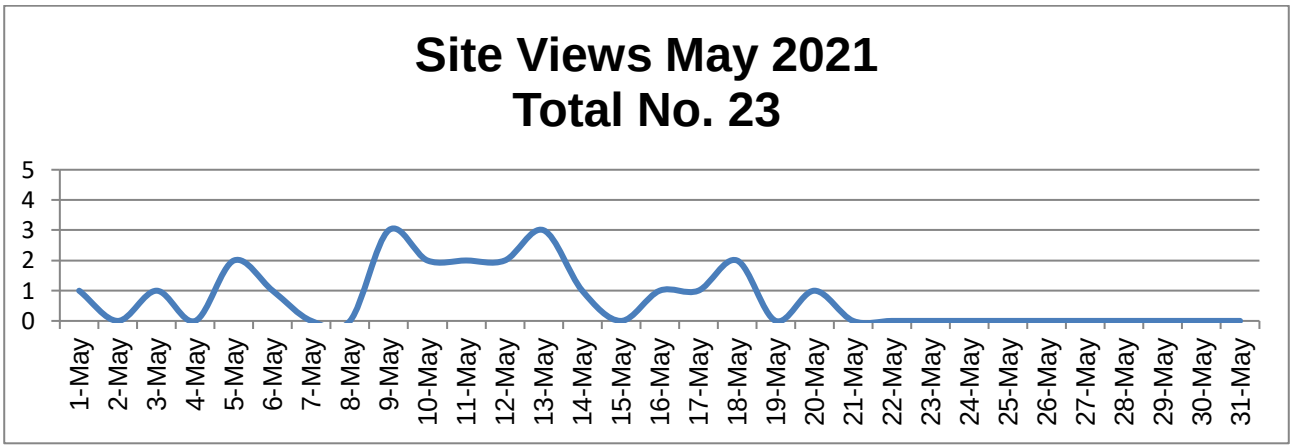
- The total number of visits to the site during this period was 23. The exhibition ceased to be available online on May 25th so there was no activity after this date.
- The most popular parts of the site were the “Replay Welcome Video” followed by the “Proposed Littleton Wind Farm Project” banner.
- 7 visitors (30%) spent more than 5 minutes in the room.
- 91% of visitors were from Ireland with 24% of those in the Dublin area.
- A desktop/laptop computer was the most common device used to access the site.
- The most common platform in use was Windows.
- The browser used most frequently to access the site was Chrome.

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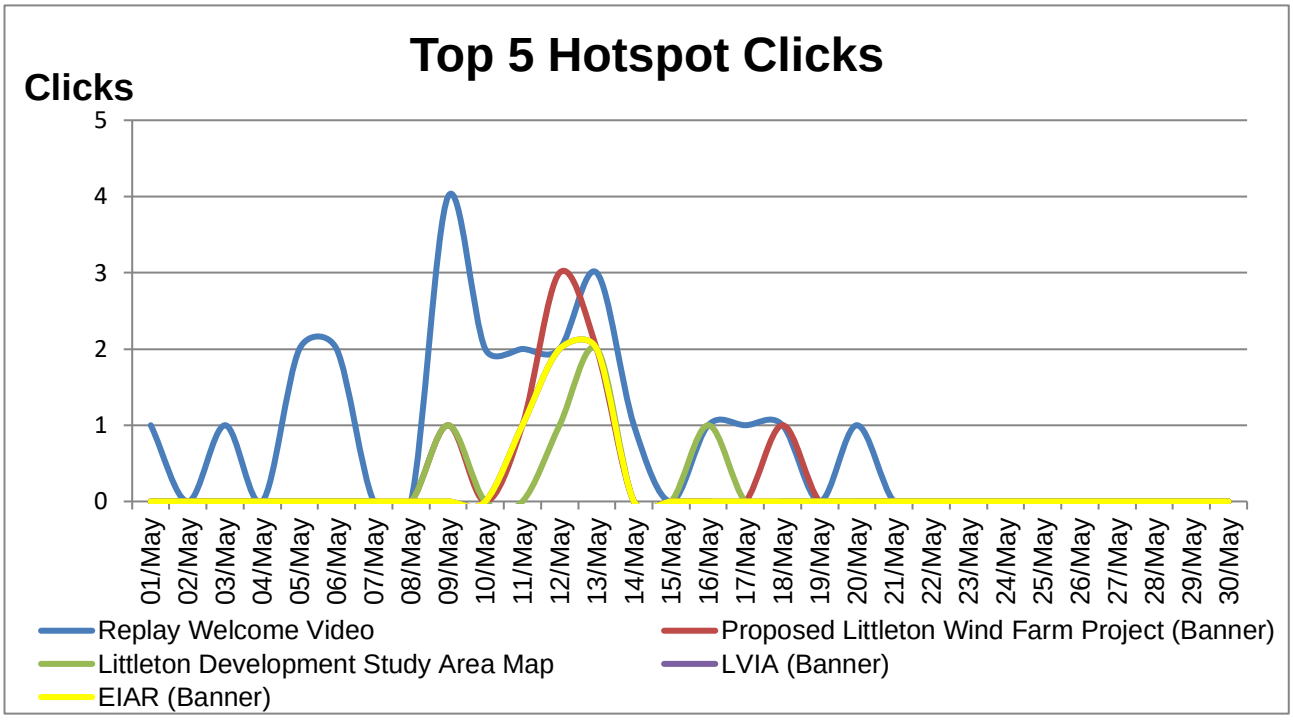
Site Visits

There were 23 visits to the room during the month of May. Most activity was during the period between the May 9th and May 13th. There were smaller spikes in activity around May 5th and May 18th. The graph below depicts the site views during the month.

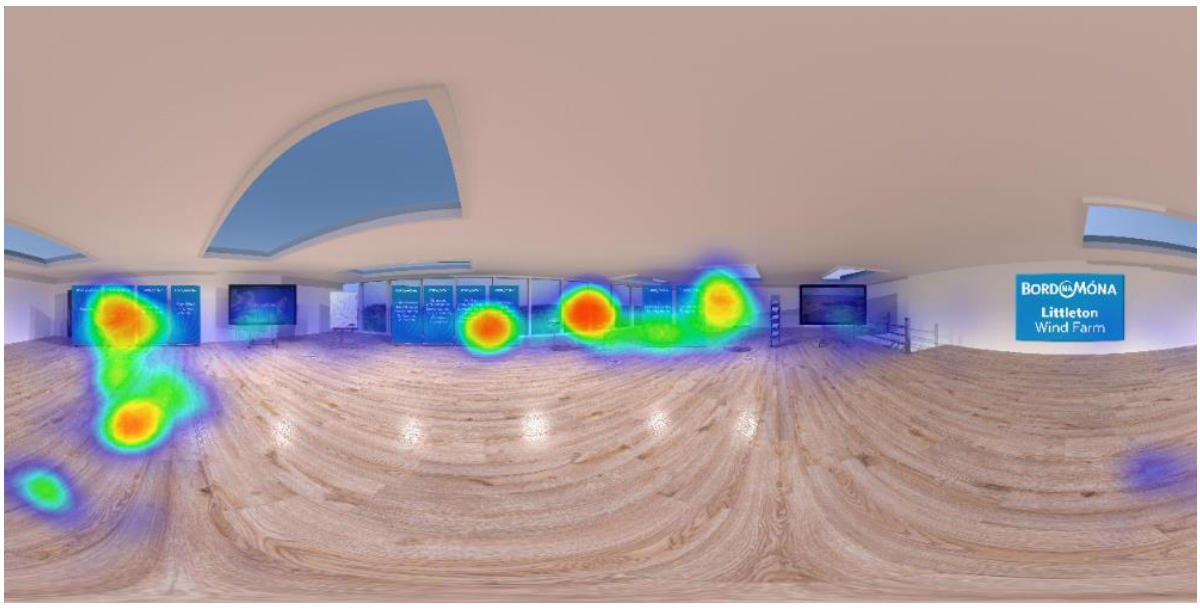


Top 5 Hotspot Clicks

The “Replay Welcome Video” was the most clicked on in the room with 24 clicks. This is followed by the “Proposed Littleton Wind Farm Project” banner with 8 clicks. The “Littleton Development Study Area Map”, the “LVIA” banner and the “EIAR” banner each attracted 5 clicks. All other figures are available in the table on page 5.



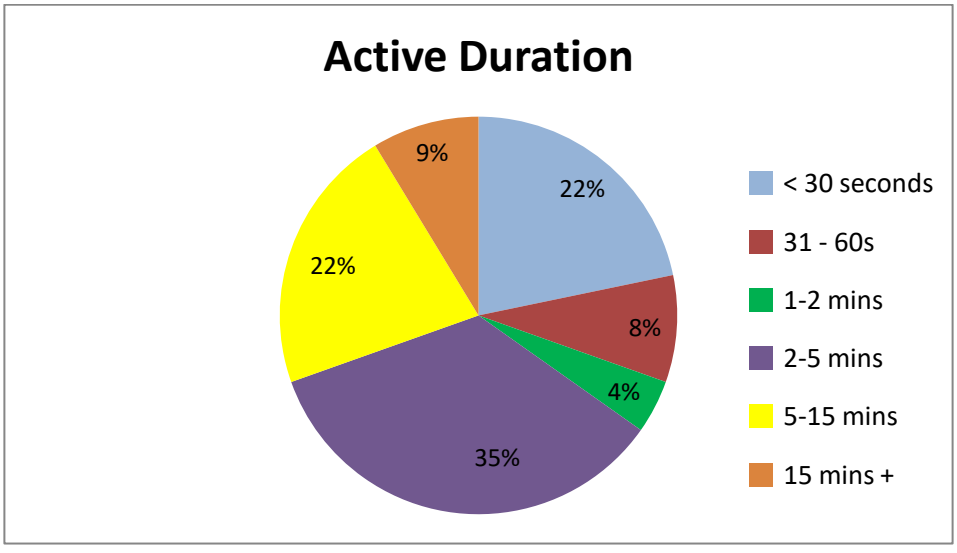
The heat map below indicates the areas of the room people have been looking at. The left-hand side, which is where visitors enter the room, shows the greatest popularity. There is some activity in the centre of the room before it peters out towards the end of the exhibition.



Hotspot	No. Clicks
Replay Welcome Video	24
Proposed Littleton Wind Farm Project (Banner)	8
Littleton Development Study Area Map	5
LVIA (Banner)	5
EIAR (Banner)	5
Need For Wind Energy (Banner)	4
Benefits of the Development (Banner)	4
Community Engagement (Link)	4
Welcome (Banner)	4
Exit / Project Feedback Questionnaire	3
Community Engagement Clinics (Link)	3
How Wind Turbines Operate (Banner)	3
Bord na Móna Our Future is Clear (Video)	3
Want to contact us?	2
Project Information Booklet	2
Want to join our mailing list?	2
Have a minute to complete our project feedback questionnaire?	2
Draft Revised Wind Energy Development Guidelines in Ireland (Banner)	2
SID Process (Banner)	2
FAQs	1
Total	**88**

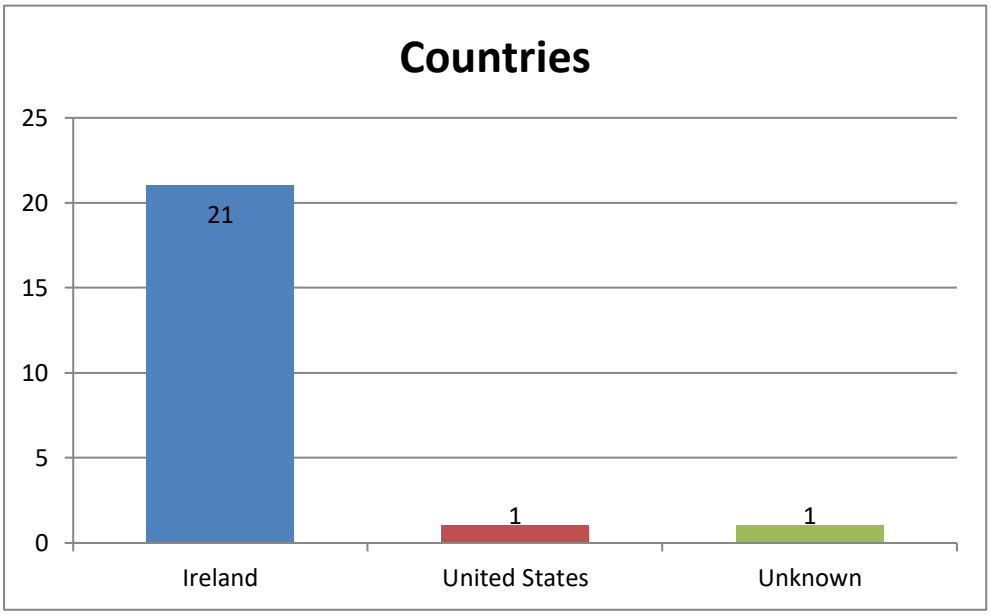
Duration of Site Visits

7 visitors (30%) spent longer than 5 minutes in the room while 7 visitors (30%) also spent less than one minute in the room.

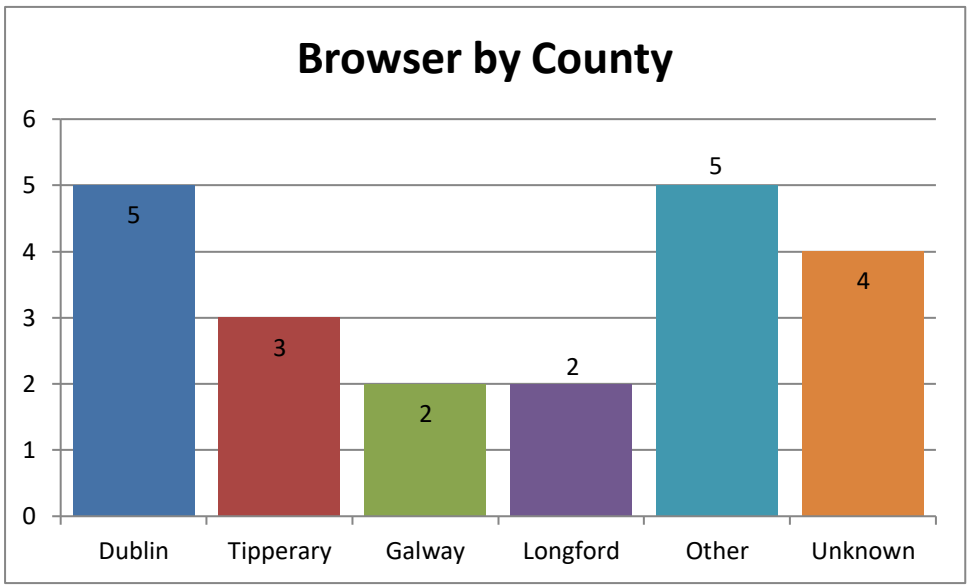


Geographical Breakdown of Site Visitors

91% of traffic in the period was from Ireland with 1 visitor from the United States while there was also 1 visitor from an unknown country.



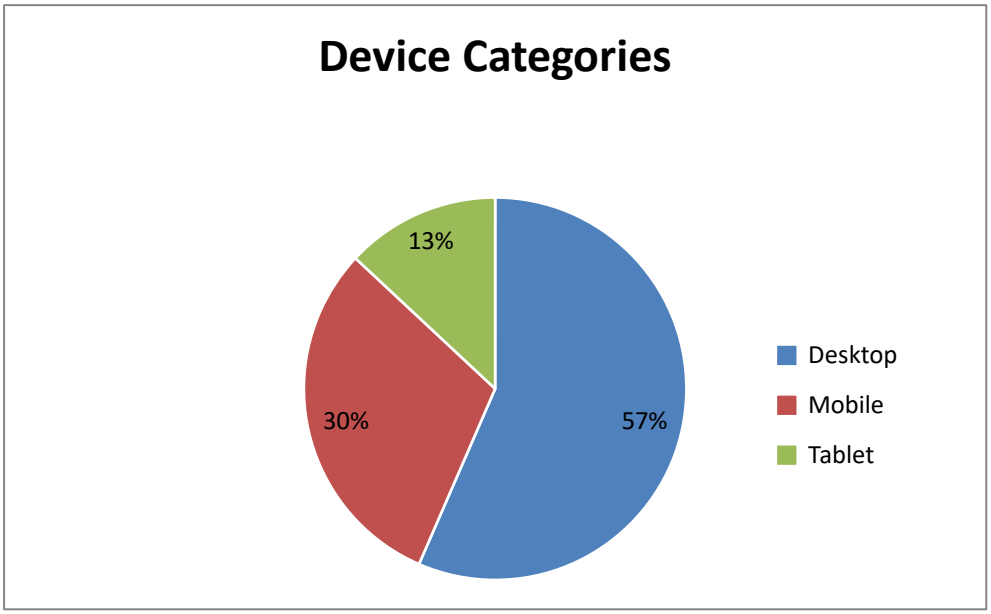
Dublin visitors (5) to the site represented approximately 24% of Irish visitors. There were 3 visitors from Tipperary, 2 from Galway and 2 from Longford. A further 5 visitors were from other counties in Ireland. 4 visitors (19%) were from other locations in Ireland, but it was not possible to determine where due to user defined browser restrictions. These are indicated as “Unknown” in the chart below*.



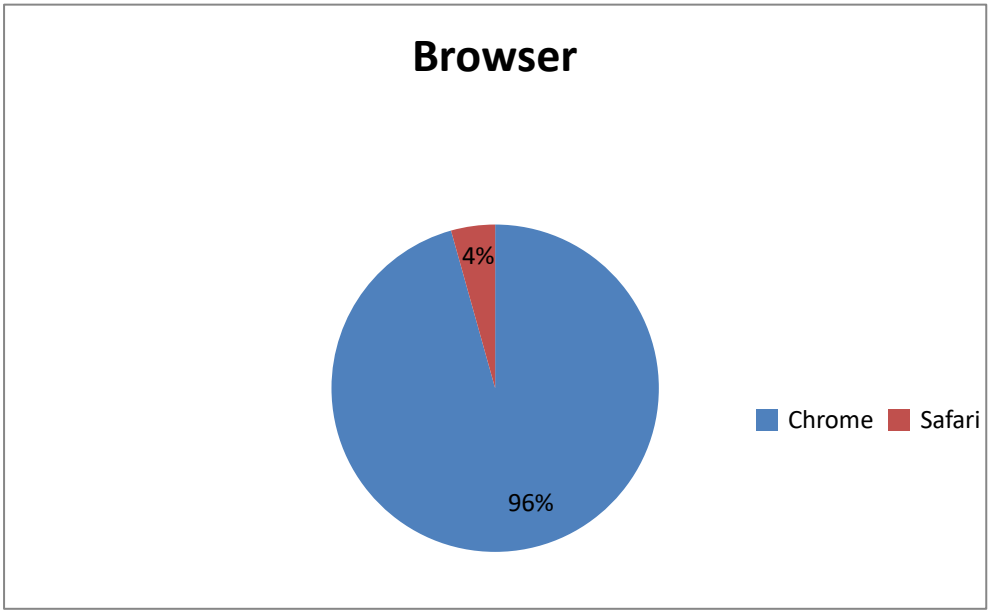
*Note: The above browser location statistics do not always necessarily represent the location of the device accessing the website and may just represent the location of the user’s internet service provider server. As such, these figures should be regarded with caution.

Device, Browser and Platform Information

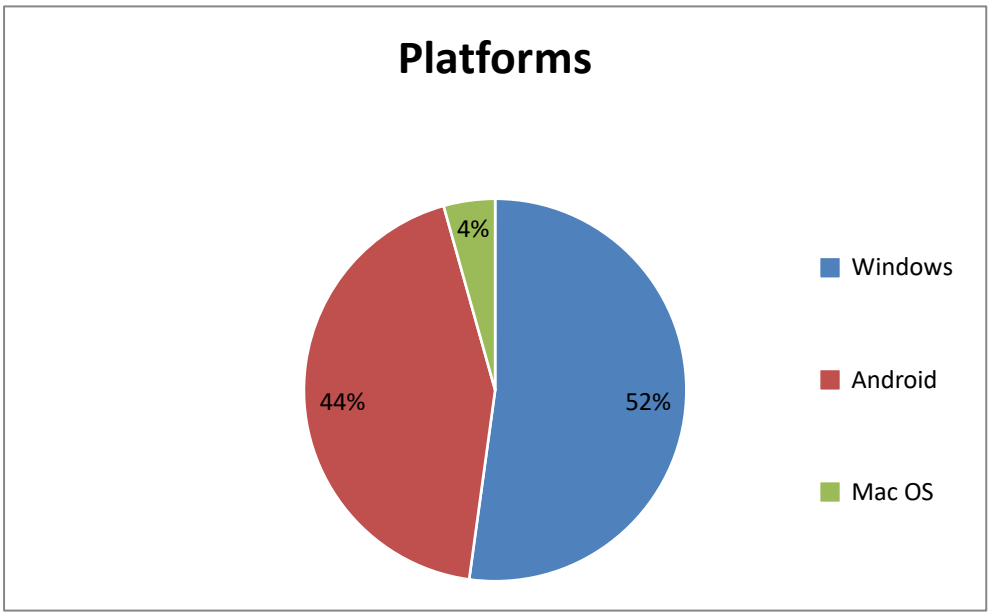
57% of visitors accessed the room from a laptop or desktop computer while 30% were accessing from a mobile device and 13% from a tablet.



The most popular browser used to visit the site was Chrome. This accounted for 96%. Safari was used by 1 visitor. No other browsers were used.



Windows was the most popular platform used with 52% of traffic using it. This was followed by Android with 44% and MAC OS with 4%.



Appendix 8

Community Engagement Sessions Information Panels November/December 2021

Draft Revised Wind Energy Development Guidelines in Ireland

In 2019, Revised Wind Energy Development Draft Guidelines were issued for public consultation. Key aspects of these Draft Guidelines included:

1. **Noise Limits**
   Noise restriction limits consistent with World Health Organisation standards are proposed. The noise limits will apply to outdoor locations at any residential or noise sensitive properties.

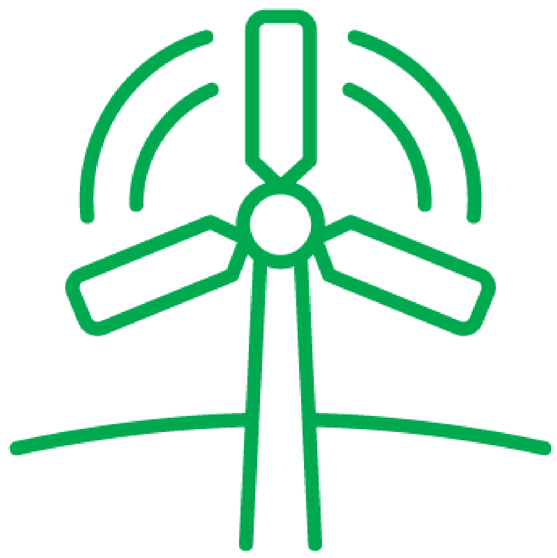
2. **Visual Amenity Setback**
   A visual amenity setback distance, of 4 times the tip height, between a wind turbine and the nearest residential property is proposed, subject to a mandatory minimum setback of 500 metres.

3. **Shadow Flicker**
   It is proposed that technology and appropriate modelling at design stage is adopted to eradicate the occurrence of shadow flicker and must be confirmed in all planning applications for wind energy development.

4. **Consultation Obligations**
   Planning applications must contain a 'Community Report' prepared by the applicant which will specify how the final proposal reflects community consultation and the steps taken to ensure that the proposed development will be of enduring economic benefit to the communities concerned and demonstrate adherence to community engagement codes of practice.

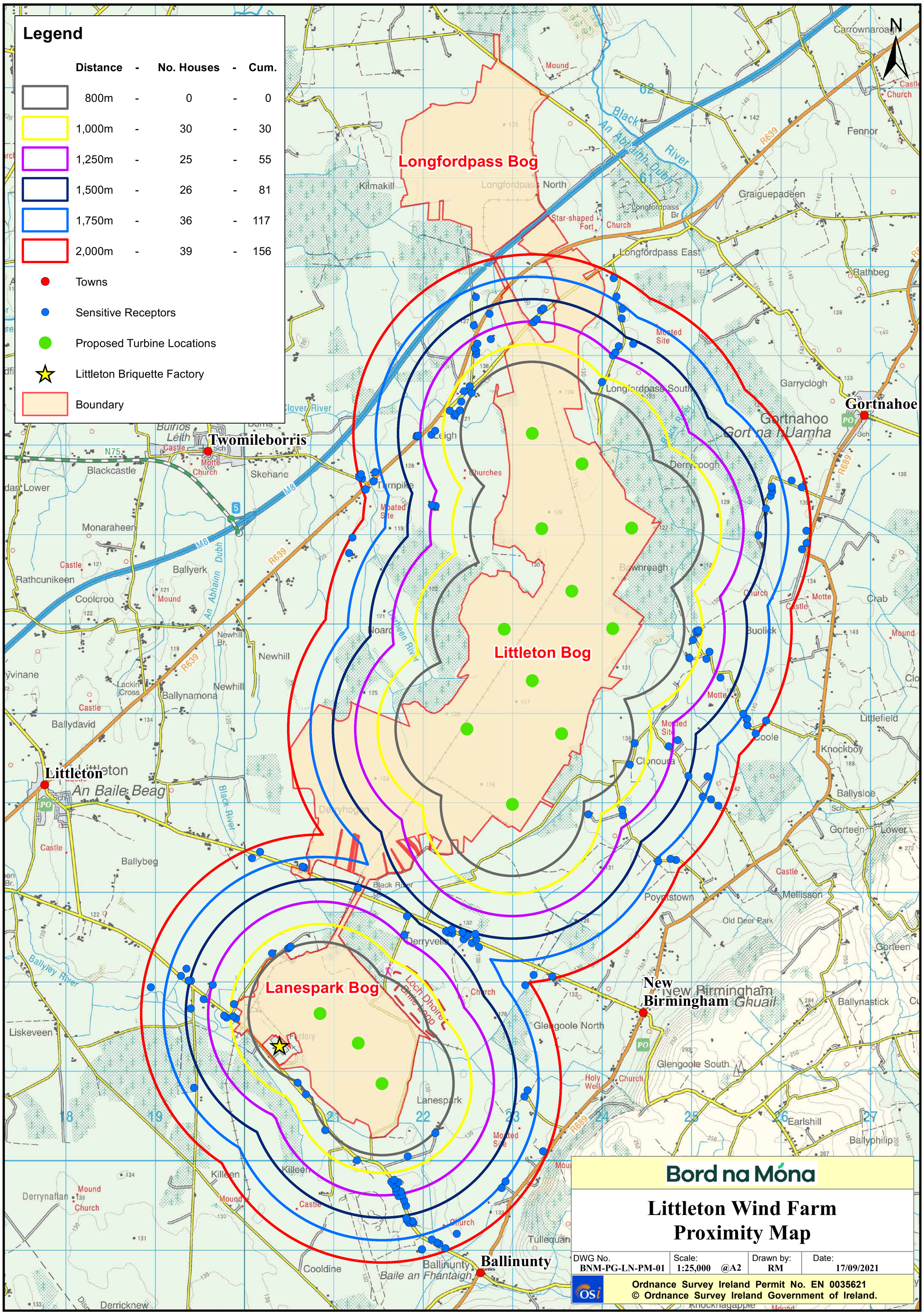
5. **Grid Connection**
   From a visual amenity aspect, undergrounding of cable connections from wind farms to the transmission and distribution system is the most appropriate solution, except where specific ground conditions or technical considerations make this impractical.

6. **Community Dividend**
   Wind farm developers will also be required to take steps to ensure that the proposed development will be of enduring economic benefit to the communities concerned.



Bord na Móna

Littleton Wind Farm Draft Wind Turbine Layout Map



Bord na Móna

Littleton Wind Farm Proximity Map

DWG No.	Scale:	Drawn by:	Date:
BNM-PG-LN-PM-01	1:25,000 @A2	RM	17/09/2021

Ordnance Survey Ireland Permit No. EN 0035621
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The Proposed Wind Farm

Number of Turbines - 14

The draft layout comprises of 14 wind turbines. Apart from the turbines themselves, the other principal components of the wind farm are the foundations to support the turbine towers, access, crane hard standings, underground cables between the turbines, an electricity substation and an electrical connection to the appropriate node on the National Grid.

Height of Turbines - 200m

The proposed turbines will have an overall blade tip height of up to 200 metres. Within this size envelope, various configurations of hub height and rotor diameter may be used. The exact make and model of the turbine will be dictated by a competitive tender process, post planning and it will not exceed the maximum tip height of 200 metres.

Setback Distance - 800m

The turbine layout has been designed with a minimum setback distance of 800m to the nearest house from a turbine. This complies with the Draft Wind Energy Development Guidelines (2019), which proposes a setback distance of 4 times the tip height.

Table 1 depicts the number of houses within a range of setback distance bands from the proposed turbine layout .

Distance	No. of Houses	Cumulative
800m	0	0
1,000m	30	30
1,250m	25	55
1,500m	26	81
1,750m	36	117
2,000m	39	156

Table 1. Setback Distance to Houses

Wind Farm Output: 60–80MW

Early studies of the site have indicated that it may be capable of accommodating approximately 60–80 Megawatts (MW) of installed generating capacity. When operational, the proposed Littleton Wind Farm will generate a volume of electricity equivalent to the average annual electrical demand of circa 45,000 Irish homes*.

Planning Timeline

It is intended to submit a planning application in Autumn 2022 for the proposed development. It is envisaged that the planning permission application will be submitted directly to An Bord Pleanála, under the provisions of the Planning and Development (Strategic Infrastructure) Act 2006.

2nd Public Consultation: Autumn/Winter 2021

Final Layout Publication: Spring 2022

Submission of Planning Application: Autumn 2022

**based on Annual Capacity Factor across Ireland in 2019 of 29.3% and average household electricity consumption of 4,200kwH*

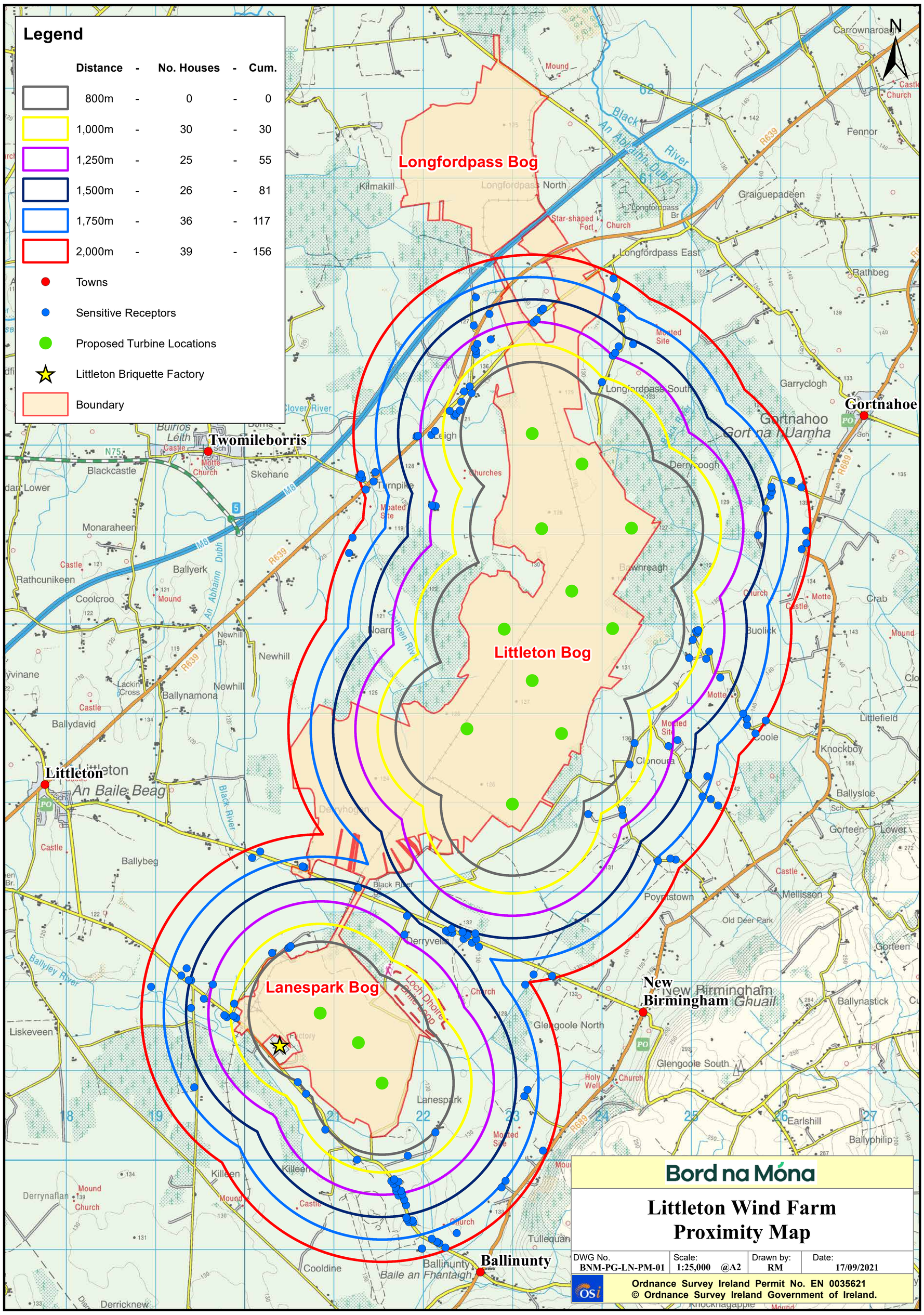
Bord na Móna

Proposed Littleton Wind Farm

The location for the proposed wind farm is shown below. It is adjacent to the communities of Gortnahoe, Littleton, New Birmingham, Twomileborris and Urlingford.

The proposed development will be located on the Bord na Móna Littleton Bog group in Co. Tipperary which is circa 1,020 hectares. A draft layout, consisting of 14 turbines has been developed for the proposed wind farm.

It is envisaged the proposed development footprint would occupy approximately 5% of the total site area for turbine bases, crane hard-standings and access tracks, meaning much of the land area will not be required by the development. This provides opportunity for the remainder of the site to be utilised for other purposes, such as biodiversity and amenity.



Strategic Infrastructure Development Planning Process Explained

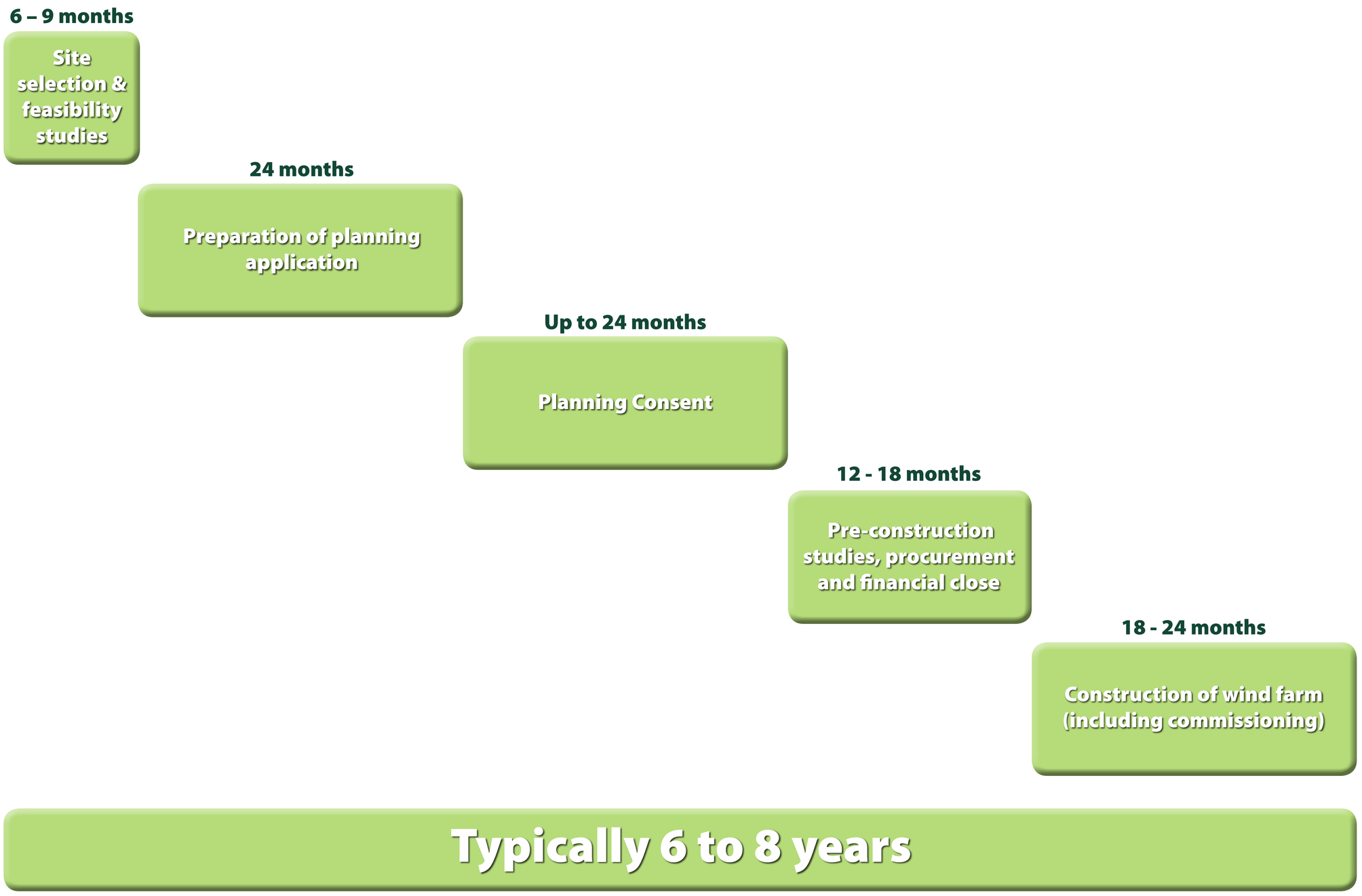
For most large-scale projects, a key consideration is whether a development is Strategic Infrastructure Development (SID) or not? Energy infrastructure which is considered SID* includes:

“An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 megawatts” *(as outlined in the Seventh Schedule, Section 1 of the Planning and Development (Strategic Infrastructure) Act 2006).

SID Projects	Non-SID Projects
Planning Application to An Bord Pleanála	Planning Application to Local County Council
Environmental Impact Assessment Mandatory	Environmental Impact Assessment Mandatory in some cases

Bord na Móna will need to go through a pre-planning consultation process with An Bord Pleanála to determine with certainty who the consenting authority will be. Irrespective of the Consenting Authority it is our view that an Environmental Impact Assessment Report will be required as supporting documentation to the planning application. To learn more about the SID process please visit: www.pleanala.ie/sid

How long does it take to develop a wind farm?



Benefits of the Development

The proposed development will give rise to a range of benefits at different levels. At a Local Level, benefits arising from the construction and operation of the proposed wind farm will include:

- Employment
- The provision of a Community Benefit Fund
- Amenity and Recreational Facilities of the wind farm (as required).
- Payment of taxes from the project, and dividends from Bord na Móna to the state
- Substantial rates paid to the relevant Local Authority from Bord na Móna to the State.
- Upgrading of the road infrastructure in the vicinity of the wind farm (as required)

Employment

A large wind farm development of this scale would typically support 80–100 jobs at peak construction. There will also be indirect employment created through the sub-supply of a wide range of products and services including: gravel and graded stone for roads and hard stands, concrete and steel for turbine bases, building materials for sub stations, haulage of components from the ports to the site, accommodation, legal and financial services. Once complete the project will also support a number of long term, high quality technical jobs in operations and maintenance.

Community Benefit Fund

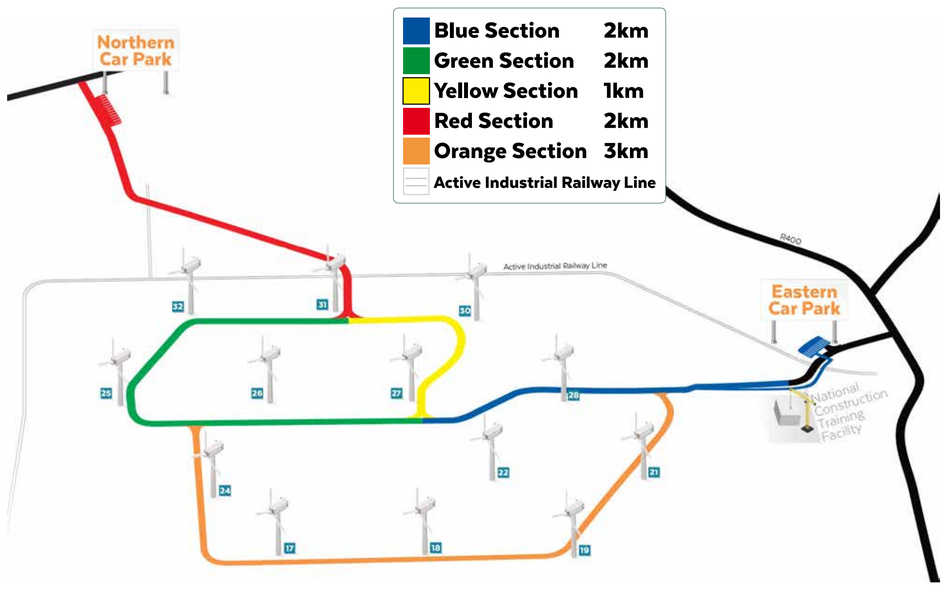
Similar to our existing wind farms, it is envisaged that an annual Community Benefit Fund will be set up for the proposed Littleton Wind Farm once the project is operational. As the project is at an early stage of its development, the exact nature and structure of a proposed Community Benefit Fund is not known at this time, albeit we would envisage it being similar in type to our existing Community Benefit Funds which include:

- A Community Gain Scheme – providing funding to local community and not-for-profit organisations
- A Near Neighbour Fund – providing an annual electricity contribution and once off support to carry out energy efficiency measures and/or education support to residents within a prescribed distance of a turbine.

Potential Wind Farm Recreational Facilities

Public Walkway – Cycleway

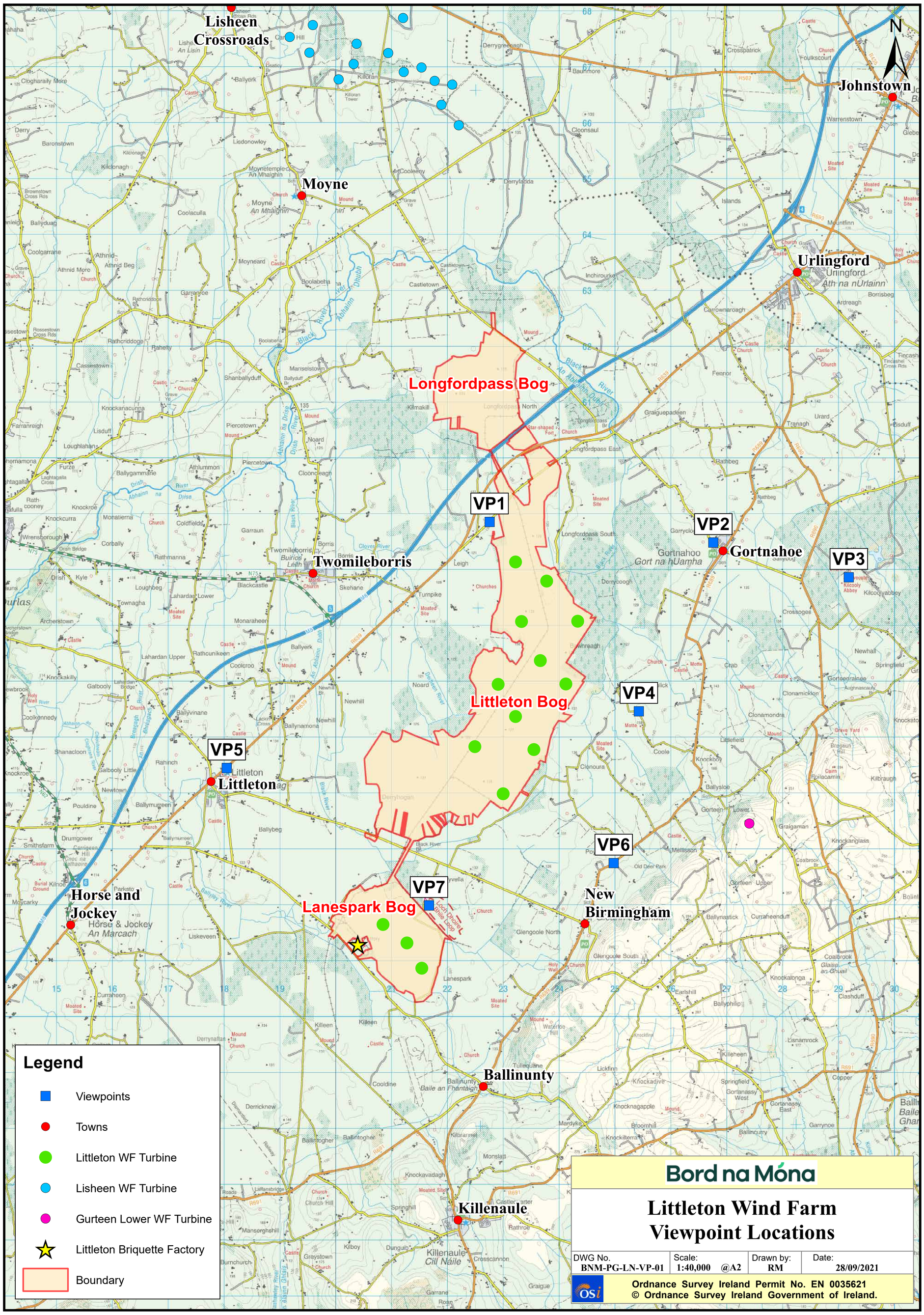
Mountlucas Wind Farm consists of a 10 km walkway / cycleway around the wind farm. It is generally accessible all year round – free of charge with onsite parking facilities at both the Northern and Eastern access points. This amenity is for walking, running and cycling and it is hoped to incorporate similar amenities as part of the proposed Garryhinch Wind Farm. Since 2016, over 230,000 visits have been made to the wind farm's amenity facilities.



Mountlucas Wind Farm, Co. Offaly

What is a Photomontage?

A typical tool utilised in the assessment of the visual impact of a wind farm is a Photomontage. Photomontages are visualisations that superimpose an image of a proposed development upon a photograph or series of photographs and are used to illustrate the potential impact of a development on the existing landscape. A number of photomontages will accompany the planning application as part of the Landscape and Visual Impact Assessment (LVIA) for the proposed wind farm.



Viewpoint 1, 2 & 3



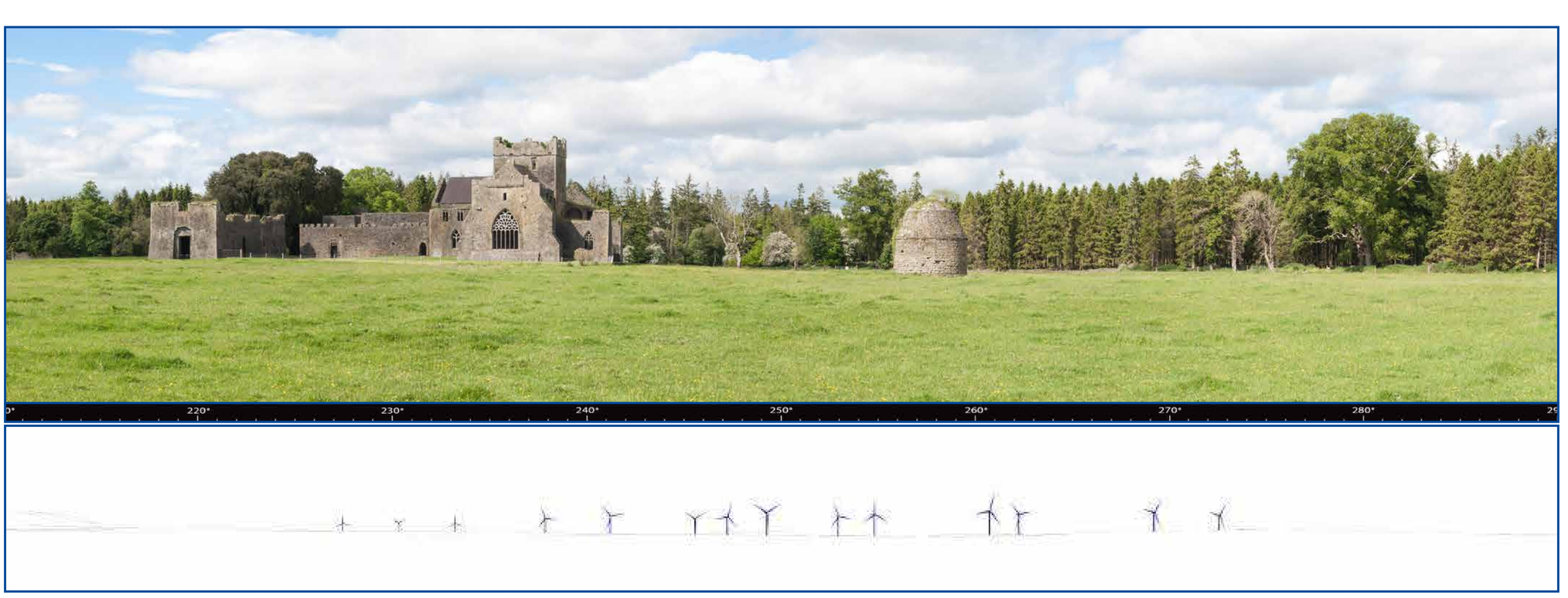
Viewpoint 1: View from Local Road in the townland of Leigh approximately 1km west of the proposed development.

VP1 on Viewpoint Locations Map.



Viewpoint 2: View from the Good Shepard Cemetery at Gortnahoe, approximately 2.5km northeast of the proposed development.

VP2 on Viewpoint Locations Map.



Viewpoint 3: View from Kilcooley Abbey, approximately 4.5km northeast of the proposed development.

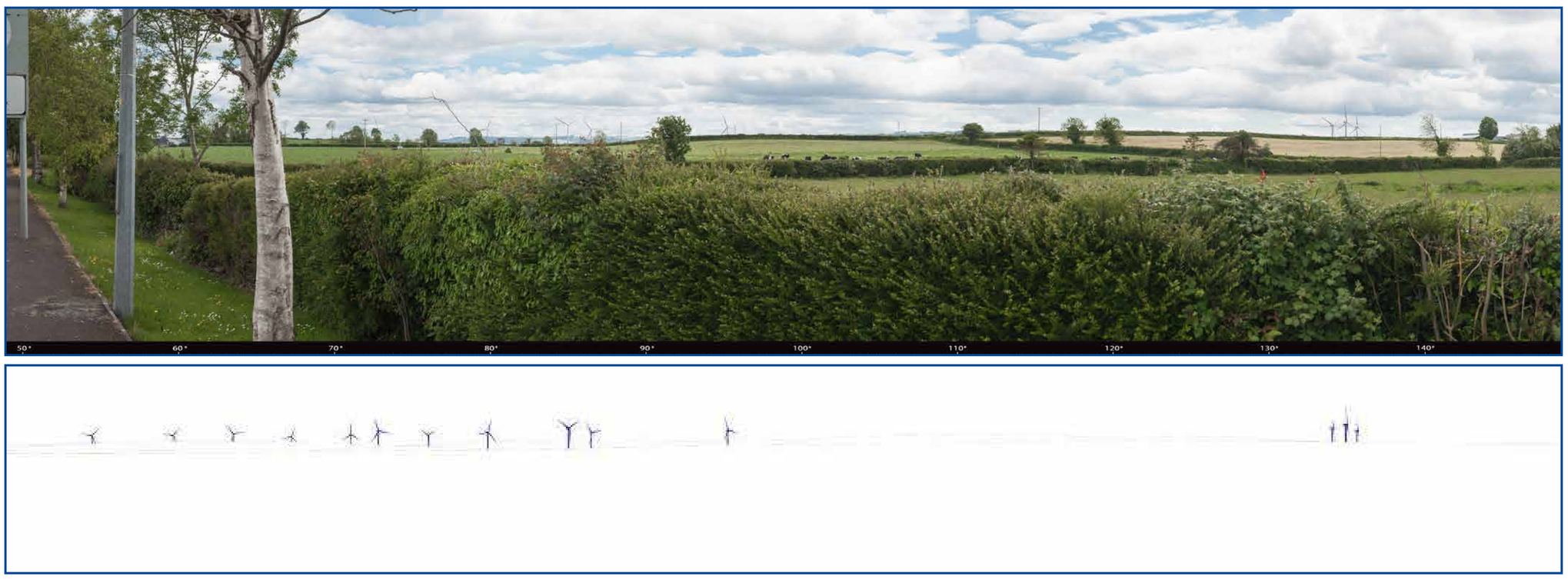
VP3 on Viewpoint Locations Map.

Viewpoint 4, 5 & 6



Viewpoint 4: View from the Local Road in the townland of Bawnreagh, approximately 1.1km east of the proposed development.

VP4 on Viewpoint Locations Map.



Viewpoint 5: View from the Regional Road (R639), north of Littleton, in the townland of Ballydavid and approximately 2.5km west of the proposed development.

VP5 on Viewpoint Locations Map.



Viewpoint 6: View from the Regional Road (R689) in the townland of Poynstown, approximately 2.1km east of the proposed development.

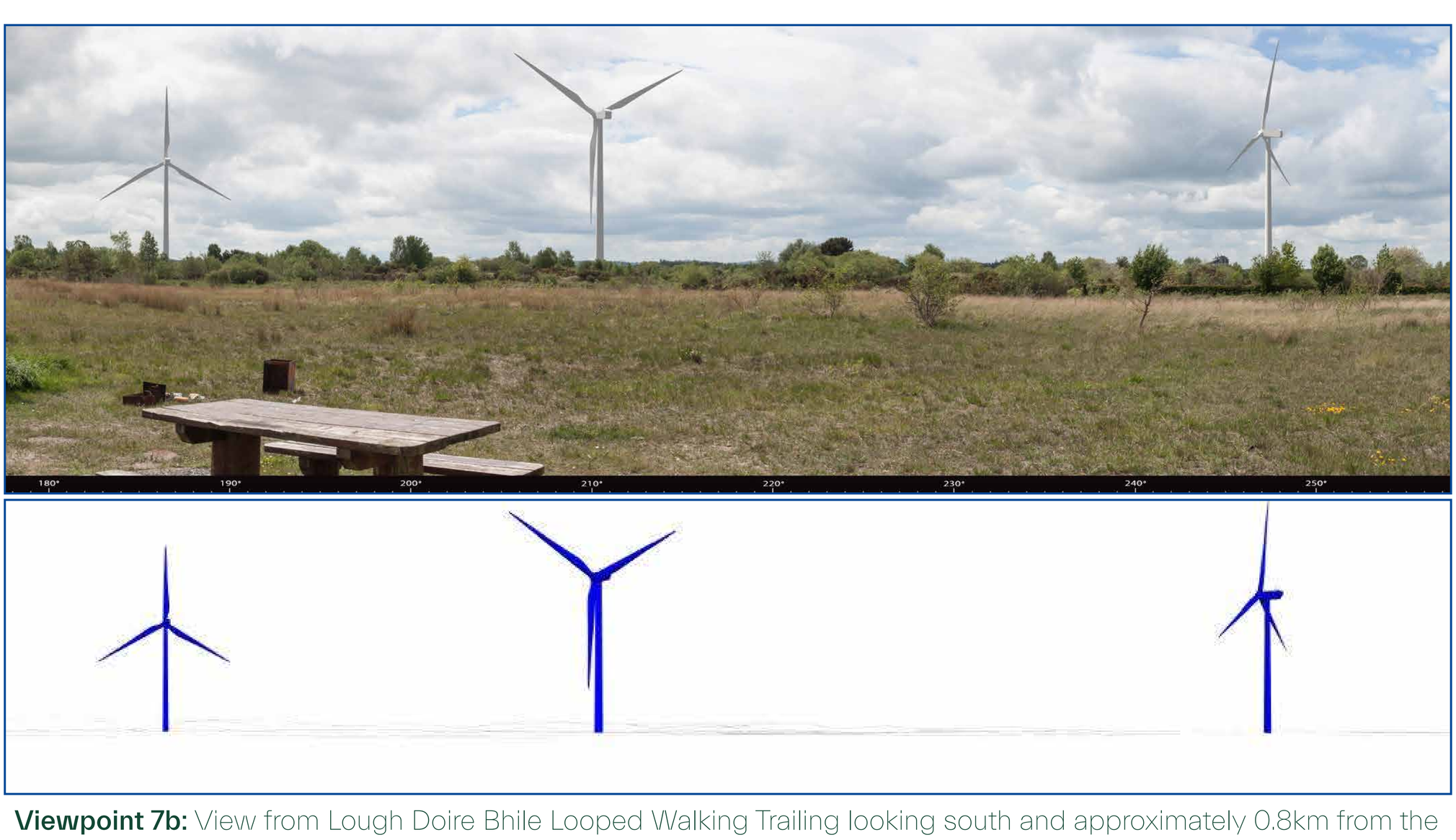
VP6 on Viewpoint Locations Map.

Viewpoint 7a & 7b



Viewpoint 7a: View from Lough Doire Bhile Looped Walking Trailing looking north and approximately 2.4km from the proposed development.

VP7 on Viewpoint Locations Map.



Viewpoint 7b: View from Lough Doire Bhile Looped Walking Trailing looking south and approximately 0.8km from the proposed development.

VP7 on Viewpoint Locations Map.

Legend	
Littleton WF Turbines	

Bord na Móna

Appendix 9

Print Media Advertisement Autumn/Winter 2021

Littleton Wind Farm Community Engagement Sessions

Bord na Móna

Bord na Móna intend to hold a series of Community Engagement Sessions regarding its draft layout for the proposed Littleton Wind Farm.

In order for members of the public to be informed about the proposed development, Bord na Móna has arranged a series of Community Engagement Sessions as follows:

Date	Time	Venue
Tuesday 30th November	5–9 pm	Moycarkey-Borris Community Centre
Wednesday 1st December	5–9 pm	Glengoole Community Hall
Thursday 2nd December	5–9 pm	Gortnahoe Community Centre

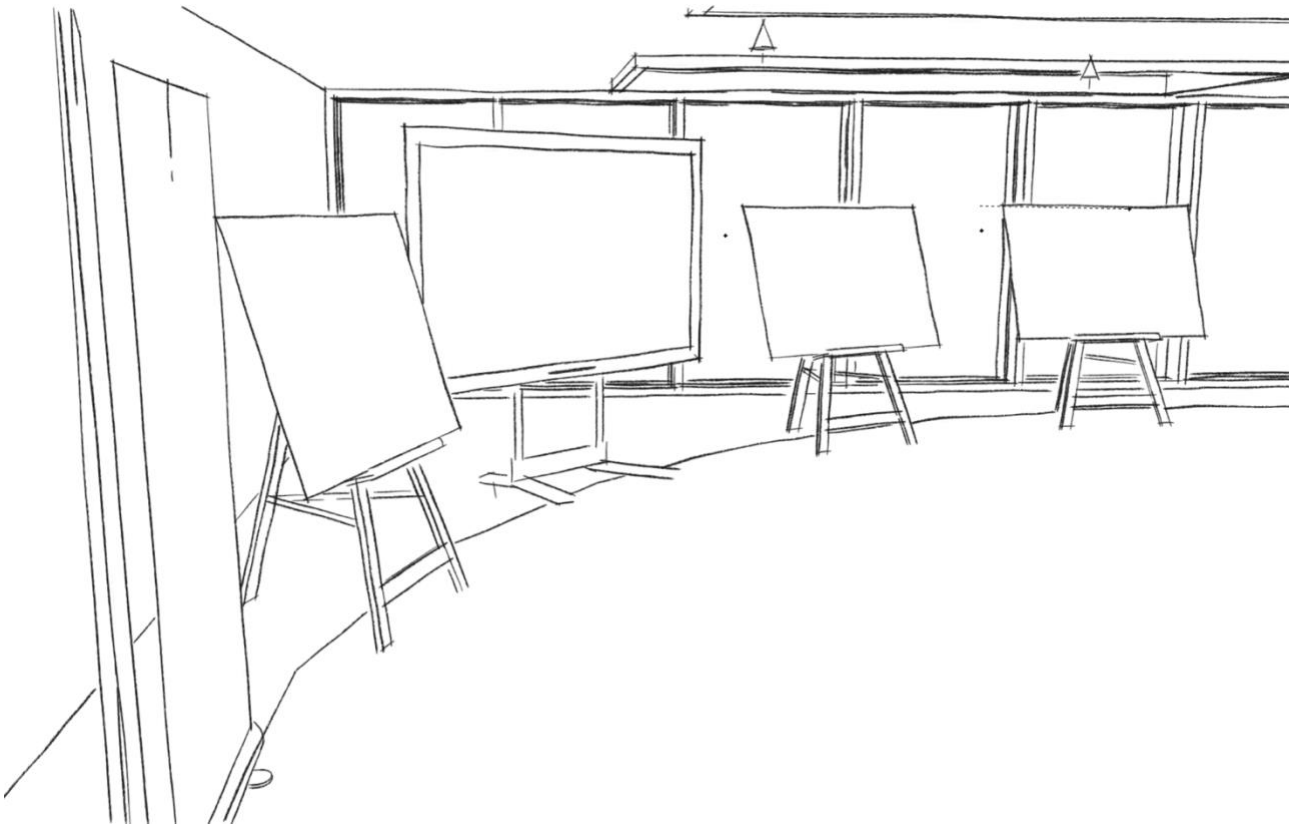
Bord na Móna invites you to attend one of these Community Engagement Sessions during the scheduled opening hours. For more information on the proposed development and to view a copy of all consultation material please visit **www.littletonwindfarm.ie** or contact the Project's **Community Liaison Officer Colm** on 087–4143305.

Please Note: *These Sessions will be held in line with the most up to date Covid-19 Government Health Guidelines and as such will require proof of vaccination & ID before entry.*



Appendix 10

Virtual Consultation Room Report Winter 2021



Virtual Public Exhibition
Web Traffic Report

Littleton Wind Farm

October 2021

Executive Summary

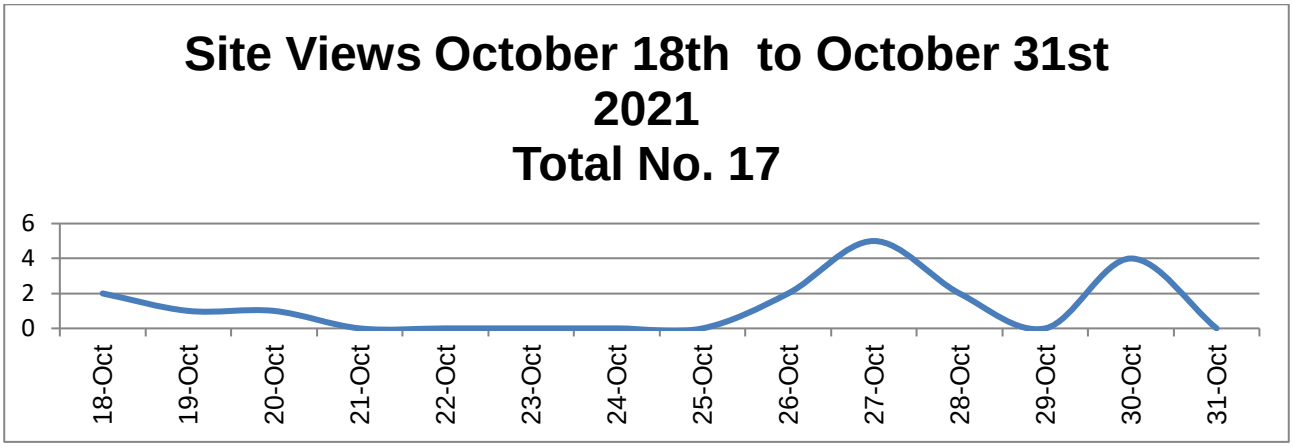
- The total number of visits to the site during this period was 17.
- The most popular parts of the site were the “Welcome Video” followed by the “Photomontage Viewer”.
- 2 visitors (12%) spent more than 5 minutes in the room.
- 88% of visitors were from Ireland with 73% of those in the Dublin area.
- A mobile device was the most common device used to access the site.
- The most common platform in use was Android.
- The browser used most frequently to access the site was Chrome.

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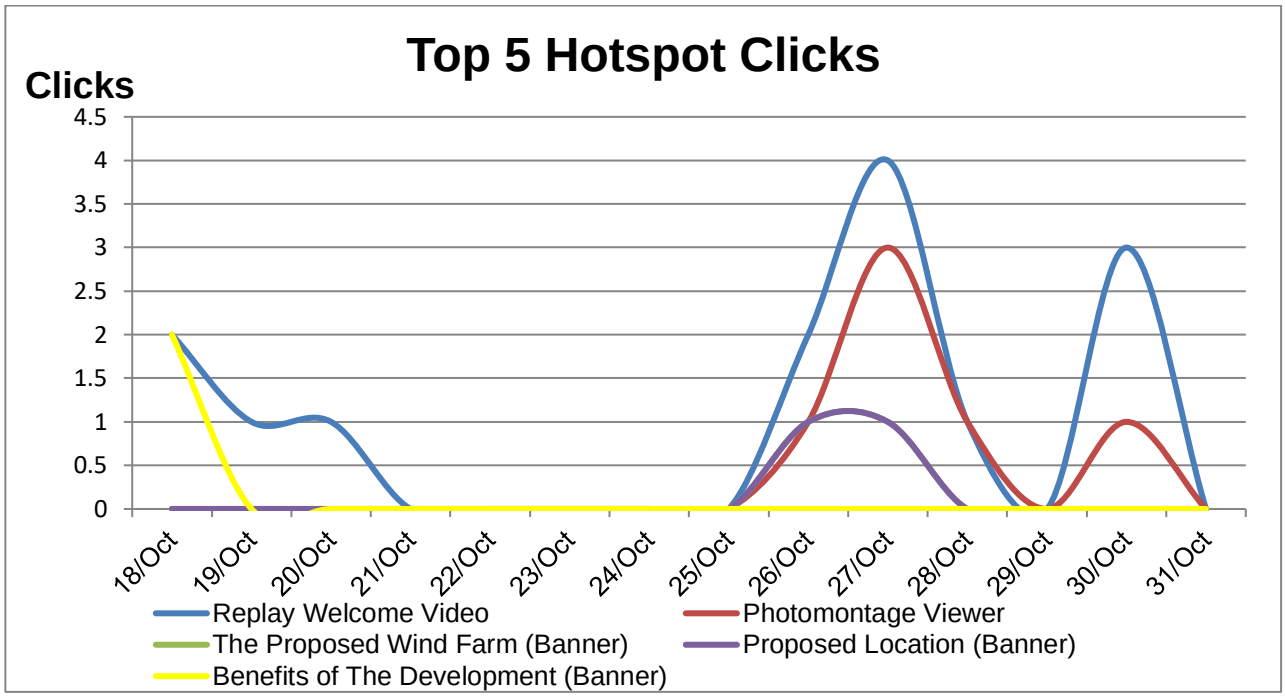
Site Visits

There were 17 visits to the room during the period from October 18th to 31st. Most activity was toward the end of the month. There were spikes in activity around October 27th and October 30th. The graph below depicts the site views during the period.

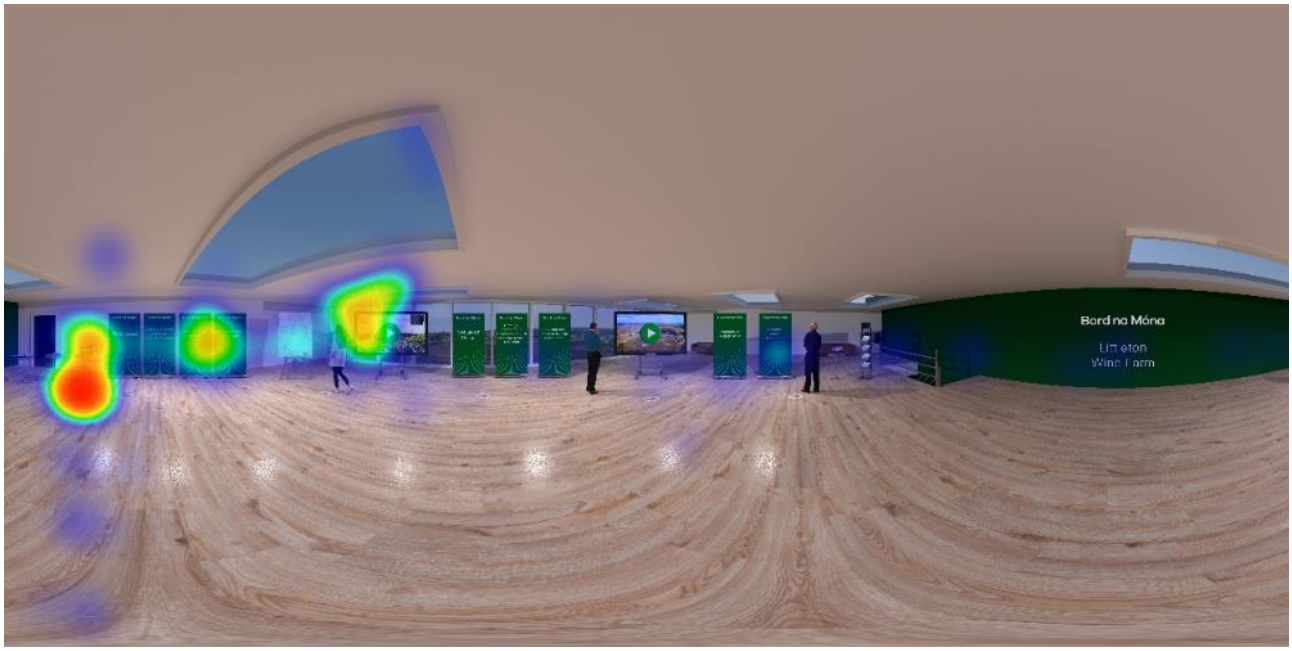


Top 5 Hotspot Clicks

The “Welcome Video” was the most clicked on in the room with 14 clicks. This was followed by the “Photomontage Viewer” with 6 clicks. The “Proposed Wind Farm”, “Proposed Location” and “Benefits of the Development” banners each attracted 2 clicks. All other figures are available in the table on page 5.



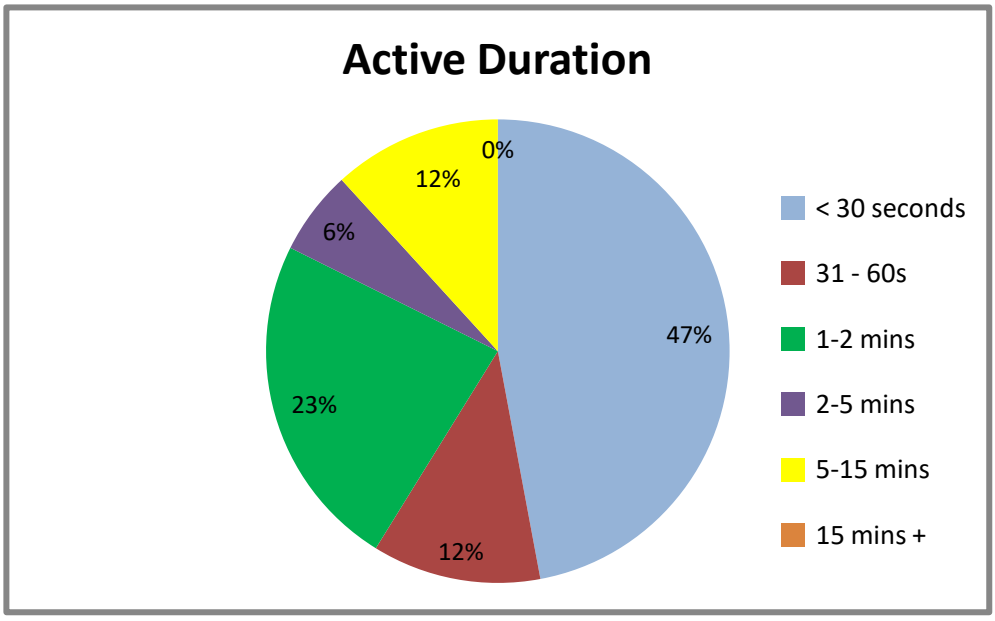
The heat map below indicates the areas of the room people have been looking at. The left-hand side, which is where visitors enter the room, shows the greatest popularity. There is some activity to the right of this and very little towards the end of the exhibition.



Hotspot	No. Clicks
Welcome Video	14
Photomontage Viewer	6
The Proposed Wind Farm (Banner)	2
Proposed Location (Banner)	2
Benefits of The Development (Banner)	2
Government Policy (Banner)	1
Community Engagement Sessions (Table)	1
FAQs	1
Total	**29**

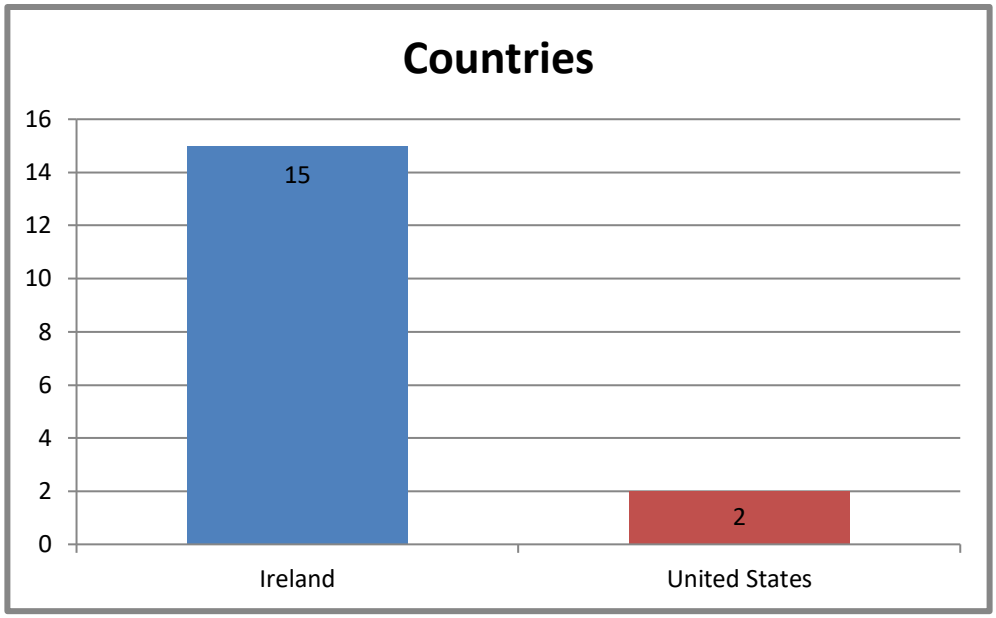
Duration of Site Visits

2 visitors (12%) spent longer than 5 minutes in the room while 10 visitors (59%) spent less than one minute in the room.

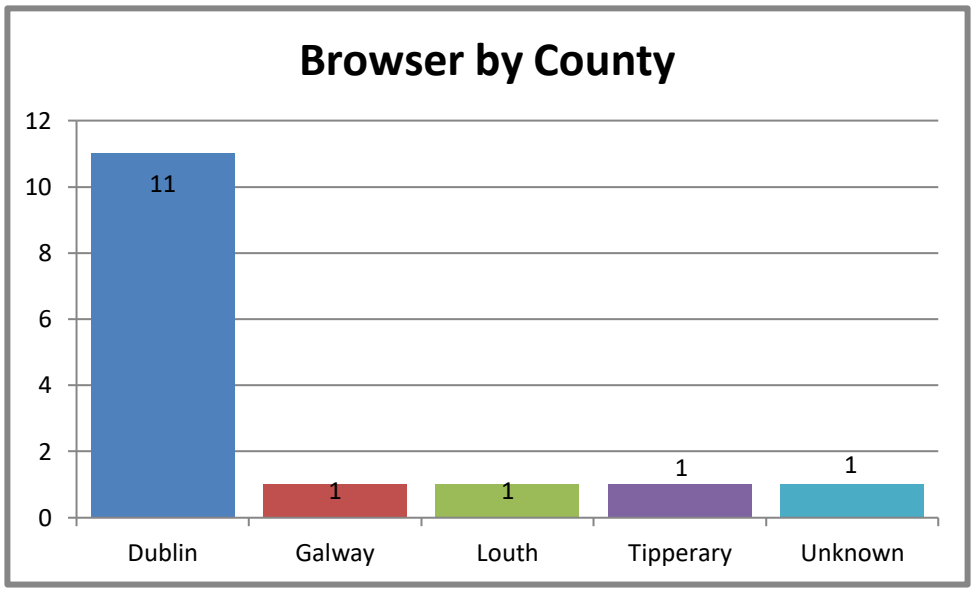


Geographical Breakdown of Site Visitors

88% of traffic in the period was from Ireland. The remaining 12% was accounted for by 2 visitors from the United States.



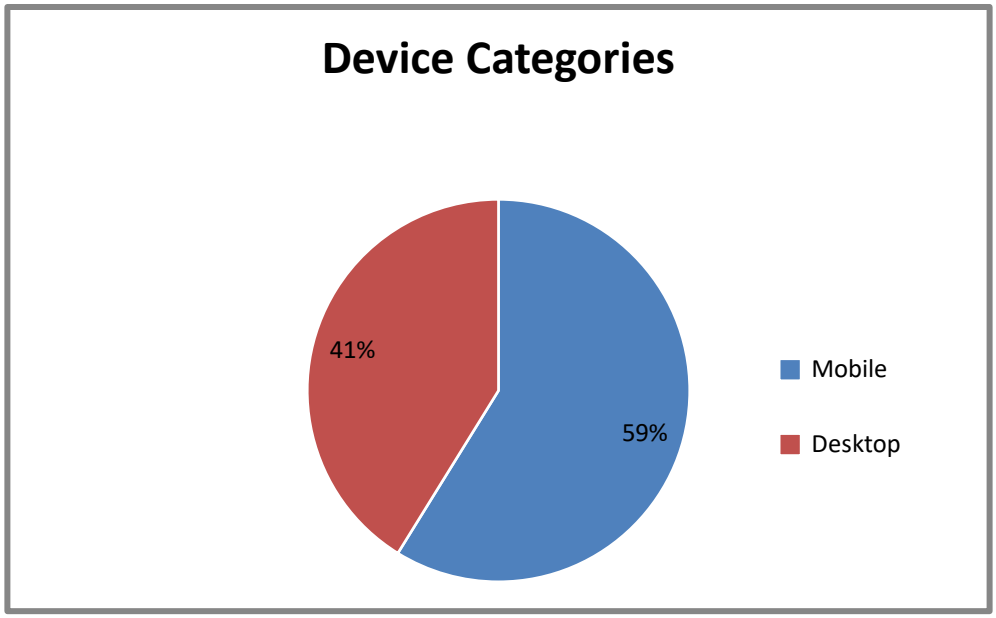
Dublin visitors (11) to the site represented approximately 73% of Irish visitors. There was 1 visitor from each of counties Galway, Louth and Tipperary. A further visitor was from Ireland, but it was not possible to determine the exact location, due to user defined browser restrictions. This is indicated as “Unknown” in the chart below*.



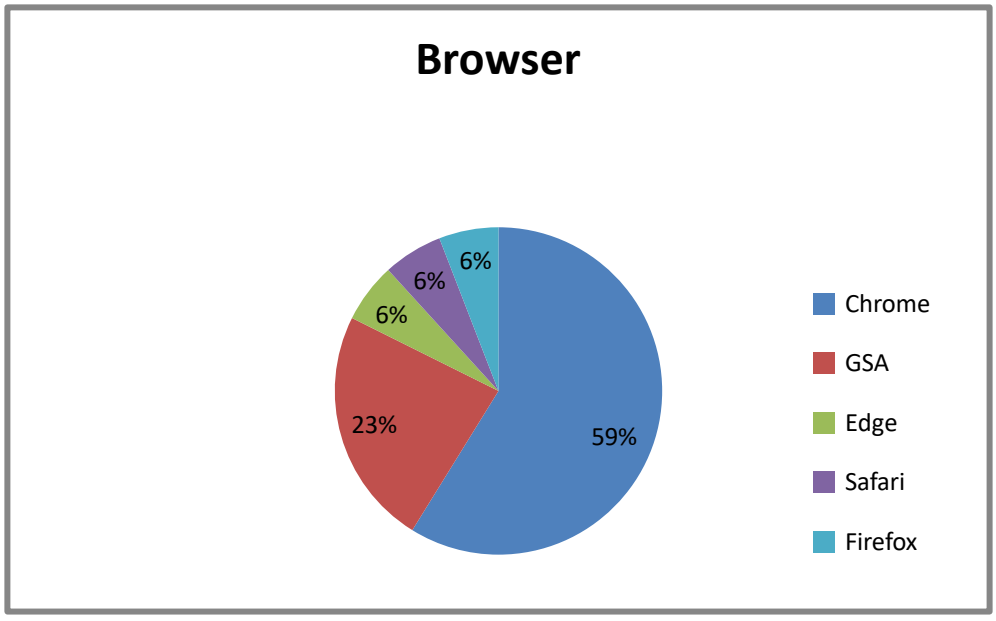
*Note: The above browser location statistics do not always necessarily represent the location of the device accessing the website and may just represent the location of the user’s internet service provider server. As such, these figures should be regarded with caution.

Device, Browser and Platform Information

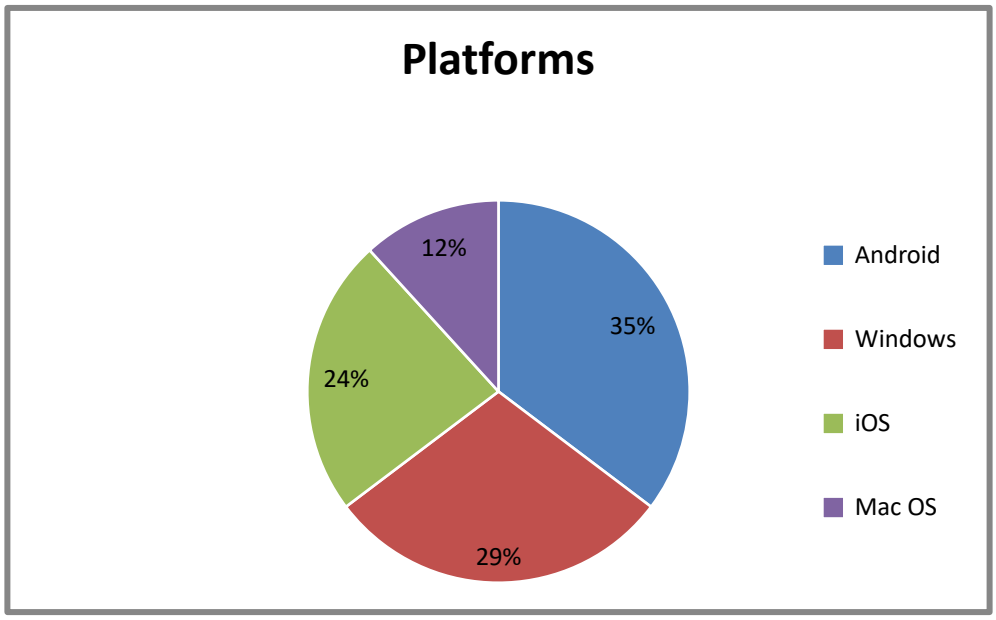
59% of visitors accessed the room from a mobile device, while 41% accessed using a laptop or desktop computer. No visitors were using a tablet.

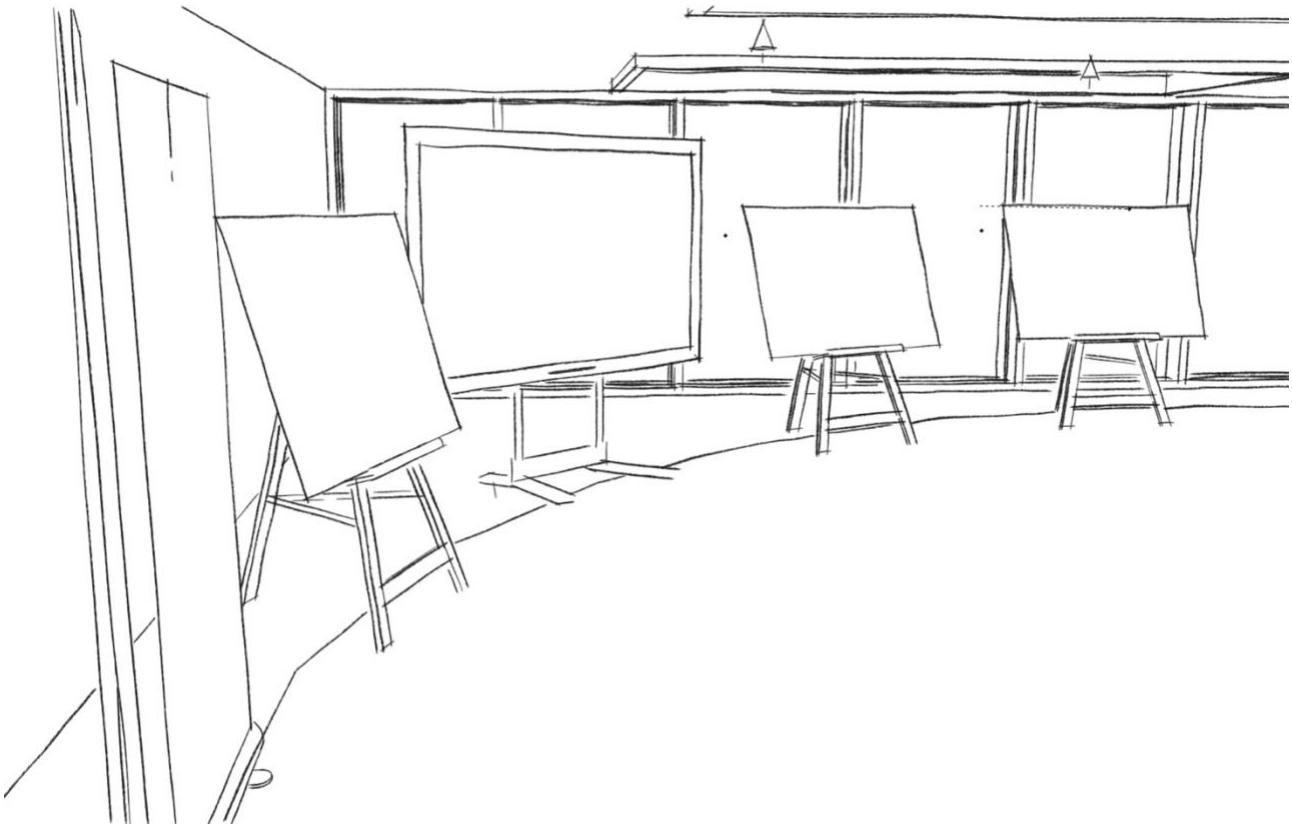


Chrome was the most popular browser used to access the site with 59% of visitors using it. GSA was the next most popular with 23% while Edge, Safari and Firefox accounted for 6% each. No other browsers were used.



Android was the most popular platform used with 35% of traffic using it. This was followed by Windows with 29%, iOS with 24% and Mac OS with 12%.





Virtual Public Exhibition
Web Traffic Report

Littleton Wind Farm

November 2021

Executive Summary

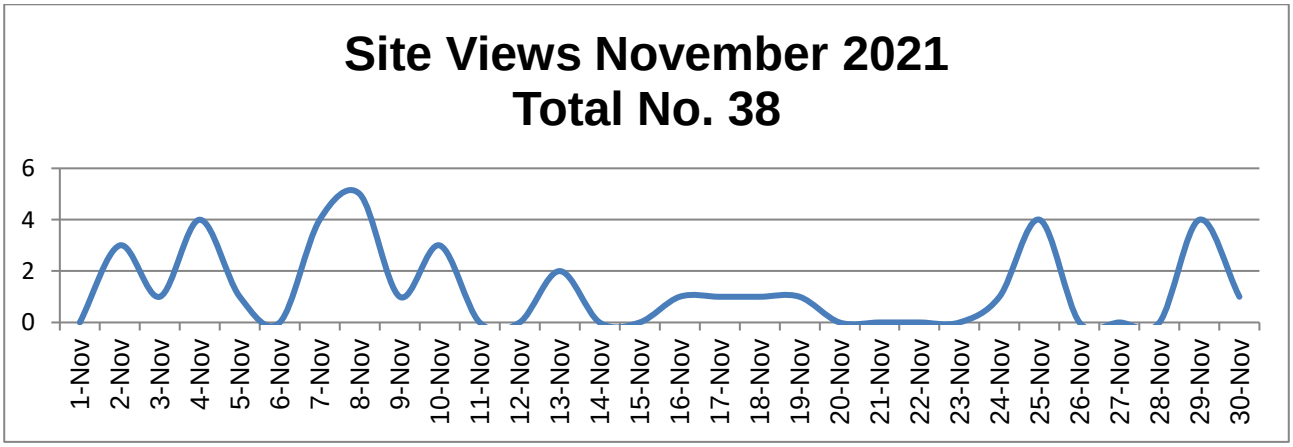
- The total number of visits to the site during this period was 38.
- The most popular parts of the site were the “Welcome Video” followed by the “Photomontage Viewer.
- 4 visitors (11%) spent more than 5 minutes in the room.
- 87% of visitors were from Ireland with 33% of those in the Dublin area.
- A mobile device was the most common device used to access the site.
- The most common platform in use was Android.
- The browser used most frequently to access the site was Chrome.

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	Page
• Site Visits	3
• Top 5 Hotspot Clicks	4
• Duration of Site Visits	5
• Geographical Breakdown of Site Visitors	6
• Device, Browser and Platform Information	7

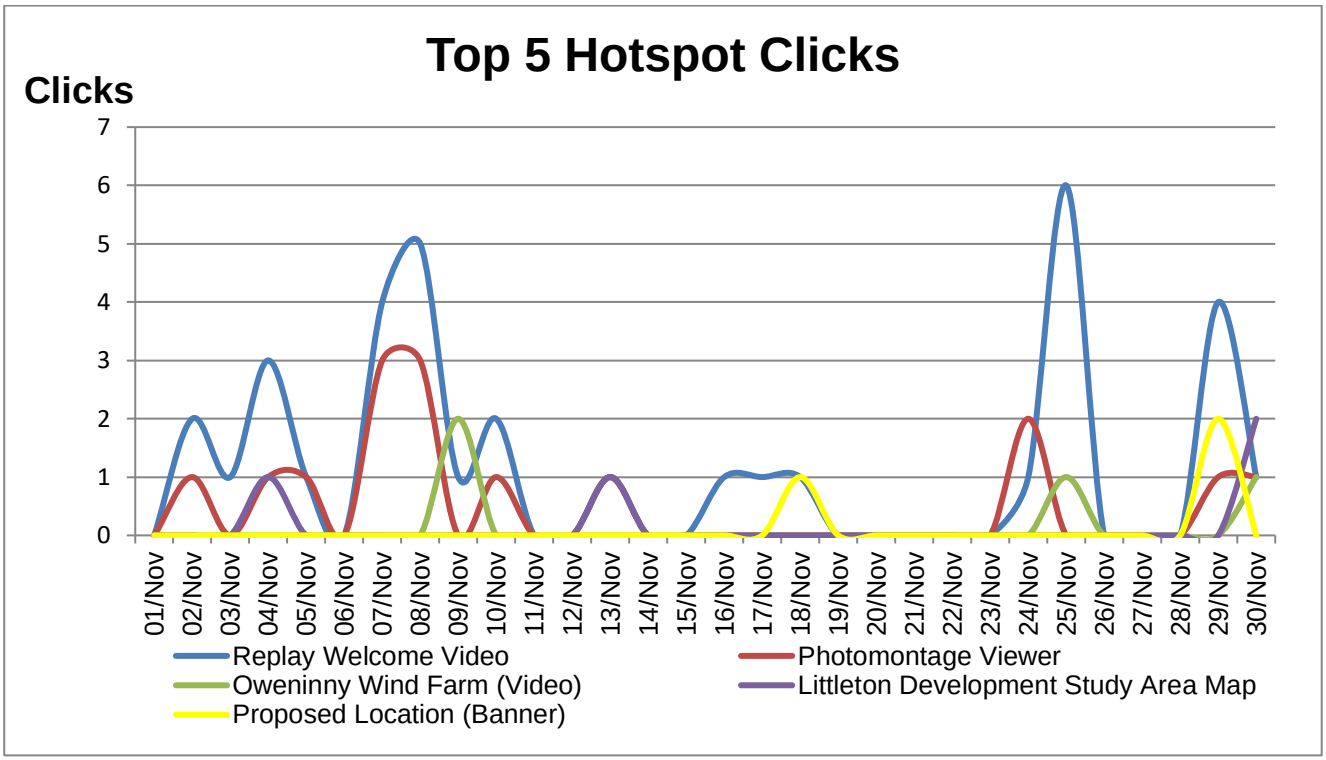
Site Visits

There were 38 visits to the room during the month of November. Most activity was during the early part of the month, but there were some spikes in activity on November 25th and 29th. The graph below depicts the site views during the month.

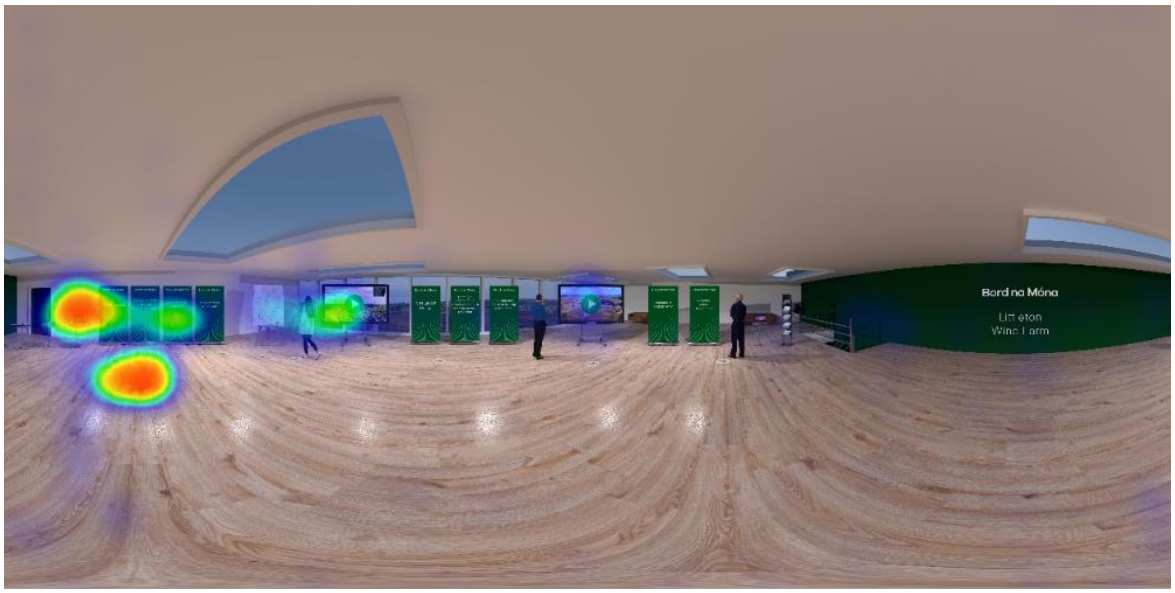


Top 5 Hotspot Clicks

The “Welcome Video” was the most viewed item in the room with 35 clicks. This is followed by the “Photomontage Viewer” with 15 clicks. The “Oweninny Video” and the “Littleton Development Study Area Map” each had 4 clicks, while the “Proposed Wind Farm” banner and the “Proposed Location” banner each attracted 3 clicks. All other figures are available in the table on page 5.



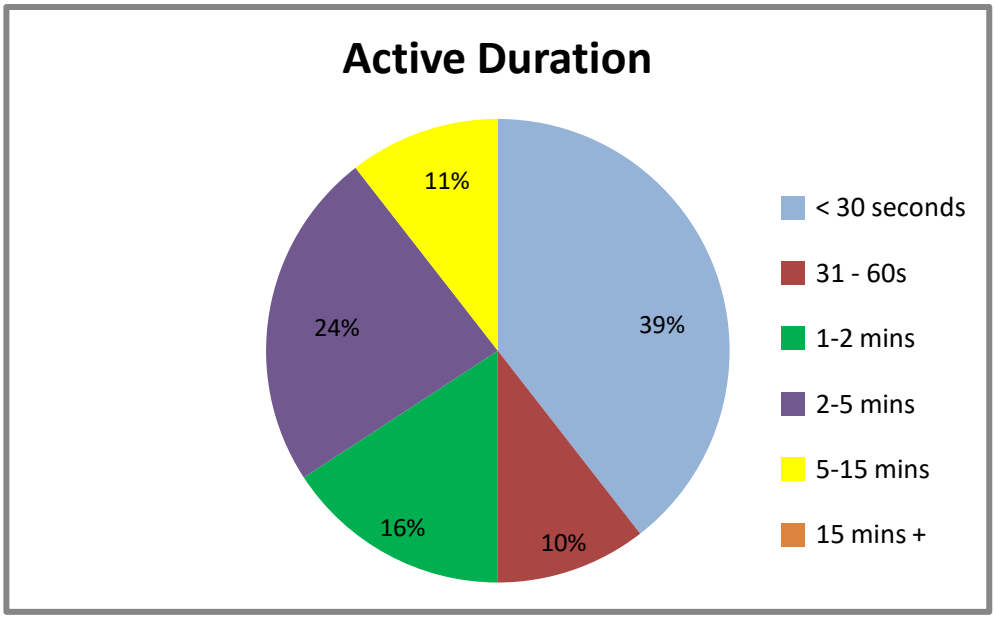
The heat map below indicates the areas of the room people have been looking at. The left-hand side, which is where visitors enter the room, shows the greatest popularity. There is some activity in the centre of the room at the Photomontage Viewer but very little at the end of the exhibition.



Hotspot	No. Clicks
Welcome Video	35
Photomontage Viewer	15
Oweninny Wind Farm (Video)	4
Littleton Development Study Area Map	4
Proposed Location (Banner)	3
The Proposed Wind Farm (Banner)	3
Welcome (Banner)	2
Want to Contact Us?	1
Community Engagement Sessions (Table)	1
Site Layout Design (Banner)	1
Total	**69**

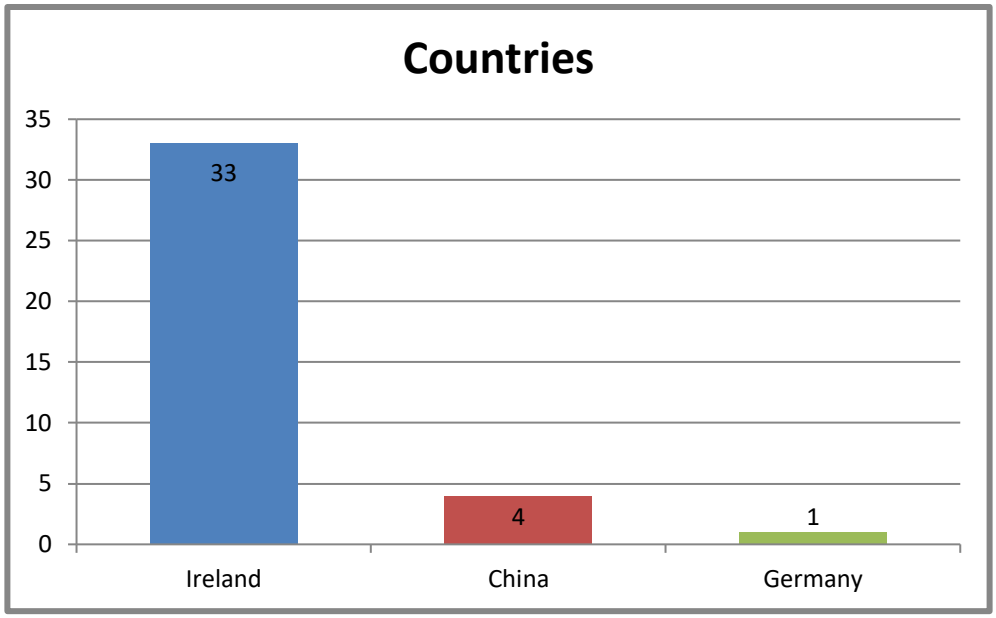
Duration of Site Visits

4 visitors (11%) spent longer than 5 minutes in the room while 19 visitors (50%) spent less than one minute in the room. The chart below shows a breakdown of the times spent in the room.

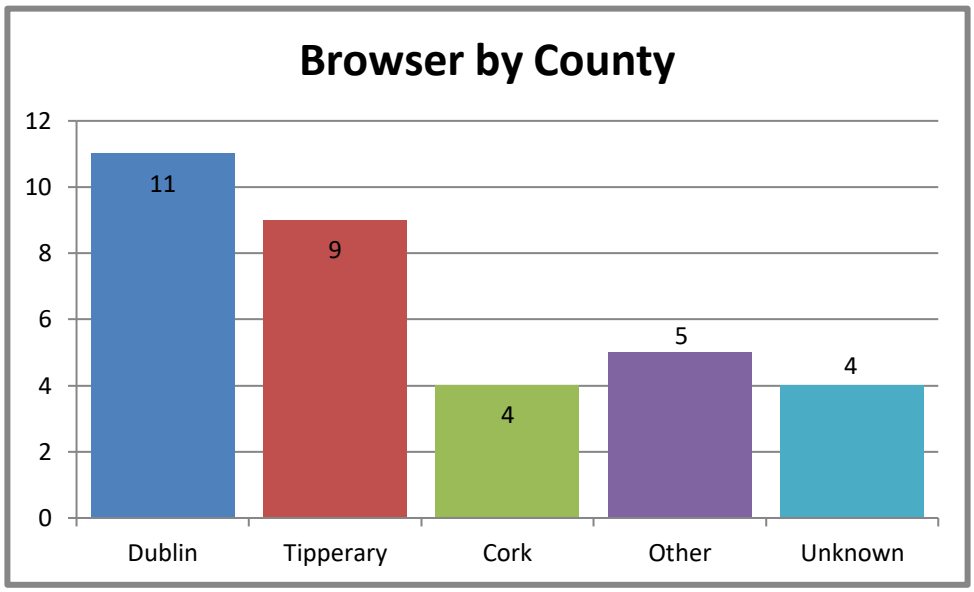


Geographical Breakdown of Site Visitors

87% of traffic in the period was from Ireland. This amounted to 33 visitors. There were 4 visitors from China and 1 from Germany.



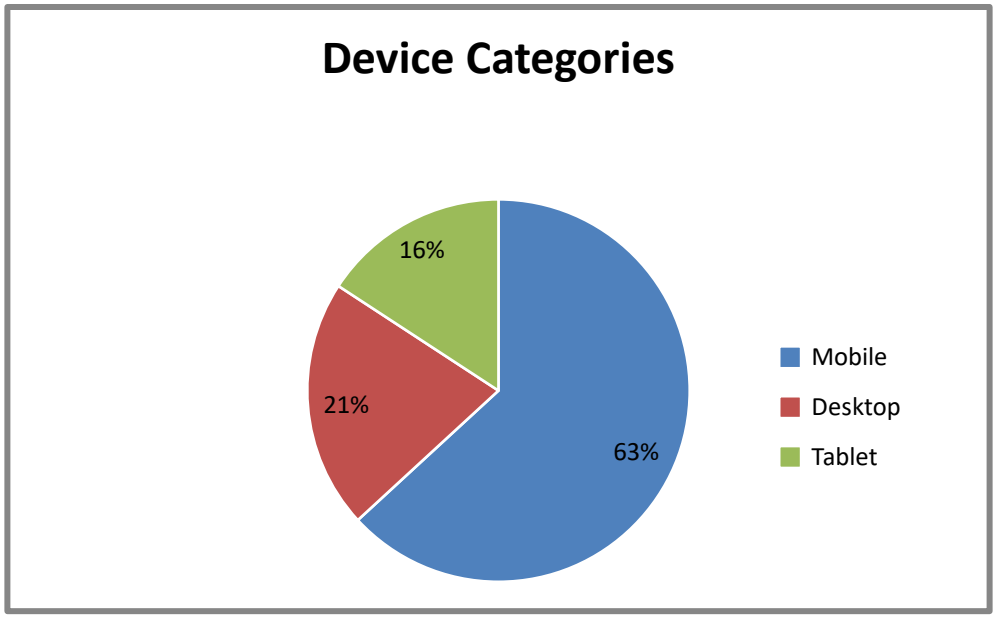
Dublin visitors (11) to the site represented approximately 33% of Irish visitors. 23% of Irish visitors were from Tipperary and 12% from Cork. A further 5 visitors were from other counties in Ireland. 4 visitors (12%) were from other locations in Ireland, but it was not possible to determine where due to user defined browser restrictions. These are indicated as “Unknown” in the chart below*.



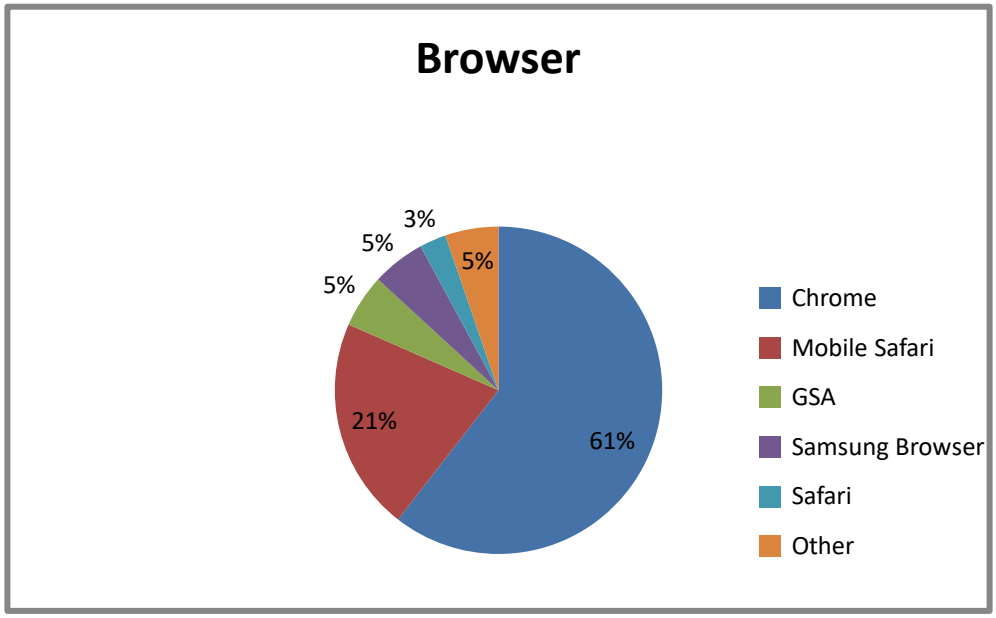
*Note: The above browser location statistics do not always necessarily represent the location of the device accessing the website and may just represent the location of the user’s internet service provider server. As such, these figures should be regarded with caution.

Device, Browser and Platform Information

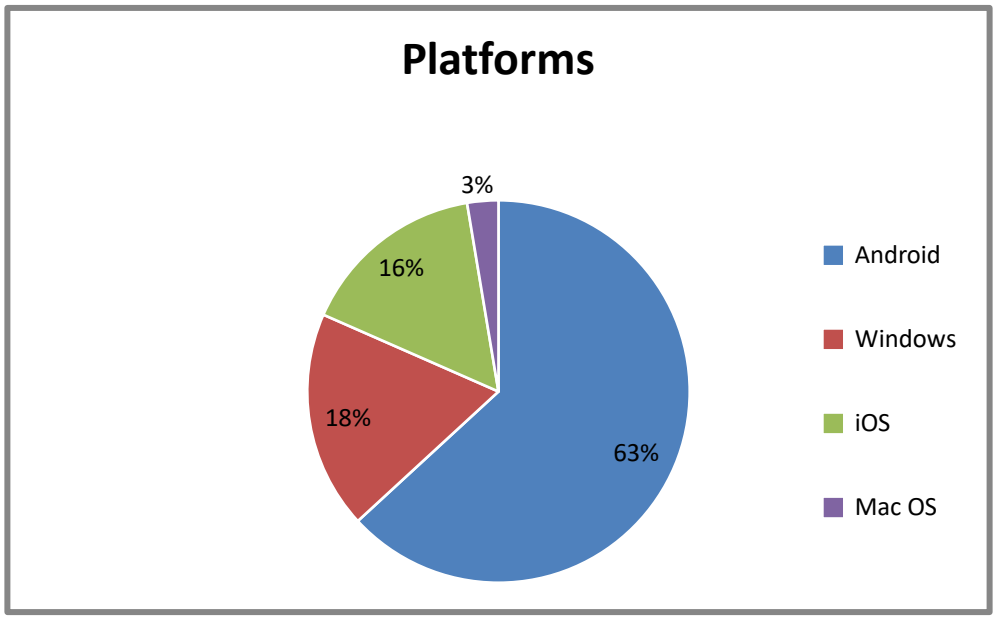
63% of visitors accessed the room using a mobile device. 21% used a laptop or desktop computer while 16% were accessing from a tablet.

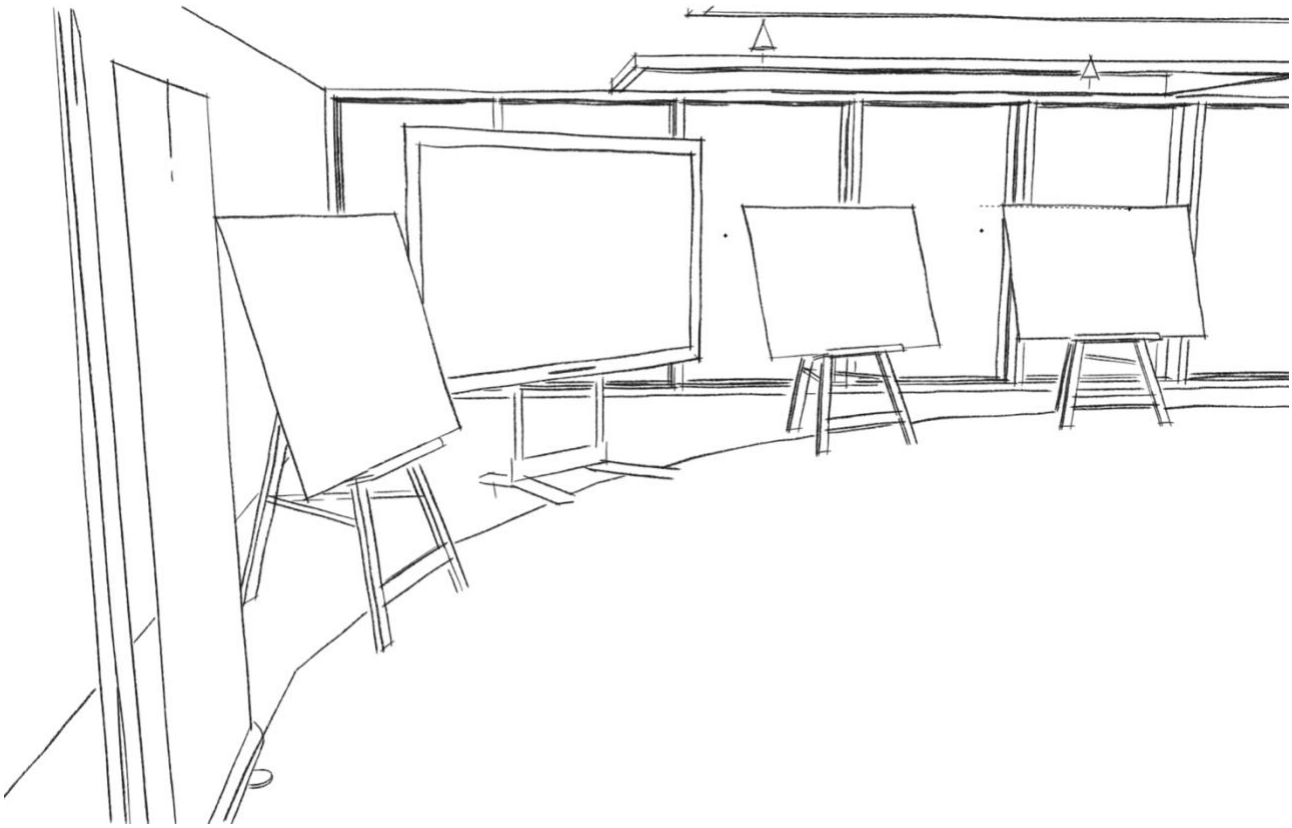


The most popular browser used to visit the site was Chrome. This accounted for 61%. Mobile Safari was used by 21% of visitors. GSA and Samsung Browser each accounted for 5% of visitors, while Safari completed the top five at 3% of visitors.



Android was the most popular platform used with 63% of traffic using it. This was followed by Windows with 18%, iOS with 16% and Mac OS with 3%. No other platforms were used.





Virtual Public Exhibition
Web Traffic Report

Littleton Wind Farm

December 2021

Executive Summary

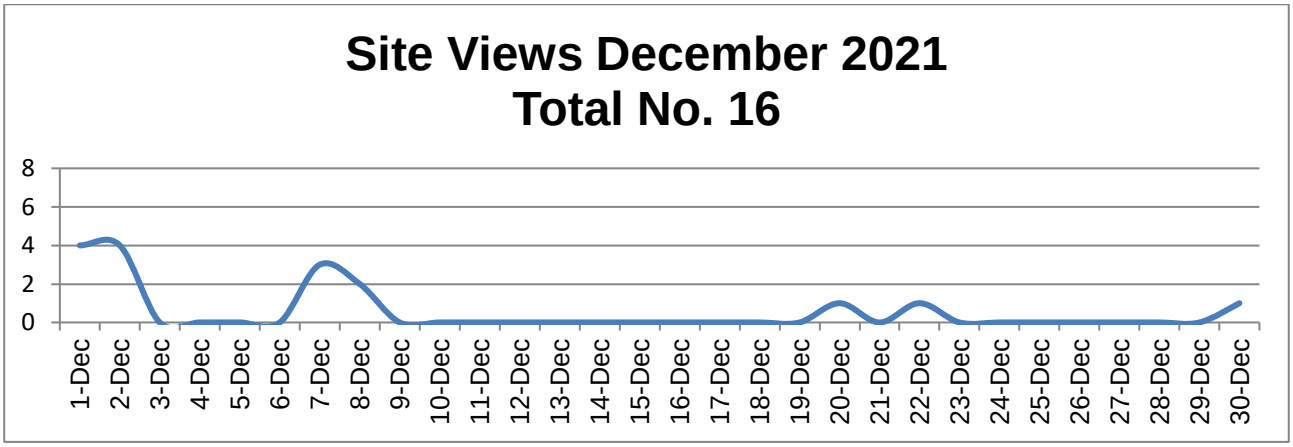
- The total number of visits to the site during this period was 16.
- The most popular parts of the site were the “Welcome Video” followed by the “Photomontage Viewer.
- No visitor spent more than 5 minutes in the room.
- 75% of visitors were from Ireland with 75% of those in the Dublin area.
- A mobile device was the most common device used to access the site.
- The most common platform in use was Android.
- The browser used most frequently to access the site was Chrome.

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• Site Visits	3
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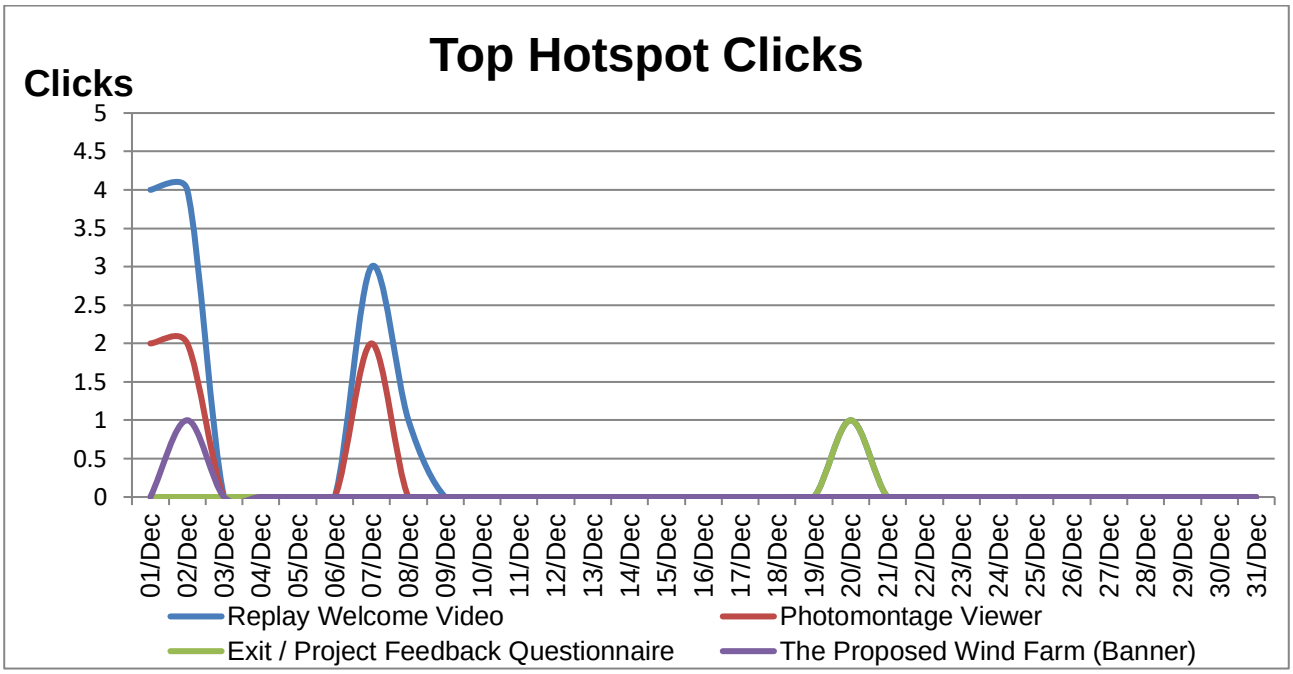
Site Visits

There were 16 visits to the room during the month of December. Most activity was at the start of the month, but there were some spikes in activity on December 7th and 8th. Aside from these dates, there was no day that had more than 1 visit. The graph below depicts the site views during the month.



Top Hotspot Clicks

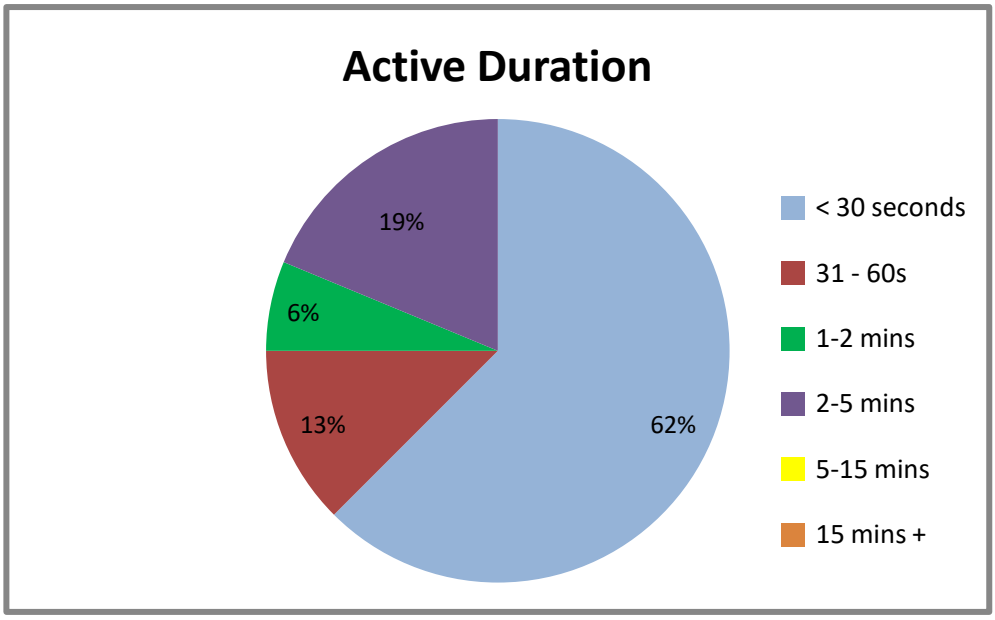
The “Welcome Video” was the most clicked on in the room with 13 clicks. This is followed by the “Photomontage Viewer” with 6 clicks. The only other parts of the room that attracted any clicks were the “Exit / Project Feedback Questionnaire” and the “The Proposed Wind Farm” banner” which had just 1 click each. All figures are available in the table below.



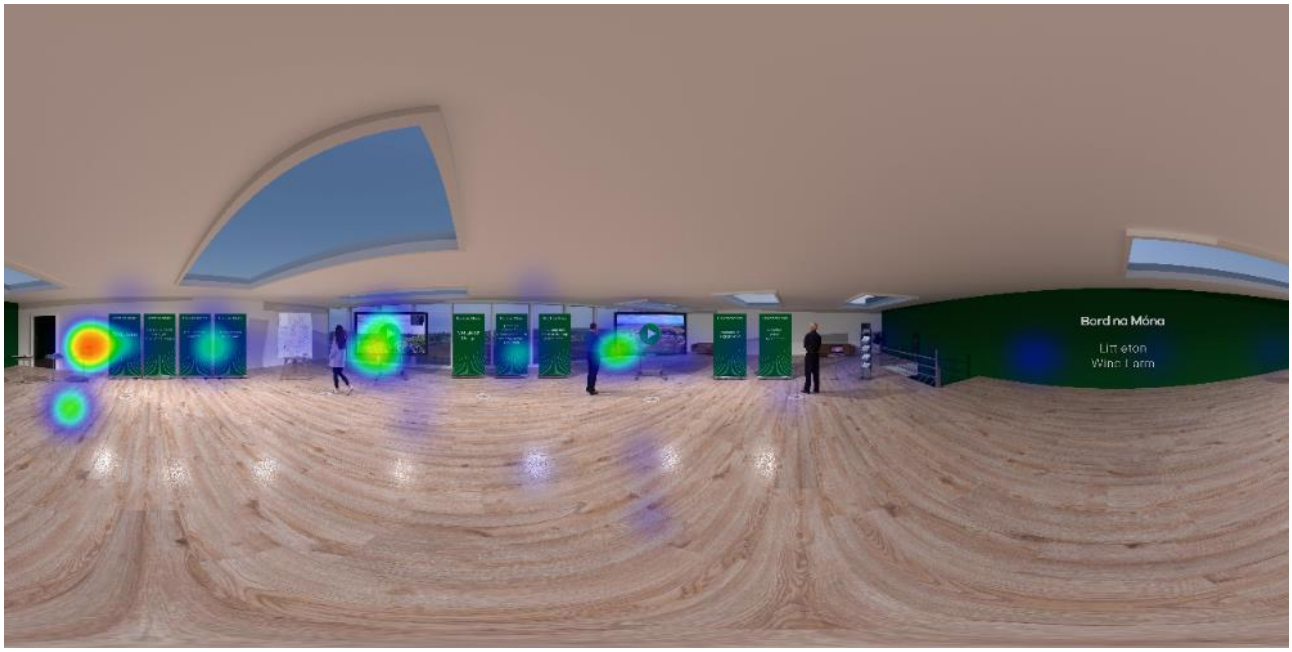
Hotspot	No. Clicks
Replay Welcome Video	13
Photomontage Viewer	6
Exit / Project Feedback Questionnaire	1
The Proposed Wind Farm (Banner)	1
Total	**21**

Duration of Site Visits

No visitors spent longer than 5 minutes in the room while 12 visitors (75%) spent less than one minute in the room. The chart below shows a breakdown of the times spent in the room.

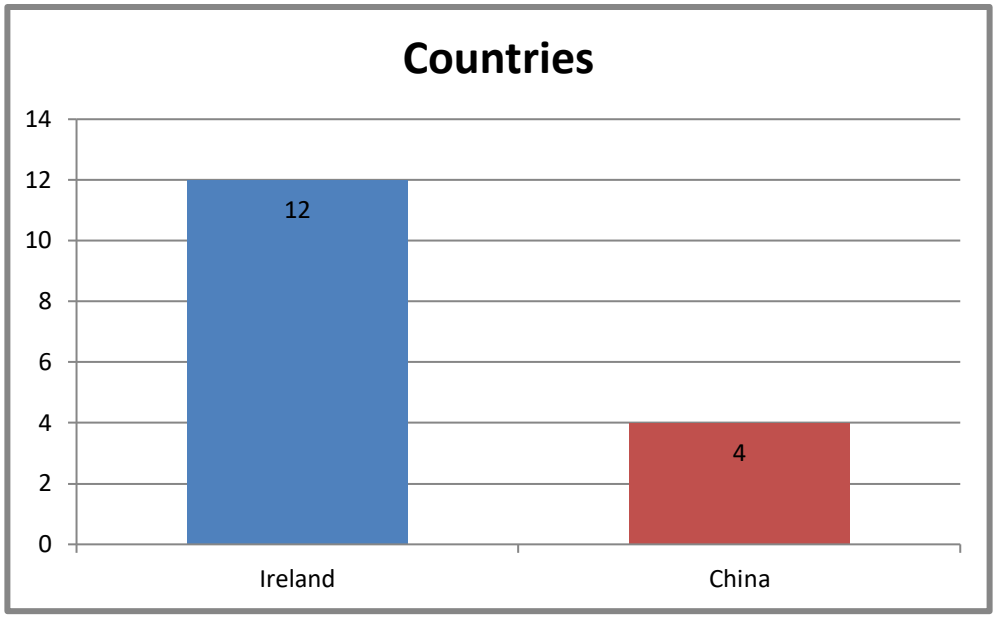


The heat map below indicates the areas of the room people have been looking at. The left-hand side, which is where visitors enter the room, shows the greatest popularity. There is some activity in the centre of the room at the Photomontage Viewer but very little at the end of the exhibition.

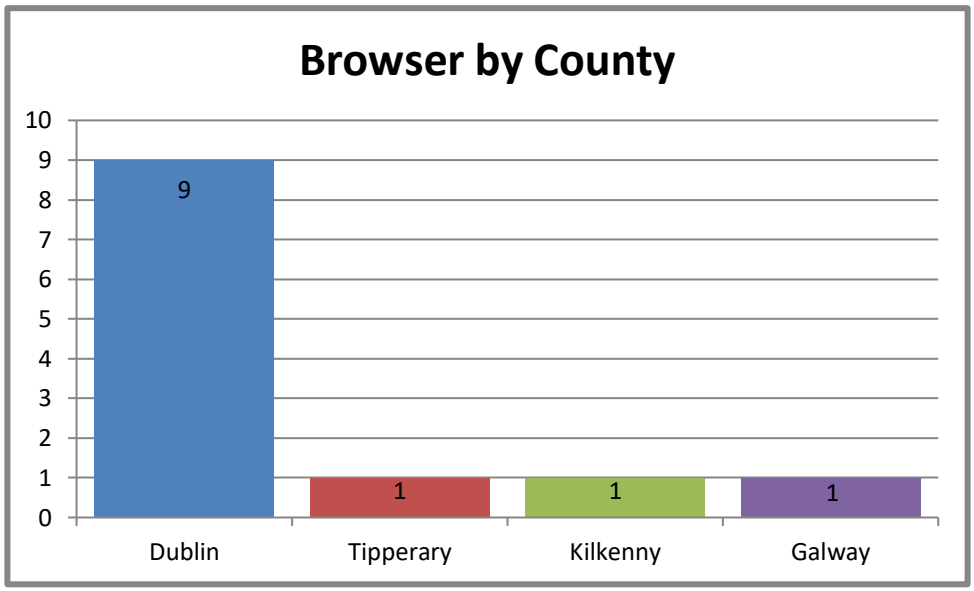


Geographical Breakdown of Site Visitors

75% of traffic in the period was from Ireland. This amounted to 12 visitors. There were 4 visitors from China.



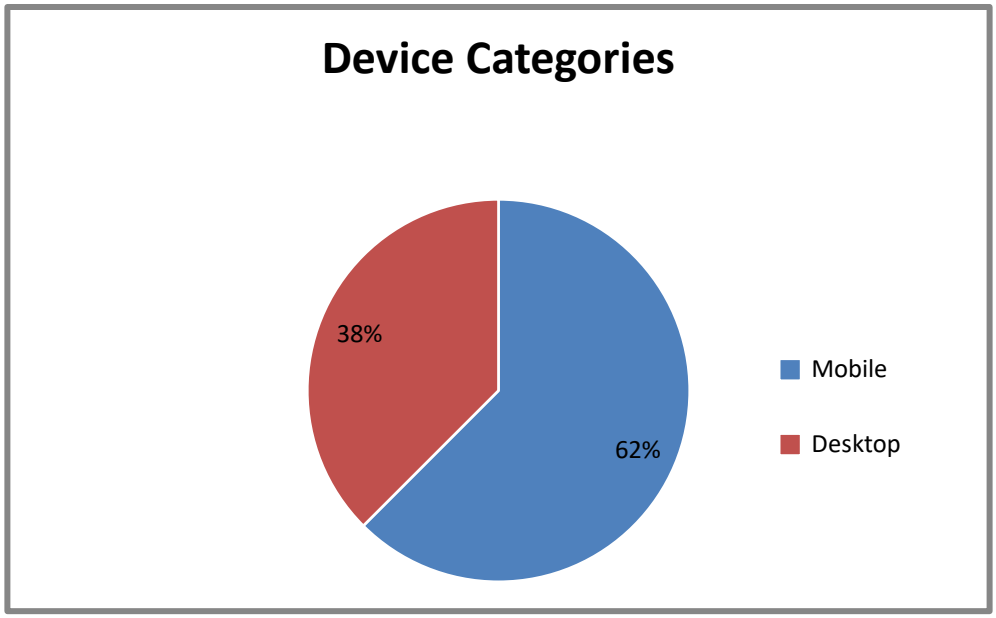
Dublin visitors (9) to the site represented approximately 75% of Irish visitors. There was one visitor from each of counties Tipperary, Kilkenny, and Galway.



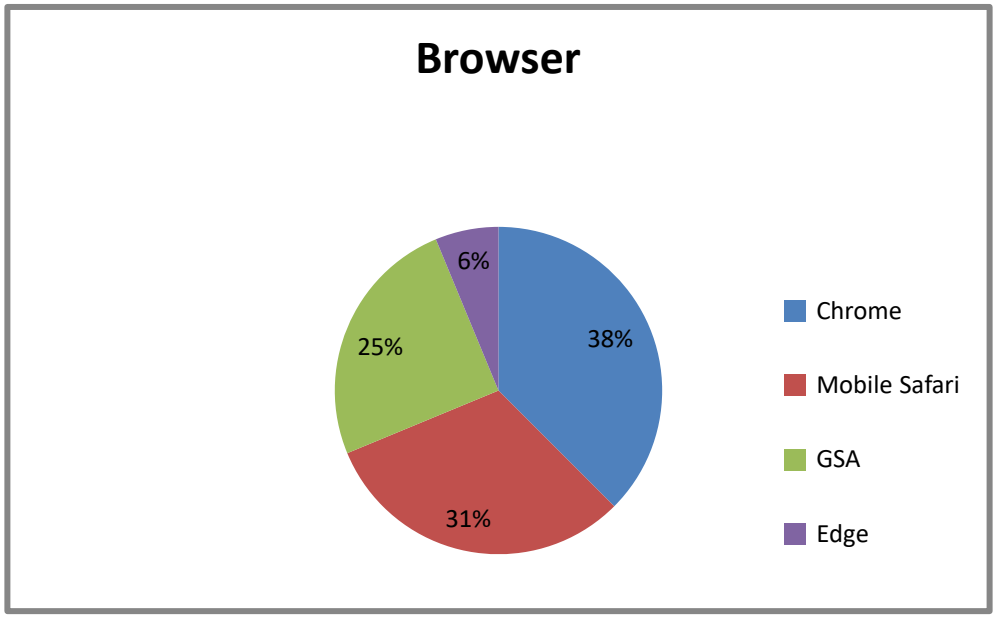
*Note: The above browser location statistics do not always necessarily represent the location of the device accessing the website and may just represent the location of the user's internet service provider server. As such, these figures should be regarded with caution.

Device, Browser and Platform Information

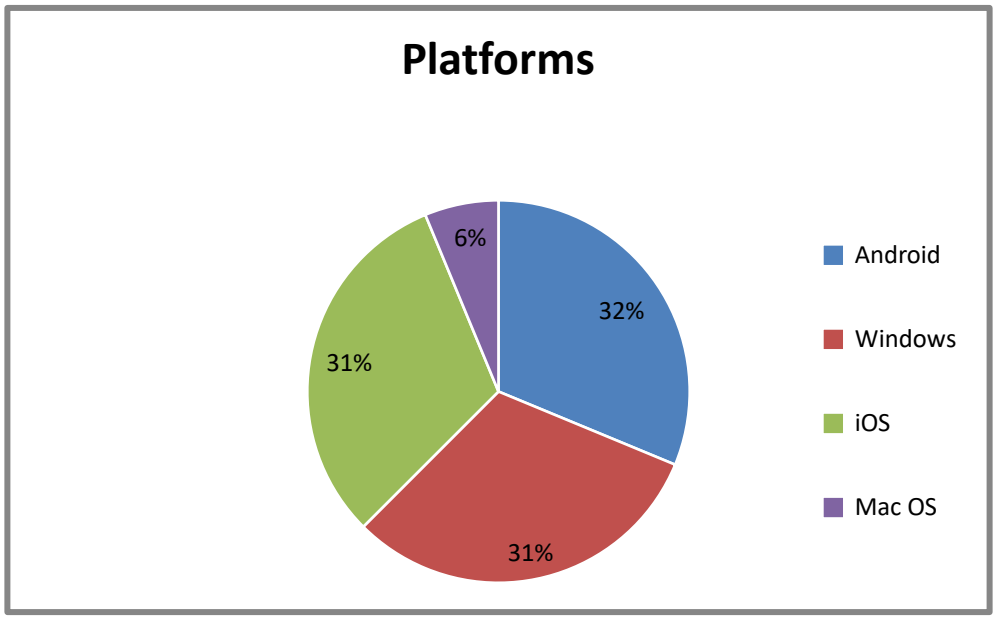
62% of visitors accessed the room using a mobile device. The other 38% used a laptop or desktop computer. No visitor used a tablet.



The most popular browser used to visit the site was Chrome. This accounted for 38%. Mobile Safari was used by 31% of visitors. GSA accounted for 25% while the remaining 6% were using Edge.



Android was the most popular platform used with 32% of traffic using it. This was followed by Windows and iOS with 31% each and Mac OS with 6%. No other platforms were used.



Appendix 11

Joint Venture Announcement House to House Letter Spring 2024

March 2024

Dear Resident,

Bord na Móna partners with SSE Renewables to deliver Littleton Wind Farm.

Bord na Móna have announced a significant joint venture with one of Ireland's leading renewable energy companies SSE Renewables to develop a series of onshore wind energy projects across the Midlands. This partnership will deliver up to 800 MW of new renewable energy generation for Ireland.

The joint venture includes the proposed Littleton Wind Farm located in Tipperary. Since the first announcement of this proposed wind farm in 2021, Bord na Móna has appointed a project Community Engagement and Stakeholder Team including a designated Community Liaison Officer to engage with local communities and near neighbours. This team remains in place and your local Community Liaison Officer will continue to be Colm Dempsey, whose contact details are provided below.

The wind farms jointly developed by Bord na Móna and SSE Renewables will contribute towards the goals set out in Ireland's Climate Action Plan 2023 and will also offer new economic opportunities across the Midlands, with the creation of hundreds of jobs. Working together, both companies will leverage their extensive expertise, resources, and presence across Ireland to generate positive outcomes for communities, local economies, and climate change.

All wind farms developed as part of this joint venture portfolio will have strong commitments to community benefits. Associated Community Benefit Funds will invest in local communities across the Midlands, delivering new public amenities where possible, and delivering biodiversity net gain across all sites.

The joint venture partnership is fully committed to continuing to inform and engage with you through an active communication programme. We are finalising the project design currently and will circulate updates to you in the coming months.

Your local Community Liaison Officer, Colm Dempsey will continue to be available to meet residents as before and is contactable at 087 4143305 or via littletonwindfarm@bnm.ie.

Yours faithfully,

Littleton Wind Farm Communication Team

Appendix 12

Final Layout and Draft Amenity Plan House to House Pack Autumn 2025

Autumn 2025

Project: Proposed Littleton Wind Farm – Final Turbine Layout

Dear Resident,

The purpose of this communication is to provide you with an update on the proposed Littleton Wind Farm, and to advise that we have organised a Public Information Evening on 8th October 2025 from 5.00pm – 8.30pm.

Since the last communication on this proposed wind farm, the project team has been advancing the project design and has now produced a final layout for the proposed development. Accompanying this letter please find enclosed a double-sided map showing the final turbine layout and internal infrastructure for the proposed Littleton Wind Farm.

The revisions to the layout are primarily associated with feedback from public consultation events held in 2021 and revisions to the site constraints arising from further studies. The revised proposal, for which BnM and SSE Renewables intend to submit a planning application in the coming months, comprises of 11 turbines with an overall tip height of 200 metres. For reference, the previous draft layout, published in 2021, consisted of 14 turbines, with an overall tip height of 200 metres.

The proposed turbine layout design has taken account of the requirement of the *"Draft Wind Energy Development Guidelines (2019)"*, which proposes a visual amenity setback of four times the turbine tip height between a wind turbine and the nearest residential property, subject to a mandatory minimum requirement of 500 metres. The minimum setback distance applied to the proposed layout is 800 metres.

It is intended that the revised layout as shown on the enclosed map will be the layout submitted with the planning application – which is envisaged to be lodged in the coming months. Should there be any significant change to the proposed layout prior to submission we will keep you informed.

The proposed wind farm will include the construction of new access roads to install and maintain the wind turbines. The Draft Amenity Plan will seek to utilise these new access roads as a basis for most of the proposed trails for walking and cycling. Additional amenity links are all proposed as part of the wind farm development to create loops and increase accessibility within the site. Please refer to the enclosed map for more detail on the proposed draft amenity plans for the development.

We will inform you directly when a planning application has been lodged for the proposed development. In the meantime, we would like to invite you to attend a **Public Information Evening on 8th October 2025, from 5.00pm to 8.30pm in Moycarkey Borris Community & Sport Centre, Ballybeg, Littleton, Thurles, Co. Tipperary, E41 A0V5.**

If you would like further information on the proposed development in advance of the Information Evening please contact the Community Liaison Officer, Colm at 087 4143305 or contact us via **littletonwindfarm@bnm.ie**.

Yours faithfully,
Littleton Wind Farm Community Relations Team

N

Legend

- Boundary
- Former Littleton Briquette Factory
- Proposed Littleton WF turbines
- Proposed Met Mast
- Proposed Substation Location
- Proposed Wind Farm Roads
- Proposed Wind Farm Amenity Pathway
- Existing Amenity Track
- Proposed Amenity Car Park
- Town

BnM | sse

Drawing Title
Littleton Wind Farm - Infrastructure Map

Drawing Number
LIT-SID-0002-01-R01

Date
19/08/2025

Datum
IRENET95, Projection: ITM

0 0.75 1.5 3 km

Scale: 1:32,500 @ A2

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N

Legend

- Proposed Littleton WF turbines
- Dwellings
- 800m (0 Dwellings)
- 1000m (10 Dwellings, 10 Cum.)
- 1200m (7 Dwellings, 17 Cum.)
- 1400m (18 Dwellings, 35 Cum.)
- 1600m (16 Dwellings, 51 Cum.)
- 1800m (26 Dwellings, 77 Cum.)
- 2000m (19 Dwellings, 96 Cum.)

BnM | SSE

Drawing Title
Littleton Wind Farm - Proximity Map

Drawing Number
LIT-MISC-0001-01-R01

Date
18/08/2025

Datum
IRENET95, Projection: ITM

0 0.75 1.5 3 km

Scale: 1:35,000 @ A2

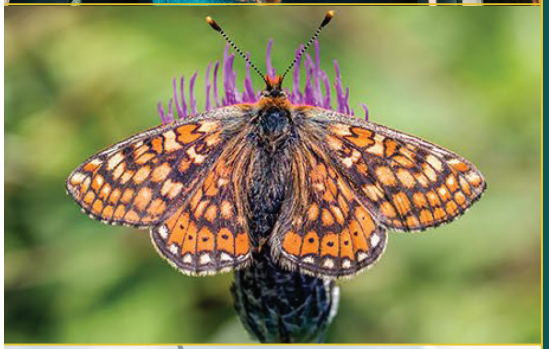
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Appendix 13

Print Media Advertisement Public Information Event Autumn 2025







BnM | SSE

Public Information Evening

BnM and SSE Renewables invite you to attend a Public Information Evening on the proposed Littleton Wind Farm. The Project Team will be on hand to answer queries and to discuss the final proposed wind farm layout design and draft amenity plan.

Date: **Wednesday 8th October 2025**, from 5.00pm to 8.30pm

Venue: Moycarkey Borris Community & Sport Centre, Ballybeg, Littleton, Thurles, Co. Tipperary, E41 A0V5.

If you would like further information on the proposed development in advance of the Information Evening, please contact our Community Liaison Officer - Colm on **087 4143305** or via **littletonwindfarm@bnm.ie**.

Learn more at **littletonwindfarm.ie**

Powering Green Energy Together

144

BNM SSE Littleton press advert.indd 1 02/09/2025 09:53

Appendix 14

Community Engagement Sessions Information Panels October 2025

Need for Wind Energy

Wind farms produce renewable electricity and assist in the offset of carbon emissions including those arising from other sectors, such as agriculture. The proposed project will contribute to both Ireland's and the European Union's renewable energy targets. It will also contribute to increasing the security of Ireland's energy supply and will facilitate a higher level of energy generation and self-sufficiency.

The National Development Plan 2021 – 2030 includes commitments to increase the share of renewable electricity up to 80% by 2030. It is acknowledged that wind energy will provide the main component of Ireland's renewable electricity at that time. The proposed development is likely to be operational before 2030 and would therefore contribute to this 2030 target.

The Climate Action Plan 2025 (CAP) was approved by government on 15th April 2025. The CAP sets out an ambitious course of action over the coming years to address the impacts which climate may have on Ireland's environment, society, economic and natural resources.

This Plan clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption. The CAP identifies a need for 9GW of onshore wind generation. The CAP presents clear and unequivocal support for the provision of additional renewable energy generation and presents yet further policy support for increased wind energy.

Site Selection

In selecting a site for a wind farm development there are a number of criteria that must be considered. Based on these criteria, some sites are more suitable for wind farms than others. The main criteria that we consider include:

- Proximity to Dwellings
- Environment and ecology
- Cumulative Visual Impact
- Grid Access
- Flooding Risk
- Aviation
- County Development Plan
- Supporting Infrastructure
- Telecommunications Links



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Project Overview Proposed Final Layout

Number of Turbines: 11

The final layout comprises of 11 wind turbines. The previously published draft layout consisted of 14 wind turbines.

Height of Turbines: 200m

The proposed turbines will have an overall blade tip height of up to 200 metres. The exact make and model of the turbine will be dictated by a competitive tender process post planning.

Setback Distance: 800m

The final turbine layout has been designed with a minimum setback distance of 800m to the nearest house from a turbine. This is in line with the Draft Wind Energy Development Guidelines (2019), which propose a setback distance of 4 times the tip height.

Turbine Delivery Route

The main site entrance will be to the north of the site from the R639, which will be the entrance for the delivery of all turbine components from the M8. This is also the proposed permanent operational access. The wind farm road network will cross local roads at Longfordpass and Derryhogan. An additional access point is also planned from the local road adjacent to the former Littleton Briquette Factory, which can facilitate construction access to the southern portion of the development in Lanespark bog, however, this access will not be used for the delivery of any turbine components.

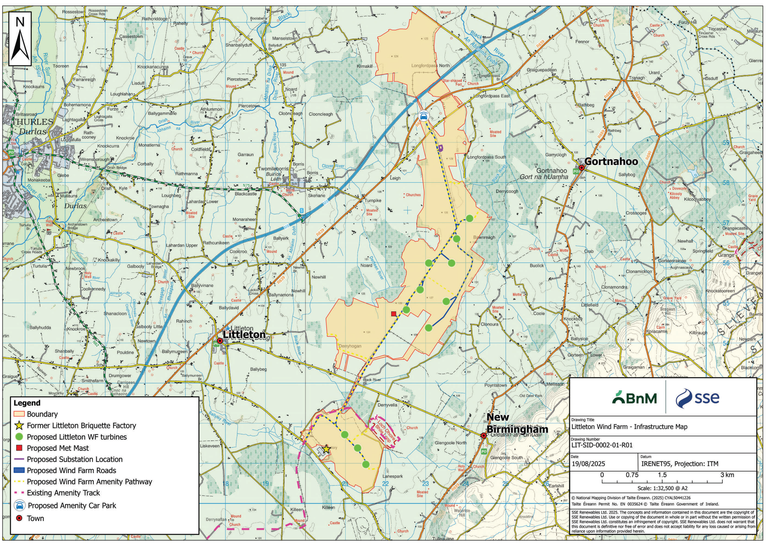
Grid Connection

The final layout includes an on-site electrical substation to connect the wind farm to Ireland's electricity network. Green energy will be transmitted from this substation along a 110kV cable to the most suitable connection point on the existing network, which will be advised by EirGrid as part of the grid connection process. The environmental impact assessment of the wind farm will consider the construction of a 30km underground cable to the most likely grid connection point at Ballyragget 110kV substation, Co. Kilkenny.



Final Layout for Proposed Littleton Wind Farm

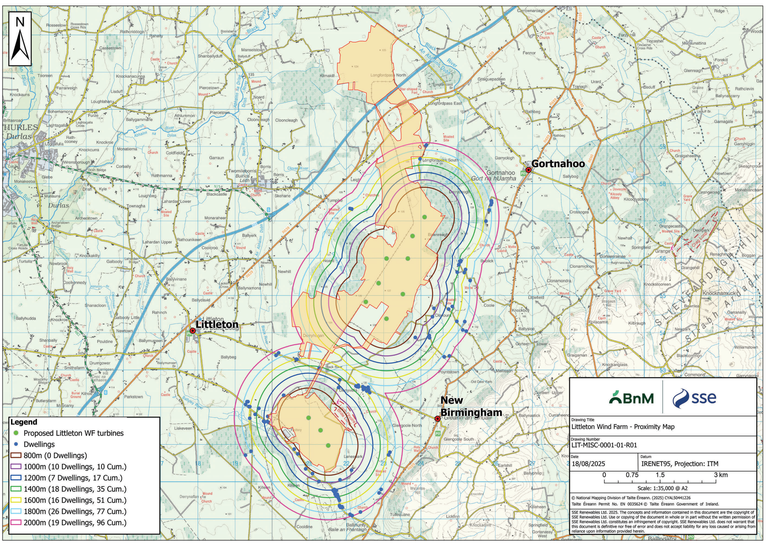
Infrastructure Map



Powering Green Energy Together

Final Layout for Proposed Littleton Wind Farm

Proximity Map



Draft Amenity Plan

The proposed Draft Amenity Plan provides a high-level overview of amenity facilities for the proposed wind farm and will be submitted as part of the planning application for the proposed wind farm development to be considered by An Coimisiún Pleanála. The amenities will tie in with and complement the proposed wind farm infrastructure. Feedback received from the community to-date has influenced this draft amenity plan.

At a minimum, the following elements will be incorporated into the proposed draft amenity plan:

Access Trails



The proposed wind farm will provide circa 20km of amenity trails. The trails have been designed to be looped and tie in with the network of existing roads, exisiting and proposed amenities in the area and the proposed internal road network.



Interpretation and Orientation Signage

Interpretation and orientation signage will be strategically located throughout the site to guide, inform and maximise enjoyment of the site for all users. The style of this signage will be consistent throughout. Materials such as corten steel may be used to provide a durable finish that will visually blend in with the natural landscape and create a visual link to other site furnishings including proposed benches.

Car Parks

There is one new car park proposed at the northern end of the site. A proposed carpark to the south of the site has been removed from this design, due to the presence and proposed carparks from other developments in this location. These carparks may be utilised to provide a range of options to access the wind farm amenity trails.



Benches and Picnic Tables

Simple rustic style benches with armrests are proposed throughout the site. Every effort will be made to use recycled/reusable materials where possible. Typical examples of such materials would be reclaimed timber or recycled plastic. Picnic table sets of a similar design will be installed at various locations to provide users with opportunities to rest and enjoy lunch on there visit.



Waymarker Posts

Waymarker posts will be used at key junctions throughout the site to guide users along designated trails. This may include:

- Tail finger posts with labelled markers at main path intersections to highlight routes to special features such as car parks.
- Smaller waymarker bollards at path junctions with colour coded directional discs to direct people along designated trails.

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Strategic Infrastructure Development
Planning Process Explained

For most large-scale projects, a key consideration is whether a development is a Strategic Infrastructure Development (SID). Energy infrastructure which is considered SID* includes:

"An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 megawatts"

*(as outlined in the Seventh Schedule, Section 1 of the Planning and Development (Strategic Infrastructure) Act 2006).

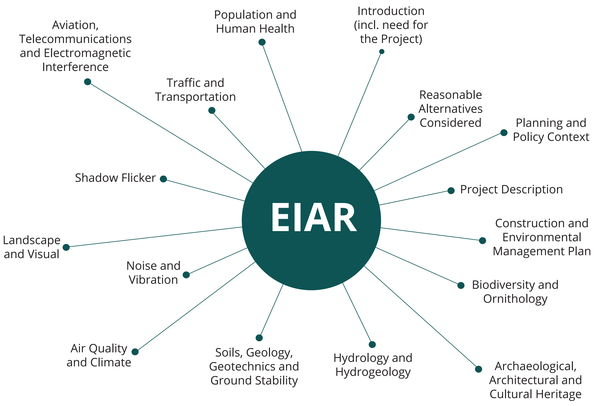
The Project Team is currently undertaking a pre-planning consultation process with An Coimisiún Pleanála to determine with certainty who the consenting authority will be. Irrespective of the Consenting Authority, as the proposed project has a proposed total output in excess of 5 MW, it exceeds the mandatory threshold for Environmental Impact Assessment and so an Environmental Impact Assessment Report will be required as supporting documentation to the planning application.

SID Projects	
Planning application to An Coimisiún Pleanála.	Environmental Impact Assessment mandatory.
Non-SID Projects	
Planning application to local County Council.	Environmental Impact Assessment mandatory in some cases.

What is included in an Environmental Impact Assessment Report (EIAR)?

Due to the nature and scale of the proposed development an Environmental Impact Assessment (EIA) is being carried out. As part of this process, an environmental baseline for the proposed development site has been established through fieldwork and other baseline surveys.

All of this information will be described and documented in an Environmental Impact Assessment Report (EIAR) which will accompany the planning application documentation submitted to the appropriate Consenting Authority for consideration. The EIAR will comprise the following as a minimum:



Benefits of the Development

Benefits arising from the construction and operation of the proposed Littleton Wind Farm project will include:

- A Community Benefit Fund.
- 80 to 100 jobs at peak construction, followed by number of long term, high quality technical jobs in operations and maintenance.
- Substantial commercial rates paid to Tipperary County Council, and investment in the wider economy through tax and exchequer contributions.
- Upgrades to the road infrastructure in the vicinity of the wind farm (as required).
- Indirect employment created through the sub-supply of a wide range of products and services.



Clonbullogue National School - basketball court.



Killannin GAA for All – funding kits.



Bracknagh Heritage Society - community mural.

Images used are for illustrative purpose only.

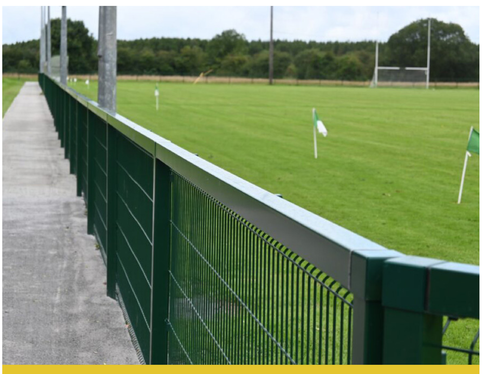
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Community Benefit

It is envisaged that a Community Benefit Fund will be set up for the proposed Littleton Wind Farm once the project is operational.

As the project is at an early stage of its development, the exact nature and structure of a proposed Community Benefit Fund is not known at this time, albeit we would envisage it being similar in type to our existing Community Benefit Funds which include:

- A Community Benefit Scheme – providing funding to local communities and not-for-profit organisations.
- Educational Scholarship Support Scheme- providing an annual number of scholarship support to the wider community for a variety of courses of NFC Level 6 Certificate and above.
- A Near Neighbour Fund – which may be used towards annual electricity contribution and once-off support to carry out energy efficiency measures and/or education support to residents within a prescribed distance of a turbine.



Ballyfore GAA - completed fence.



Bunroe – funding for EV charger.

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Grid Connection

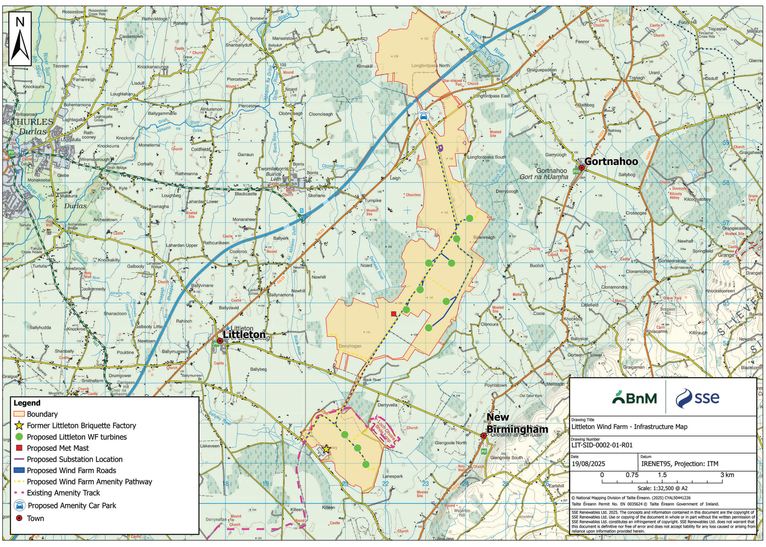
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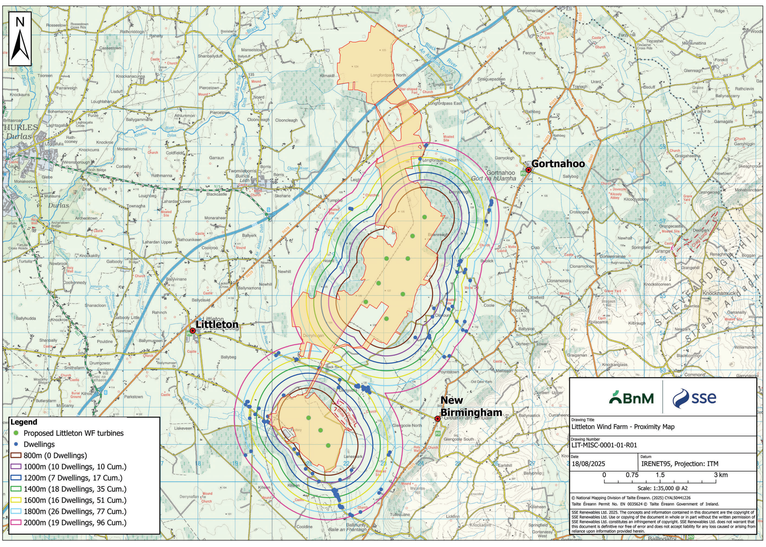
Final Layout for Proposed Littleton Wind Farm

Infrastructure Map



Final Layout for Proposed Littleton Wind Farm

Proximity Map



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Together

How You Can Get in Touch

The proposed Littleton Wind Farm will benefit from participation by all interested parties during each stage of the development.

Call us
If you wish to make a comment or require further information about the proposed wind farm please contact the project's Community Liaison Officer, Colm, on 087 4143305.

Email us
Email us any comments or queries via: littletonwindfarm@bnm.ie

Write to us
Littleton Wind Farm Community Relations Team,
BnM, Main Street, Newbridge, Co. Kildare, W12 XR59

Join our mailing list
Keep informed of all project updates by signing up to our project mailing list. Please visit the dedicated project website to complete the sign-up form: www.littletonwindfarm.ie

Learn more at **www.littletonwindfarm.ie**

APPENDIX 2.4

SID Determination and Meeting Minutes

Our Case Number: ABP-311587-21

Your Reference: Bord na Móna Powergen Limited

An Coimisiún Pleanála

FEHILY TIMONEY & Co.

Distribution TB/JH

25 MAR 2026

Job No: P20-211

Correspondence No:

Comment:

Fehily Timoney & Company
Rita Mansfield
Core House
Pouladuff Road
Cork
Co. Cork
T12 D773

Date: 24 March 2026

Re: Proposed development of between 14 and 18 no. wind turbines, 110kV on-site substation and associated connection to the national grid.
Littleton Wind Farm, Co. Tipperary.

Dear Sir / Madam,

Please be advised that following consultations under section 37B of the Planning and Development Act, 2000 as amended, the Commission hereby serves notice under section 37B(4)(a) that it is of the opinion that the proposed development falls within the scope of paragraphs 37A(2)(a), (b) and (c) of the Act. Accordingly, the Commission has decided that the proposed development would be strategic infrastructure within the meaning of section 37A of the Planning and Development Act 2000, as amended. Any application for permission for the proposed development must therefore be made directly to An Coimisiún Pleanála under section 37E of the Act.

Please also be informed that the Commission considers that the pre-application consultation process in respect of this proposed development is now closed.

Attached is,
• Appendix 1: Prescribed bodies to be notified of the application for the proposed development.
• Appendix 2: Schedule of Information which is considered necessary to submit in order to facilitate the undertaking of the Completeness Check under Section 37JA of the Planning and Development Act 2000, as amended.

In accordance with section 146(5) of the Planning and Development Act, 2000 as amended, the Commission will make available for inspection and purchase at its offices the documents relating to the decision within 3 working days following its decision. This information is normally made available on the list of decided cases on the website on the Wednesday following the week in which the decision is made.

The following information relates to challenges to the validity of a decision of An Coimisiún Pleanála under the provisions of the Planning and Development Act 2000, as amended.

Judicial review of An Coimisiún Pleanála decisions under the provisions of the Planning and Development Acts (as amended).

Teil	**Tel**	(01) 858 8100
Glao Áitiúil	**LoCall**	1800 275 175
Facs	**Fax**	(01) 872 2684
Láithreán Gréasáin	**Website**	www.pleanala.ie
Ríomhphost	**Email**	communications@pleanala.ie

64 Sráid Maoilbhride
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

A person wishing to challenge the validity of a Commission decision may do so by way of judicial review only. Sections 50, 50A and 50B of the Planning and Development Act 2000 (as substituted by section 13 of the Planning and Development (Strategic Infrastructure) Act 2006, as amended/substituted by sections 32 and 33 of the Planning and Development (Amendment) Act 2010 and as amended by sections 20 and 21 of the Environment (Miscellaneous Provisions) Act 2011) contain provisions in relation to challenges to the validity of a decision of the Commission.

The validity of a decision taken by the Commission may only be questioned by making an application for judicial review under Order 84 of The Rules of the Superior Courts (S.I. No. 15 of 1986). Sub-section 50(7) of the Planning and Development Act 2000 requires that subject to any extension to the time period which may be allowed by the High Court in accordance with subsection 50(8), any application for judicial review must be made within 8 weeks of the decision of the Commission. It should be noted that any challenge taken under section 50 may question only the validity of the decision and the Courts do not adjudicate on the merits of the development from the perspectives of the proper planning and sustainable development of the area and/or effects on the environment. Section 50A states that leave for judicial review shall not be granted unless the Court is satisfied that there are substantial grounds for contending that the decision is invalid or ought to be quashed and that the applicant has a sufficient interest in the matter which is the subject of the application or in cases involving environmental impact assessment is a body complying with specified criteria.

Section 50B contains provisions in relation to the cost of judicial review proceedings in the High Court relating to specified types of development (including proceedings relating to decisions or actions pursuant to a law of the state that gives effect to the public participation and access to justice provisions of Council Directive 85/337/EEC i.e. the EIA Directive and to the provisions of Directive 2001/12/EC i.e. Directive on the assessment of the effects on the environment of certain plans and programmes). The general provision contained in section 50B is that in such cases each party shall bear its own costs. The Court however may award costs against any party in specified circumstances. There is also provision for the Court to award the costs of proceedings or a portion of such costs to an applicant against a respondent or notice party where relief is obtained to the extent that the action or omission of the respondent or notice party contributed to the relief being obtained.

General information on judicial review procedures is contained on the following website, www.citizensinformation.ie.

Disclaimer: The above is intended for information purposes. It does not purport to be a legally binding interpretation of the relevant provisions and it would be advisable for persons contemplating legal action to seek legal advice.

If you have any queries in the meantime, please contact the undersigned officer of the Commission or email sids@pleanala.ie quoting the above mentioned An Coimisiún Pleanála reference number in any correspondence with the Commission.

Yours faithfully,

PP AWS

Niamh Hickey
Executive Officer
Direct Line: 01-8737145

PC09

Teil	**Tel**	(01) 858 8100		
Glao Áitiúil	**LoCall**	1800 275 175		
Facs	**Fax**	(01) 872 2684	64 Sráid Maoilbhríde	64 Marlborough Street
Láithreán Gréasáin	**Website**	www.pleanala.ie	Baile Átha Cliath 1	Dublin 1
Ríomhphost	**Email**	communications@pleanala.ie	D01 V902	D01 V902

Appendix 1 – Prescribed bodies

- Department of Housing and Local Government and Heritage
- Department of Climate, Energy and the Environment
- Department of Transport
- Department of Tourism, Culture, Arts, Gaeltacht, Sports and Media
- Department of Agriculture, Food & Marine
- Roscommon County Council
- Tipperary County Council
- Kilkenny County Council
- Southern Regional Assembly
- Transport Infrastructure Ireland
- An Chomhairle Ealaíon (Arts Council)
- The Heritage Council
- Fáilte Ireland
- An Taisce
- Uisce Éireann
- Inland Fisheries Ireland
- Irish Aviation Authority
- Air Nav Ireland
- EPA
- HSE
- Health and Safety Authority
- The Commission for Regulation of Utilities
- ESB

- EirGrid

Further notifications should also be made, where deemed appropriate.

Appendix 2 – Schedule of Information to Inform Completeness Check

This Schedule of Information seeks to provide details which will facilitate An Coimisiún Pleanála in undertaking the Completeness Check required by Section 37JA of the Planning and Development Act 2000, as amended in order to process the application. It shall not be construed as comprising an assessment of the application documentation or a consideration of the merits of the proposed development.

Details of Proposed Development at Closure

Pre-Application Ref.	ABP-311587-21
Prospective Applicant:	BnM SSE
Date of Final Meeting:	1st December 2025
Number of Turbines:	11 no.
Design Flexibility opinion:	No
Is Grid Connection Included:	No
Is a BESS included:	No
Accommodating works for TDR:	No

Information

Plans and Particulars	
Public Notice	• Time Period for Consultation and Fee for Submissions • Standalone Website Address • EIAR and NIS referenced • Reference to Section 37JA • All townlands within the site boundary to be correctly referenced.
Prescribed Bodies	• Notification of All Prescribed Bodies and a copy of the correspondence sent to same.

Land Ownership	• Interest in land • Written consent of all other landowners (*Inc. legally binding agreement & land registry map if required)*
Design Flexibility	Design flexibility not sought.
Fee	
EIA Portal	Letter from Portal
Planning Statement	• Renewable Energy Designation Policy Statement • Statement outlining compliance with all relevant policies and objectives in the County Development Plan including a justification for material contravention of same if relevant. • Consultation overview • Community Benefit Fund • Planning history
Drawings	• Drawing Schedule • Site location map • Site layout plan • Plans, elevations, sections and cross-sections • Wayleaves shown • Grid Connection Route • Scales appropriate
EIAR	
No design Flex	One turbine type (*tip height of 200 m, a hub height of 119 m and a rotor diameter of 162 m*) and grid connection to be assessed.
Non-Technical Summary	Provided as a standalone section.
Introduction	• Legislative context • Scoping Consultation • Community Engagement Report • Methodology/methodologies for the assessment of the environmental factors and for the description and consideration of the significance of effects • Study Area(s) and justification for same. • Project Team (Author qualifications, experience and expertise)

	• Technical Difficulties/Limitations
Description of the Proposed Development	• Detailed description (all stages) of the characteristics of the proposed development including use of natural resources, production of waste, emissions & disturbances • Construction Environmental Management Plan • Decommissioning Plan • Waste & Resource Management Plan • IPC Licence, bogland rehabilitation and establishment of baseline environment for related environmental factors.
Consideration of Alternatives	• Site selection & design process • Reasonable alternatives considered (Layout, scale, technologies, grid connection, turbine delivery, substation infrastructure, construction methodology, bog rehabilitation, etc)
Population and Human Health	• Population & Settlement Patterns • Economic Activity & Employment • Tourism & Amenities (Inc. recreational trails/waterways) • Human Health & Wellbeing (Reference Studies) • Property Devaluation/House Prices

Biodiversity	• Derogations (Required/Obtained)
	• Ecological Impact Assessment
	• Biodiversity Enhancement Areas/Management Plan (*Proposed Peat Restoration*)
	• Bat Surveys (to include):
	  o Preliminary Roost Assessment Surveys,
	  o Bat activity transect surveys,
	  o Static bat detector deployments,
	  o Emergence/re-entry bat roost,
	  o Hibernation
	  o Survey data to include a min. of 30 days in each season, in a variety of weather conditions with detectors at different height levels.
	• Invasive Species Management Plan
	• Terrestrial Surveys (*Habitat & ecology (inc protected flora, invasive plant species, mammals, amphibians and reptiles*)

	• Aquatic Surveys (*Habitat & ecology (inc river habitat, macroinvertebrate, electro-fishing, fisheries)*)
Ornithology	• Surveys (*Vantage Point, Breeding & non-breeding, hinterland, Dusk, Walkover, Roost & Winter surveys*) • Connectivity with European Sites • Collision Risk Model (CRM) Assessment • Monitoring Programme • Cumulative Assessment
Noise and Vibration	• Baseline Noise Levels • Map of all receptors within 4 x Tip of Turbines • Predicted Noise Levels • Proposed Noise Limits (cumulative) • Operational Noise Monitoring Proposal • Mitigation Strategy for Operational Amplitude Modulation and Tonal Noises • Cumulative Noise Assessment
Shadow Flicker	• Shadow Flicker Analysis • Wind Turbine Control Measures
Air and Climate	• Carbon Impact Assessment including Embodied Energy Assessment and Climate Change Vulnerability Assessment • Dust Generation/Emissions and Management • Vehicle Emissions and Management
Land, Soils & Geology	• Ground Condition Assessment (inc): o Ground Investigations Report o Site Investigations Report o LIDAR Survey o On site precipitation monitoring and use of climate data o Ground and surface water monitoring (*using piezometres*) and in-situ hydraulic conductivity testing. o Slope Stability Analysis (*Justification of model employed. Deterministic model recommended*). • Peat and Spoil Management Plan

Hydrology, Hydrogeology & Water Quality	• Hydrological Assessment • Hydrogeological Assessment • Flood Risk Assessment • Surface water/Drainage Management Plan • Standalone Water Framework Directive Compliance Report • Emergency Response Plan • Water Quality Management Plan • Drinking Water Source (UE and GWSS) Assessment
Landscape & Visual	• Photomontages • ZTV Analysis (20km radius from development site) • Landscape Character Assessment • Viewpoint Assessment
Traffic & Transportation	• Turbine Delivery Route & Swept Path Analysis • Haul Route & Swept Path Analysis • Traffic and Transport Assessment • Traffic Management Plan (including Construction traffic) • Stage 1 Road Safety Audit • Design Report (TII requirements)
Material Assets	• Gas/ESB networks • Telecommunications Impact Study • Aviation Review Statement • Any other relevant material assets identified in consultation process
Cultural Heritage	• Heritage Impact Assessment & a Historic Landscape Character Assessment • Archaeological Impact Assessment
Major Accidents and Disasters	• Construction Stage • Operational Stage • Impact of Climate Change
Cumulative Assessment	Projects considered should be clearly identified and the location of the cumulative assessment clearly labelled within each Chapter as relevant.
Interactions of the Foregoing	Description of interactions between factors.

Compendium of Mitigation Measures	Intent expressed for the implementation of mitigation measures to be clearly set out as – 'shall'. Commitments need to be expressed clearly and be specific.
Appendices	All appendices and sub appendices to be submitted in hard and soft copy. To include: • Glossary of Terms • Noise Survey Results & Calibration Certificates • Material Volume Calculations • Statement of Competency • Other relevant documents
AA Screening report	• Author qualifications, experience and expertise • Methodology • Zone of Influence (ZOI) and identification of relevant European Sites to be based on a Source-Pathway-Receptor Model using the precautionary principle • Must include consideration of: Lower River Suir SAC, River Barrow and River Nore SAC, and The Loughans SAC (grid connection).
NIS	• Author qualifications, experience and expertise • Methodology • Collision Risk Modelling (CRM) • Biodiversity & Ornithology Surveys for QI & SCI species and habitats in accordance with Best Practice • Consideration of relevant Land, soils & geology reports/assessments* • Consideration of relevant Hydrological, hydrogeological & water reports/assessments* • Compendium of Mitigation Measures (*Intent expressed for implementation of mitigation measures – 'shall')* * *As stipulated above for EIAR.*
Appendices	All appendices and sub appendices to be submitted in hard and soft copy.

Other Documents (To include):	
Civil Engineering Report	• Site Entrances • Access Tracks • Wind turbines • Cable routes & connections • Substation (Compound & Buildings) • Meteorological Mast • Temporary construction compounds • Borrow Pits & Deposition Areas • Haul Route • Turbine Delivery Route • Surface Water Design • Wastewater • Potable Water • Decommissioning & Restoration

An Coimisiún Pleanála

Direction
CD-022034-26
ABP-311587-21

The submissions on file and the inspector's report were considered at a Commission Meeting held on the 23/03/2026. The Commission generally agreed with the Inspector's recommendation as indicated hereunder.

REASONS AND CONSIDERATIONS

Having regard to the size, scale and location of the proposed development and related development, and to the policy context, it is considered that the proposed development comprising the development of an 11 no. turbine wind farm, and all associated infrastructure including a 110kV on-site substation, located in the townlands of Littleton, Longfordpass North, Kilmakill, Longfordpass East, Longfordpass South, Leigh, Bawnreagh, Clonoura, Noard, Derryhogan, Derryvella, Ballybeg, Lanespark and Killeen, County Tipperary constitutes development that falls within the definition of energy infrastructure in the Seventh Schedule of the Planning and Development Act 2000, as amended, thereby satisfying the requirements set out in Section 37A(1) of the Act.

The proposed development is also considered to be of strategic importance by reference to the requirements of Section 37A(2)(a), 37A(2)(b) and 37A(2)(c) of the Planning and Development Act 2000, as amended.

An application for permission for the proposed development must therefore be made directly to An Coimisiun Pleanála under Section 37E of the Act.

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Fee	
EIA Portal	Letter from Portal
Planning Statement	• Renewable Energy Designation Policy Statement • Statement outlining compliance with all relevant policies and objectives in the County Development Plan including a justification for material contravention of same if relevant. • Consultation overview • Community Benefit Fund • Planning history
Drawings	• Drawing Schedule • Site location map • Site layout plan • Plans, elevations, sections and cross-sections • Wayleaves shown • Grid Connection Route • Scales appropriate
EIAR	
No design Flex	One turbine type (*tip height of 200 m, a hub height of 119 m and a rotor diameter of 162 m*) and grid connection to be assessed.
Non-Technical Summary	Provided as a standalone section.
Introduction	• Legislative context • Scoping Consultation • Community Engagement Report • Methodology/methodologies for the assessment of the environmental factors and for the description and consideration of the significance of effects • Study Area(s) and justification for same.

	• Project Team (Author qualifications, experience and expertise) • Technical Difficulties/Limitations
Description of the Proposed Development	• Detailed description (all stages) of the characteristics of the proposed development including use of natural resources, production of waste, emissions & disturbances • Construction Environmental Management Plan • Decommissioning Plan • Waste & Resource Management Plan • IPC Licence, bogland rehabilitation and establishment of baseline environment for related environmental factors.
Consideration of Alternatives	• Site selection & design process • Reasonable alternatives considered (Layout, scale, technologies, grid connection, turbine delivery, substation infrastructure, construction methodology, bog rehabilitation, etc)
Population and Human Health	• Population & Settlement Patterns • Economic Activity & Employment • Tourism & Amenities (Inc. recreational trails/waterways) • Human Health & Wellbeing (Reference Studies) • Property Devaluation/House Prices
Biodiversity	• Derogations (Required/Obtained) • Ecological Impact Assessment • Biodiversity Enhancement Areas/Management Plan (*Proposed Peat Restoration*) • Bat Surveys (to include): o Preliminary Roost Assessment Surveys, o Bat activity transect surveys, o Static bat detector deployments, o Emergence/re-entry bat roost, o Hibernation o Survey data to include a min. of 30 days in each season, in a variety of weather conditions with detectors at different height levels. • Invasive Species Management Plan

	• Terrestrial Surveys (*Habitat & ecology (inc protected flora, invasive plant species, mammals, amphibians and reptiles*) • Aquatic Surveys (*Habitat & ecology (inc river habitat, macroinvertebrate, electro-fishing, fisheries)*)
Ornithology	• Surveys (*Vantage Point, Breeding & non-breeding, hinterland, Dusk, Walkover, Roost & Winter surveys*) • Connectivity with European Sites • Collision Risk Model (CRM) Assessment • Monitoring Programme • Cumulative Assessment
Noise and Vibration	• Baseline Noise Levels • Map of all receptors within 4 x Tip of Turbines • Predicted Noise Levels • Proposed Noise Limits (cumulative) • Operational Noise Monitoring Proposal • Mitigation Strategy for Operational Amplitude Modulation and Tonal Noises • Cumulative Noise Assessment
Shadow Flicker	• Shadow Flicker Analysis • Wind Turbine Control Measures
Air and Climate	• Carbon Impact Assessment including Embodied Energy Assessment and Climate Change Vulnerability Assessment • Dust Generation/Emissions and Management • Vehicle Emissions and Management
Land, Soils & Geology	• Ground Condition Assessment (inc): o Ground Investigations Report o Site Investigations Report o LIDAR Survey o On site precipitation monitoring and use of climate data o Ground and surface water monitoring (*using piezometres*) and in-situ hydraulic conductivity testing. o Slope Stability Analysis (*Justification of model employed. Deterministic model recommended*).

	• Peat and Spoil Management Plan
Hydrology, Hydrogeology & Water Quality	• Hydrological Assessment • Hydrogeological Assessment • Flood Risk Assessment • Surface water/Drainage Management Plan • Standalone Water Framework Directive Compliance Report • Emergency Response Plan • Water Quality Management Plan • Drinking Water Source (UE and GWSS) Assessment
Landscape & Visual	• Photomontages • ZTV Analysis (20km radius from development site) • Landscape Character Assessment • Viewpoint Assessment
Traffic & Transportation	• Turbine Delivery Route & Swept Path Analysis • Haul Route & Swept Path Analysis • Traffic and Transport Assessment • Traffic Management Plan (including Construction traffic) • Stage 1 Road Safety Audit • Design Report (TII requirements)
Material Assets	• Gas/ESB networks • Telecommunications Impact Study • Aviation Review Statement • Any other relevant material assets identified in consultation process
Cultural Heritage	• Heritage Impact Assessment & a Historic Landscape Character Assessment • Archaeological Impact Assessment
Major Accidents and Disasters	• Construction Stage • Operational Stage • Impact of Climate Change
Cumulative Assessment	Projects considered should be clearly identified and the location of the cumulative assessment clearly labelled within each Chapter as relevant.

Interactions of the Foregoing	Description of interactions between factors.
Compendium of Mitigation Measures	Intent expressed for the implementation of mitigation measures to be clearly set out as – 'shall'. Commitments need to be expressed clearly and be specific.
Appendices	All appendices and sub appendices to be submitted in hard and soft copy. To include: • Glossary of Terms • Noise Survey Results & Calibration Certificates • Material Volume Calculations • Statement of Competency • Other relevant documents
AA Screening report	• Author qualifications, experience and expertise • Methodology • Zone of Influence (ZOI) and identification of relevant European Sites to be based on a Source-Pathway-Receptor Model using the precautionary principle • Must include consideration of: Lower River Suir SAC, River Barrow and River Nore SAC, and The Loughans SAC (grid connection).
NIS	• Author qualifications, experience and expertise • Methodology • Collision Risk Modelling (CRM) • Biodiversity & Ornithology Surveys for QI & SCI species and habitats in accordance with Best Practice • Consideration of relevant Land, soils & geology reports/assessments* • Consideration of relevant Hydrological, hydrogeological & water reports/assessments* • Compendium of Mitigation Measures (*Intent expressed for implementation of mitigation measures – 'shall')* * *As stipulated above for EIAR.*

Appendices	All appendices and sub appendices to be submitted in hard and soft copy.
Other Documents (To include):	
Civil Engineering Report	• Site Entrances • Access Tracks • Wind turbines • Cable routes & connections • Substation (Compound & Buildings) • Meteorological Mast • Temporary construction compounds • Borrow Pits & Deposition Areas • Haul Route • Turbine Delivery Route • Surface Water Design • Wastewater • Potable Water • Decommissioning & Restoration

Planning Commissioner: **Date:** 23/03/2026

Tom Rabbette

Our Case Number: ABP-311587-21
Your Reference: Bord na Mona Powergen limited

An Coimisiún Pleanála

Fehily Timoney & Company
Core House
Pouladuff Road
Co. Cork
T12 D773

Date: 23 December 2025

Re: Proposed development known as North Irish Sea Array ("NISA") Offshore Wind Farm Located off the coast of Counties Dublin, Meath and Louth (www.northirishseaarraysid.ie)

Dear Sir / Madam,

I have been asked by An Coimisiún Pleanála to refer further to the above-mentioned pre-application consultation request.

Please find enclosed a copy of the written record of the meeting of the 1st of December 2025.

If you have any queries in relation to the matter, please contact the undersigned officer of the Commission email marine@pleanala.ie quoting the above mentioned An Coimisiún Pleanála reference number in If you have any queries in the meantime, please contact the undersigned officer of the Commission or any correspondence with the Commission.

Yours faithfully,

PP EGM

Ellen Moss
Executive Officer
Direct Line: 01-8737285

ADHOC

FEHILY TIMONEY & Co.

Distribution TB / JH / CA

0 5 JAN 2026

Job No: P20 - 211

Correspondence No:

Comment:

Teil
Glao Áitiúil
Facs
Láithreán Gréasáin
Ríomhphost

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64 Marlborough Street
Dublin 1
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An Coimisiún Pleanála

Record of Meeting
ABP-311587-21 (PC)

Case Reference / Description	Proposed development of between 14 and 18 no. wind turbines, 110kV on-site substation and associated connection to the national grid. Littleton Wind Farm, Co. Tipperary.		
Case Type	Pre-Application Consultation		
1st / 2nd / 3rd / 4th Meeting	2nd Meeting		
Date	01/12/2025	**Start Time**	14:30pm
Location	MS Teams	**End Time**	15:50pm

Representing An Coimisiún Pleanála
Una Crosse, Assistant Director of Planning, Chair
Donal Donnelly, Senior Planning Inspector
Maeve Flynn, Senior Ecologist
Emmet Smyth, Senior Environmental Scientist
Niamh Hickey, Executive Officer

Representing the Prospective Applicant
Laura Burke, SSE Renewables
Caroline Donnelly, SSE Renewables
Muriel Ennis, BnM
Trevor Byrne, Fehily Timoney and Company

Conor Auld, Fehily Timoney and Company
Cian Doughan, Macros Works
Tony Cummins, John Cronin and associates
Ben O'Dwyer, Fehily Timoney and Company
Doireann Tarrant, Fehily Timoney and Company
Michael Gill, Hydro Environmental
Maureen Marsden, Fehily Timoney and Company
Caitriona Carter, BnM

Introduction

The Commission referred to the email received from the prospective applicant on the 9th October 2025, requesting a 2nd pre-application consultation meeting with the first meeting held on the 15th February 2022. The Commission's representatives mentioned the general procedures outlined at the first meeting, noting they remain applicable and referenced the recent transposition of the RED III Directive.

Presentation

The prospective applicant's presentation, which is attached to the file set out the following:

- Meeting Agenda,
- The applicant and project history,
- Development proposal,
- Comparative site boundary,
- Comparative site layouts,
- Grid connection route,
- Turbine delivery route,

- Amenity proposals,
- Policy context with National and Local Policy provisions,
- Habitats, Fauna and Key Ecological Receptors,
- Hydrology, hydrogeology, flooding and water framework directive
- Peat and landslide susceptibility,
- Sensitive receptors,
- Noise,
- Landscape visuals,
- Cultural heritage,
- Cumulative Assessment,
- Key studies and surveys,
- Consultations,
- Public consultations,
- Engagement with NPWS,
- Previous An Coimisiún Pleanála comments,
- Proposed planning documentation,
- Environmental Impact Assessment and supporting documents,
- Proposed development timelines.

Discussion

- The Commission's representatives began the discussion by asking the prospective applicant to submit the drawings presented at the meeting in an appropriate scale.
- The Commission's representatives advised the prospective applicant that they have no indication of when the relevant Chapter of the Planning and Development Act 2024 will commence.
- The Commission's representatives advised the prospective applicant to include a chapter on mitigation measures in the Environmental Impact Assessment Report. They also advised the prospective applicant to address alternatives as

they relate to site locations, design layouts, turbine configurations, access points, substation locations and grid connections.

- Following a query raised by the Commission's representatives the prospective applicant stated that it is not proposed to apply for design flexibility or incorporate a battery energy storage system within the proposed development.
- The Commission's representatives enquired about how decommissioning would be assessed in the Environmental Impact Assessment Report and the prospective applicant stated that it would be addressed within each chapter.
- The Commission's representatives advised the prospective applicant to undertake a comprehensive cumulative impact assessment including all relevant wind farm developments and other relevant development types. The prospective applicant confirmed there will be a full list of projects included within the zone of influence. It is proposed that each chapter of the EIAR would have a dedicated section on cumulative impacts.
- The prospective applicant responded to queries relating to the key species to be considered and the proposed monitoring of same. A query arose in respect of the presence of marsh fritillary and suitable habitat for same.
- Landowner consent was confirmed in response to a query on same.
- Consistency in respect of the hard and soft copy of documentation was advised as was the need to ensure all appendices and sub appendices were attached.
- The Commission's representatives noted that the prospective applicant has not had contact with the NPWS since 2023 and highlighted the importance of this engagement and encouraged them to request further consultation. The prospective applicant explained that engagement had been sought but no response had been received and stated that the engagement in 2023 was quite detailed and not much information in the proposed development has changed since.
- The Commission's representatives highlighted areas of Ornithology that the prospective applicant should ensure where thoroughly considered and noted the importance of comprehensive and appropriate survey work. The

Commission's representatives advised the prospective applicant to focus on key species of conservation concern.

- The Commission's representatives advised the prospective applicant to apply a consistent assessment methodology for the bird impact assessment and if multiple methods are used, to provide an appropriately detailed rationale for their incorporation.
- The Commission's representatives advised that the prospective applicant ensure that the appropriate population basis for the relevant bird species are incorporated into the collision risk model methodology.
- It was advised by the Commission's representatives that the rationale in respect of the location, composition and interactions of any proposed biodiversity enhancement measures should be clearly set out.
- Proposed mitigation to address water management at the location of the borrow pit was outlined by the prospective applicant in response to a query from the Commission's representative.
- The prospective applicant confirmed that amplitude modulation and tonal noise will be addressed by way of an operational mitigation strategy in the EIAR following a query from the Commission's representatives.
- The Commission's representatives enquired about the status of the IPC licence on the site and the rehabilitation proposed of the bog. The prospective applicant outlined that some parts of the bog have already undergone the rehabilitation process, while other parts are still subject to same. The prospective applicant confirmed that the Wind Farm infrastructure and the rehabilitation of the bog can run in parallel. The Commission's representatives advised to make sure this is addressed in the Environmental Impact Assessment Report particularly as it relates to the baseline environment.
- The prospective applicant outlined their intention to submit the substitute consent application in the first instance closely followed by the Section 37E application for the proposed windfarm.

- The Commission's representatives clarified information regarding the RED III process and advised the prospective applicant that a 'Schedule of Information to Inform the Completeness Check' when the application is lodged will be provided to the prospective applicant at the conclusion of the pre-application process.

Conclusion:

The Commission's representatives advised that the onus is on the prospective applicant to either request a further meeting or formal closure of the instant pre-application consultation process. The Commission's representatives advised that the record of this meeting will be issued in the meantime and that the prospective applicant can submit any comments it may have in writing or alternatively bring any comments for discussion at the time of any further meeting.

The meeting concluded at 15:50pm.

Una Crosse

Una Crosse
Assistant Director of Planning.

Our Case Number: ABP-311587-21

Your Reference: Bord na Móna Powergen Limited

An Bord Pleanála

Fehily Timoney & Company
Core House
Pouladuff Road
Cork
Co. Cork
T12 D773

Date: 25th February 2022

Re: Proposed development of between 14 and 18 no. wind turbines, 110kV on-site substation and associated connection to the national grid.
Littleton Wind Farm, Co. Tipperary

Dear Sir / Madam,

I have been asked by An Bord Pleanála to refer further to the above-mentioned pre-application consultation request.

Please find enclosed a copy of the written record of the first meeting of the 15th February.2022.

If you have any queries in relation to the matter please contact the undersigned officer of the Board.

Please quote the above-mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-8737250

PC07

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Baile Átha Cliath 1
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64 Marlborough Street
Dublin 1
D01 V902

An Bord Pleanála

Record of Meeting ABP-311587-21 1st meeting

Case Reference / Description	ABP-311587-21 Proposed development of between 10 to 14 wind turbines and associated works at Littleton Wind Farm, Co. Tipperary.		
Case Type	Pre-application consultation		
1st / 2nd / 3rd Meeting	1st		
Date	15/02/22	**Start Time**	11 a.m.
Location	N/A	**End Time**	11.55 a.m.

Representing An Bord Pleanála
Staff Members
Ciara Kellett, Assistant Director of Planning (Chair)
Donal Donnelly, Senior Planning Inspector
Kieran Somers, Executive Officer
Representing the Prospective Applicant
Eamon Hutton, Fehily Timoney and Co
Vincent Doyle, Bord na Mona
Caitriona Carter, Bord na Mona
Sean Creedon, Bord na Mona
Trevor Byrne, Fehily Timoney and Co
Jim Hughes, Fehily Timoney and Co

The Board referred to the letter received from the prospective applicant requesting pre-application consultations and advised the prospective applicant that the instant meeting essentially constituted an information-gathering exercise for the Board; it also invited the prospective applicant to outline the nature of the proposed development and to highlight any matters it wished to receive advice on from the Board. The Board mentioned general procedures in relation to the pre-application consultation process as follows:

- The Board will keep a record of this meeting and any other meetings, if held. Such records will form part of the file which will be made available publicly at the conclusion of the process. The record of the meeting will not be amended by the Board once finalised, but the prospective applicant may submit comments on the record which will form part of the case file.
- The Board will serve notice at the conclusion of the process as to the strategic infrastructure status of the proposed development. It may form a preliminary view at an early stage in the process on the matter.
- A further meeting or meetings may be held in respect of the proposed development.
- Further information may be requested by the Board and public consultations may also be directed by the Board.
- The Board may hold consultations in respect of the proposed development with other bodies.
- The holding of consultations does not prejudice the Board in any way and cannot be relied upon in the formal planning process or any legal proceedings.

Presentation by the prospective applicant:

The prospective applicant provided the Board's representatives with a description of the proposed development which is intended to comprise of between 10 and 14 wind turbines with a tip height of 200 metres. The proposed development is proposed to be located on three bogs in the Littleton Bog Group, County Tipperary; the subject site is approximately 1,020 hectares in size. A 110kV substation is also proposed as part of the development, as well as associated connection to the National Grid and ancillary works. The prospective applicant said that the turbine delivery route will likely utilise the M8 west of the site for the purposes of transport of turbine components. Recreational and amenity facilities are also proposed. Bio-diversity enhancement is also being considered throughout the subject site.

With respect to the rationale of the proposed development, the prospective applicant referred to the Climate Action Plan 2021 which includes the key target to achieve 80% renewable electricity production by the year 2030.

The prospective applicant referred to the Seventh Schedule of the Planning and Development Act 2000, as amended, and, in particular, to the relevant threshold for proposed wind power projects. The prospective applicant pointed out that the proposed development would have a total power output of approximately between 40 to 80 megawatts and would thereby likely exceed the SID threshold of 50 megawatts.

With regard to the matter of impact assessment, the prospective applicant noted that the proposed development will require both EIA and Appropriate Assessment; it added that an EIAR and NIS will accompany the subsequent planning application. In relation to the EIA process, the prospective applicant advised that the EIAR Scoping Report for the proposed development has issued to both statutory and non-statutory consultees, including Tipperary County Council.

With respect to policy context, the prospective applicant referred to key plans/documents including the Draft Tipperary County Development Plan 2022-2028, the Tipperary Wind Energy Strategy and the Regional Spatial and Economic Strategy for the Southern Region. The prospective applicant noted that the County's policy generally supports renewable energy.

With regard to the existing environment and proposed grid route to facilitate the proposed development, the prospective applicant said that the subject site is located approximately 10 kilometres east of Thurles and it also noted proximate settlements such as Gortnahoe and Littleton. The prospective applicant said that the current draft layout for the proposed development provides for up to 14 wind turbines in two clusters; it noted that there are circa 30 residential dwellings within 1 kilometre of the subject site and circa 156 dwellings within 2 kilometres of the subject site. The prospective applicant noted permitted and existing wind farm developments in the vicinity of the proposed development; these include Gurteen Lower Wind Farm, Ballybay Wind Farm and Lisdowney Wind Farm.

With respect to the matter of cultural heritage, the prospective applicant noted the presence of a number of RMP sites within the boundary of the subject site; the prospective applicant said that these sites/monuments have been considered and appropriate setbacks applied at design stage.

In relation to biodiversity, the prospective applicant advised that survey work is on-going and that surveys have been conducted with respect to wintering birds, breeding birds, bats, terrestrial habitats, aquatic ecology and invasive species. Further surveys will take place at proposed turbine locations during the summer of 2022. The prospective applicant also noted relevant European Sites in the vicinity of the proposed development; these included the Lower River Suir SAC, the Cullahill Mountain SAC and the Galmoy Fen SAC.

With regard to the proposed connection to the National Grid, the prospective applicant advised that it is currently assessing a range of different connection options. All options will be the subject of environmental assessments the prospective applicant added.

With respect to the proposed on-site 110kV substation, the prospective applicant advised that it is currently investigating a suitable location for this; a number of options are being explored in this regard.

In relation to the matter of visual impact and assessment, the prospective applicant presented a number of intended viewpoint locations for the proposed development (Viewpoint 1 – Longford Pass and Viewpoint 2 – Good Shepherd Cemetery, Gortnahoe).

With regard to consultations to date, the prospective applicant advised that the EIAR Scoping document was issued to 68 statutory and non-statutory and relevant stakeholders in September 2021. The prospective applicant reported that, to date, six responses have been received and that key issues raised related to cabling in the public road and ecological effects. The prospective applicant also advised that it held a pre-planning meeting with representatives of Tipperary County Council in December 2021. In relation to public consultations, the prospective applicant advised that there is a dedicated project community liaison officer for the project and that two phases of public consultations have been held to date.

With respect to project milestones, the prospective applicant advised of a substitute consent application which is due to be lodged in Quarter 2 2022 if leave to apply is granted. In relation to the instant project, the prospective applicant stated its current intention is to submit the planning application circa Quarter 3 2022.

Board's advice/queries:

With respect to the Board's query on the matter, the prospective applicant said that it was confident that the total power output for the proposed development would exceed 50 megawatts and that this would be confirmed at a second meeting.

The Board noted key considerations to the prospective applicant with respect to the draft County Development Plan and the wind energy strategy of the relevant local authority.

In response to the Board's query on the matter, the prospective applicant said that it would be considering other viewpoints and would generate photomontages with respect to visual amenity impacts.

With regard to the proposed hub heights for the turbines, the prospective applicant said that it would be in a position to indicate the range of these heights at a later stage in the pre-application consultation process. The Board noted that if a range of heights are proposed, it is critical that the various options are fully assessed in the EIAR.

The Board also noted the importance of peat stability assessment and peat depths in relation to the proposed turbines and their individual foundations. Other matters such as peat removal and the necessity for a chapter in the EIAR on climate were also noted by the Board. Cumulative effects should be robustly assessed the Board advised.

In response to the Board's query on the matter, the prospective applicant confirmed that the proposed grid connection would be included in the same planning application. The prospective applicant said that it would be in a position to indicate the preferred grid connection route at a later stage in the pre-application consultation process. The prospective applicant said that it would be consulting with and working with Eirgrid and the ESB with regard to this.

The Board representatives noted that ecological surveys are well underway for the proposed development and, with regard to any historical surveys, it referred the prospective applicant to the Advice Note on the Lifespan of Ecological Reports and Surveys (CIEEM).

In response to the Board's query on the matter, the prospective applicant said that it was seeking to have a meeting with the NPWS. The Board noted that, according to the current draft layout for the site, the Longford Pass site is not currently proposed for any turbines. The prospective applicant noted certain constraints with regard to this site and said that turbines may yet be sited there, but it would have to have regard to constraints with respect to this site.

The Board also advised that a shape file would be very useful with regard to matters such as environmental sensitivity mapping.

The Board enquired as to whether there was any update on the permitted casino in the vicinity; the prospective applicant replied that it has engaged with the landowners and noted that the planning consent for this is due to expire sometime in 2023.

With respect to the Littleton Labyrinth project by the local authority, the prospective applicant said that it has engaged with the local authority in relation to this. The prospective applicant said that the local authority is seeking to bring the project forward and is aware of the instant proposed development with regard to this (matters such as interconnections between the projects).

The prospective applicant said that it is engaging with the EPA with respect to the project. With regard to third parties, the prospective applicant said that feedback has been positive generally; some concerns have been raised with respect to proposed heights of the turbines and visual impacts arising from the proposed development generally. The prospective applicant noted public amenities to be provided such as walkways and public access paths.

With regard to the matter of substitute consent, the prospective applicant said that the relevant application is imminent (for historical peat extraction in relation to the subject site).

Conclusion:

The record of the instant meeting will issue shortly and it will then be open to the prospective applicant to request a further meeting or formal closure of the pre-application consultation process. The prospective applicant indicated that it may seek a further meeting prior to the closure of the pre-application process. The Board said that this can be facilitated.

The meeting concluded at 11.55 a.m.

Ciara Kellett 16/2/22

Ciara Kellett

Assistant Director of Planning

APPENDIX 2.5

NPWS Consultation

An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

Our Ref: G Pre00244/2021
Your Ref: P20-211 Wind Farm
(Please quote in all related correspondence)

2 November 2021

Fehily Timoney and Company
J5 Plaza
North Park Business Park
North Road
Dublin 11

Via email: littletonwindfarm@ftco.ie

Pre Planning: Bord na Móna Powergen Ltdintend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm; East County Tipperary, near the town of Littleton

A chara

I refer to initial letter received 17th September 2021 in connection with the above pre-plannning consulatation.

Outlined below are heritage-related observations/recommendations co-ordinated by the Development Applications Unit under the stated headings

Nature Conservation

The Department notes the detailed scoping document provided which sets out the key issues to be considered in the EIAR. As an initial response to your consultation, you are advised to consult the 'Planning' section of the NPWS website - https://www.npws.ie/development-consultations - as this contains text/advice on consulting NPWS in relation to 'development applications', data and information sources, and the basic elements of environmental assessments that may be required.

The following scoping comments are made in the context of this Department's role in relation to nature conservation. The observations are intended to assist you in relation to identifying potential impacts on European sites, other nature conservation sites, and biodiversity and environmental protection in general, in the context of the current proposal. Data collected and surveys carried out in connection with this proposed development may raise other issues that have not been considered here. The observations are not

exhaustive and are made without prejudice to any recommendation that may be made by this Department in the future.

The proposed development site consists of peatland and there are many factors to consider in the siting of large scale wind farm development onto peatland and cutaway/cutover peatland to ensure the objectives of the Habitats Directives 92/42/EEC, the Birds Directive 2009/147/EC, the National Biodiversity Action Plan 2015-2021 and the Biodiversity Climate Change Sectoral Adaptation Plan 2019 can be achieved. Questions to consider are:

- Are there existing proposals for rehabilitation including rewetting of the site and will this be compatible with a wind farm development?
- The Department notes that a scoping request was previously submitted relating to this area for the establishment of native woodland. How would the current proposal interact with that proposal?
- Are there existing habitats and species of high biodiversity value and will these be lost due to the wind farm development?
- Does the site have potential strategic ecological value if managed for wildlife which cannot be delivered if developed for wind energy?
- Will development at the site pose significant anthropogenic disturbance to wildlife?
- What is the most appropriate use of the site to ensure reduced carbon emissions? (E.g. wind farm development, rehabilitation/rewetting or 'do nothing scenario'?). The Department notes that rewetting is the established way to significantly reduce carbon emissions from peatland, if the wind farm is constructed how would this impact attempts to reduce carbon emissions through rewetting?
- How will the lands around the wind farm be managed and will this lead to likely significant environmental consequences? (E.g. increase in wildlife activity at the site leading to increase collision strike risks, increase in anthropogenic disturbance due to amenity access etc.)
- What are the drainage requirements at the site and will this lead to water quality issues?
- What are the long term plans for the rehabilitation of the peatlands following decommissioning of the wind farm?
- The area near Liathmore Churches adjoining the Longford Pass area is known to be used by a significant flock of the Annex I bird species Whooper Swan. How would the development impact on this species?

The EIAR should take account of Objective 1 of the National Biodiversity Action Plan which is to mainstream biodiversity into decision-making across all sectors and Action 1.1.3 is that

"*all public authorities and private sector bodies move towards no net loss of biodiversity through strategies, planning, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure*". In this context this Department would suggest that any loss of habitat if it is to proceed should be mitigated for by the provision or enhancement of habitat elsewhere. The EIAR should also consider Article 10 of the EU Habitats Directive insofar as it relates to features which function as stepping stones for wild species in the landscape.

Please find below some general scoping comments for EIAR, appropriate assessment screening and appropriate assessment/NIS, and for licensing requirements which may assist.

Guidance on EIAR

You are advised to consult the European Commission's (2017) 'Environmental Impact Assessment: Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)'. Any surveys and assessments should be based on a full details of the overall project, noting all lands that will be required. For a detailed list of potential considerations, see the 'Review checklist', and specifically 'Section 1 – Description of the project', in this guidance. Note also that if compensatory afforestation is required on other lands, the likely significant effects of that integral element of the development should be assessed in the main project EIAR.

The following should also be taken into account in planning and designing a wind farm and in completing the assessments. Please note the 2020 updates of the Guidance documents:

- *Guidance document on wind energy developments and EU nature legislation* (European Commission, **2020**)
- *Draft Revised Wind Energy Development Guidelines* (DoHLGH, **2020**), particularly the requirements in relation to assessing ground conditions/geology (section 5.3)
- *Landslides in Ireland* (GSI, 2006)[1].

Project planning and design

It should be remembered that a key element of EIA is the avoidance or reduction of negative effects on the environment. EIA is an iterative process and the information gathered through assessments or surveys should be used to guide the planning and design of the wind farm so that sensitive ecological or hydrological areas are avoided, and negative impacts are minimised insofar as is possible. The size, layout and design of the proposed development should be informed by a constraints-type study and the compilation of an environmental constraints map that identifies and avoids, insofar as is possible and

[1] Creighton, R. (ed.). 2006. *Landslides in Ireland: A Report of the Irish Landslide Working Group*. Geological Survey of Ireland, Dublin.

using appropriate separation distances, all nature conservation sites, other sensitive ecological and hydrological features, deep or intact peat deposits, and areas of wet and/or active bog, pool systems and flushes.

The National Biodiversity Action Plan 2017- 2021 aims to conserve and restore Ireland's biodiversity. A key objectives of the plan is to achieve; no net contribution to biodiversity loss arising from development projects occurring within the lifetime of the plan. Accordingly, the EIAR should outline how this project will avoid a net loss of biodiversity and include relevant mitigation and or compensatory measures where necessary.

Project components

In general, the EIAR should include sufficient project details so that the full nature and extent of the likely significant effects are clear and assessed fully in relation to, among other things, road design and construction methodology; site drainage details, including settlement ponds; temporary and permanent storage or disposal areas for peat and other materials or wastes arising; extraction sites/borrow pits; and any modifications to roads, bridges or culverts along the entire length of haul routes. Volumes of surplus material arising and of fill required should be calculated. Due consideration should also be given to the grid connection.

The Department notes that the location map indicates the site may include areas of peatland and areas under coniferous forest cover. The EIAR should give specific consideration to the mobilisation of silt and changes to the stability of peat. The proposed windfarm has the potential for significant changes in patterns of surface water flow and may desiccate the peat allowing pathways to open up resulting in subsurface water losses. Detailed consideration should be given to the amount of peat to be excavated, stored, and disposed/recovered. A detailed plan for the safe storage, disposal and rehabilitation of excavated or disturbed peat should form part of the EIAR. The spreading or recovery of excavated peat on areas of intact bog, wet and re-vegetated areas of cutover bog or other habitats or vegetation of ecological value is unlikely to be acceptable. Excavated or exposed peat should not pose any threat to surface waters and water quality. Any proposals to combine peat disposal with habitat restoration or rehabilitation measures will require a detailed plan to show the location, nature and area of lands in question, and provide details of how such areas will be reinstated, managed and improved for habitats and/or species, together with proposals for monitoring and reporting. This plan should be prepared by a suitably qualified ecologist in consultation with hydrologists and other experts as appropriate.

A detailed site drainage map will be required and should show all existing watercourses, drainage ditches, flushes, lakes or ponds; new drainage ditches; all outfall points to watercourses or lakes; and all settlement ponds. The EIAR must demonstrate that the proposed wind farm development will not pose any threat to surface waters and associated species (e.g. Salmon). Any impact on water table levels or groundwater flows may impact on wetland sites some distance away. The EIAR should assess cumulative impacts with

other plans or projects. Where negative impacts are identified suitable mitigation measures should be detailed as appropriate.

The associated impacts of quarrying or extraction should be included among the considerations at the earliest stages of project planning and design, and should be assessed fully in the EIAR. Reinstatement or restoration plans will be required for any quarries or borrow pits on-site and should be included in the EIAR. As with any other part of the development, all borrow pits (existing or proposed) to be used in construction should be included within the application area for the proposed development.

Any tree felling of forested sites should be included as an intrinsic element of the overall development, the impacts and implications of which should be assessed fully in the EIAR. The extent of tree felling should be mapped, and the future use and management of all cleared areas should be specified. The impacts of tree felling on wildlife, habitats and surface waters (e.g. water quality) should be assessed fully, including the risk of Phosphate mobilisation from peat soils as a result of tree clearance and ground disturbance.

Tree felling is licensed and regulated by the Forest Service; any additional requirements in respect of this element of the proposed development, including any obligations to replant on other lands, should be made known at the planning application stage, and assessed as part of the EIAR as appropriate. If restoration of planted areas is proposed as mitigation or compensation for negative ecological effects, the EIAR should include a detailed plan to show the location, nature and area of habitat to be reinstated, and provide details of how such areas will be reinstated, managed and improved for habitats and/or species, together with proposals for monitoring and reporting. This plan should be prepared by a suitably qualified ecologist in consultation with other experts as appropriate. Consideration should be given within this context of no net loss to biodiversity and with that opportunities for establishment of native woodland as replacement planting rather than coniferous planting.

The likely impacts of grid connection, particularly for birds, sensitive habitats and surface waters, should be given due consideration at the EIA stage.

Any improvement or reinforcement works required for access and transport anywhere along the proposed haul route(s) should be included in the EIAR and subjected to ecological impact assessment with the inclusion of mitigation measures, as appropriate.

Any losses of biodiversity habitat associated with this proposed development (including access roads and cabling etc.) such as woodland, scrub, hedgerows and other habitats should be mitigated for. In addition, Annex 1 habitats which occur outside the Natura 2000 network are important in terms of biodiversity conservation. The presence of any Annex I habitats outside the network should be given due consideration as part of the consideration of biodiversity matters generally for the proposed development. The loss of Annex 1 habitats outside SACs should be avoided wherever possible.

Impacts of lighting on-site should also be assessed noting that lighting of turbines and masts can increase collision risk[2].

Alternative options for the site should also be included in the EIAR and this should include the opportunities for habitat restoration, and to manage the site as a carbon sink through restoration and rehabilitation. This aligns with the National Peatlands Strategy 2015 to 2025 and is notable with respect to carbon accounting. The projected carbon accounts for habitat restoration should be considered against the carbon accounting for the proposed wind farm. It should also be noted that habitat restoration would not only contribute to carbon sequestration but is also important in terms of flood management, water quality and for biodiversity in general.

Ecological Data and Surveys

Along with the standard NPWS data requests which is recommended, other sources of habitat and species information beyond those already identified include (but are not be limited to): the National Biodiversity Data Centre (www.biodiversityireland.ie), Inland Fisheries Ireland (www.fisheriesireland.ie), BirdWatch Ireland (www.birdwatchireland.ie), Irish Raptor Study Group, Golden Eagle Trust and Bat Conservation Ireland (www.batconservationlreland.org).

It is expected by this Department that best practice will be adhered to with regard to survey methodology and if necessary non Irish methodology adapted for the Irish situation, noting specific gaps in relation to species and age of the data outlined in some guidance documents. The EIAR should cover the whole project, including construction, operation and, if applicable, restoration or decommissioning phases. Inland Fisheries Ireland should be consulted with regard to fish species, if applicable. For information on Geological and Geomorphological sites, the Geological Survey of Ireland, should be consulted.

Where ex-situ impacts are possible, survey work may be required, outside of the development sites. Such surveys should be carried out by suitably qualified persons at an appropriate time of the year, depending on the species being surveyed for. The EIAR should include the results of the surveys and detail the survey methodology and timing of such surveys including consistency in terms of timed vantage point surveys.

Ornithology

Surveys for all species should cover bird usage and facilitate assessment of potential collision risk, habitat loss, barrier effect and displacement for these species and should be based around the daily and seasonal activity patterns of the species being surveyed. Survey work should cover year-round site use and should cover a minimum of two years to allow for an accurate determination of site usage. Target species for this site include Annex I (Birds Directive) species and Birds of Conservation Concern (BoCCI) such as Hen

[2] Douse, A (2020) "The Effect of Aviation Obstruction Lighting on Birds at Wind Turbines, Communication Towers and Other Structures", NatureScot Information Note. Version1.1

Harrier, Merlin, and Red Grouse. Hinterland surveys should include breeding raptor surveys, including roost watches, surveys for nocturnal species and other species-specific surveys as appropriate.

Vantage point surveys should be done in a manner that ensures sufficient data is collected to allow an assessment of the importance of all the flight paths into, out of and between sites and assess migratory movements. Consequently, the Department recommends that a visibility analysis of topography and vegetation is used in the selection of vantage points for ornithological surveys. Technological solutions should also be considered in conjunction with VPs surveys to ensure sufficient data is compiled for assessment.

Results for species need to be referenced back to the overall populations and their dynamics as, in some cases even a small risk to a population of a species could be considered significant.

When completing impact assessment for birds, assessment and monitoring results from nearby wind farms must be considered. Cumulative impact on birds from all wind farms in the area needs to be assessed and the data from surrounding sites needs to be considered in the assessment.

Bats

Bat roosts may be present in trees, buildings and bridges. Bat species are protected under the Wildlife Act, 1976 to 2018, and are subject to a regime of strict protection pursuant to the requirements of the Habitats Directive (92/43/EEC) as transposed in Irish law in Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended). Therefore, damage/disturbance to any such roosts must be avoided in the first instance. While the Minister may grant a derogation licence under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011-2015, a licence can only be granted once a number of strict criteria have been met (see Regulation 54). An assessment of the impact of the proposed wind farm on bat species should be carried out noting recent guidance available, "*Bat and Onshore Wind Turbines: Survey, Assessment and Mitigation, 2019"* published jointly by Scottish Natural Heritage and Bat Conservation Trust and other stakeholders.

Watercourses and wetlands

Wetlands are important areas for biodiversity and ground and surface water quality should be protected during construction and operation of the proposed development. The EIAR should include a detailed assessment of the hydrological impacts on wetlands from the proposed development. Any watercourse or wetland which may be impacted on should be surveyed for the presence of protected species and species listed on Annexes II and IV of the Habitats Directive. For example, these species could include Otter (*Lutra lutra*) which are protected under the Wildlife Acts and listed on Annex II and IV of the Habitats Directive, Salmon (*Salmo salar*), Lamprey (three species in Ireland), White-clawed Crayfish (*Austropotamobius pallipes*) listed on Annex II of the Habitats Directive, Frogs (*Rana*

temporaria) and Newts (*Trituris vulgaris*) protected under the Wildlife Acts and Kingfishers (*Alcedo atthis*) protected under the Wildlife Acts and listed on Annex I of the Birds Directive (Council Directive 79/409 EEC).

Hedgerows, Scrub and related habitats

Hedgerows and scrub should be maintained where possible, as they form wildlife corridors and provide areas for birds to nest in; hedgerows provide a habitat for woodland flora, roosting places for bats and Badger setts may also be present. The EIAR should provide an estimate of the length/area of any hedgerow/scrub that will be removed. Where it is proposed that trees or hedgerows will be removed there should be suitable planting of native species in mitigation incorporated into the EIAR. Hedgerows, trees, scrub and uncultivated vegetation (including peatland habitats) should not be removed during the nesting season (i.e. March 1st to August 31st), noting the protection afforded under the Wildlife Act 1976-2018.

Marsh Fritillary

Marsh fritillary surveys should be carried out as per standard Marsh Fritillary Larval Web Survey methodology.

Alien invasive species

The EIAR should also address the issue of invasive alien plant and animal species such as *Rhododendron ponticuum* and Japanese Knotweed, and detail the methods required to ensure they are not accidentally introduced or spread during survey and or construction. Information on alien Invasive species In Ireland can be found at http://invasives.biodiversityireland.ie/ and at http://invasivespeciesireland.com/.

Impact assessment

The impact of the proposed development on the flora/ fauna and habitats present should be assessed with particular regard to:

- Special Areas of Conservation (SAC) designated under the EC Habitats Directive (Council Directive 92/43/EEC)
- Special Protection Areas (SPA) designated under the EC Birds Directive (Council Directive 2009/147 EC);
- proposed Natural Heritage Areas;
- species protected under the Wildlife Acts including protected flora;

'Protected species and natural habitats', as defined in the Environmental Liability Directive (2004/35/EC) and European Communities (Environmental Liability) Regulations, 2008 including

- Birds Directive - Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur);
- Habitats Directive - Annex I habitats, Annex II species and their habitats;
- Annex IV species and their breeding sites and resting places (wherever they occur);
- important bird areas such as those identified by Birdlife International, features of the landscape which are of major importance for wild flora and fauna, such as those with a "stepping stone" and ecological corridors function, as referenced in Article 10 of the Habitats Directive;
- other habitats of ecological value in a national to local context (such as those identified as locally important biodiversity areas within Local Biodiversity Action Plans and County Development Plans);
- Red data book species;
- Biodiversity in general.

Construction Management Plans and Mitigation

Complete project details including Construction Management Plans (CMPs) need to be provided in order to allow an adequate EIAR and appropriate assessment to be undertaken. CMPS should contain sufficient detail to avoid any post construction doubt with regard to the implementation of mitigation measures, timings and roles and responsibilities for same. Any mitigation needs to be included in detail and if being relied upon to reach conclusions must be proved to be achievable and likely to be effective in any given scenario it is needed. Proof of effectiveness will be required with examples of where similar techniques have been employed previously.

Applicants need to be able to demonstrate that CMPs and other such plans are adequate, all mitigation is included and effective and supported by scientific information and analysis and that they are feasible within the physical constraints of the site. The positions, locations and sizes of construction infrastructure and mitigation such as settlement ponds, disposal sites and construction compounds may significantly affect European and other designated sites, habitats and species in their own right and could have an effect for example on, drainage, water quality, habitat loss, and disturbance. If these are undetermined at time of the assessment all potential effects of the development on the site are not being considered.

Construction work should not be allowed to impact on water quality and measures should be detailed in the EIAR to prevent sediment and/or fuel runoff from getting into watercourses which could adversely impact on aquatic species.

Inland Fisheries Ireland (IFI) should be consulted with regard to impacts on fish species and the applicant may find it useful to consult their publication entitled "Planning for watercourses in the urban environment" (2020) which can be downloaded from their web site.

If applicants are not in a position to state the exact location and details of cable routes at the time of application, then they need to consider the range of options (overhead and underground) that may be used within their assessment.

The Department draws your attention to the recent High Court decision with respect to the High Court judicial review Sweetman V An Bord Pleanála (2021) IEHC 390 and the appropriate detail of project description required for an EIA.

Guidance on the Appropriate Assessment (AA):

In order to carry out the Appropriate Assessment screening, and/or prepare a Natura Impact Statement (NIS), information about the relevant European sites including their conservation objectives will need to be collected.

Screening for appropriate assessment should focus on the likely significant effects of the proposed development and related activities on European sites noting that impacts to sites via air and water may occur over large distances using the source-pathway-receptor model. Details of designated sites and species and conservation objectives can be found on http://www.npws.ie/ .

In addition, the Article 12 and 17 reports under the Birds and Habitats Directives should be referenced https://www.npws.ie/publications. The Departmental guidance document on Appropriate Assessment is available on the NPWS website at https://www.npws.ie/development-consultations and in EU Commission guidance entitled:

- "*Wind energy developments and Natura 2000*"[3]
- "*Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*"[4];
- 2018 Commission notice "*Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*"[5] (updated June 2020)

More recent CJEU and Irish case law has clarified some issues and should also be consulted.

[3] https://ec.europa.eu/environment/nature/natura2000/management/docs/Wind_farms.pdf

[4] http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf

[5] https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/EN_art_6_guide_jun_2019.pdf

The NIS should present a robust and reasoned scientific assessment and analysis of the implications of the proposals for the relevant conservation objectives of relevant European sites. Best scientific knowledge in the field should be applied to the understanding of the likely effects, and to the assessment and analysis of the implications of the proposals for the conservation objectives and integrity of the sites. When carried out by the competent authority, the appropriate assessment cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the project on European sites.

Cumulative and ex situ impacts

A rule of thumb often used is to include all European sites within a distance of 15km. It should be noted however that this will not always be appropriate. In some instances where there are hydrological connections a whole river catchment or a groundwater aquifer may need to be included. Similarly where bird flight paths are involved the impact may be on an SPA more than 15 kilometres away.

Other relevant Local Authorities should be consulted to determine if there are any projects or plans which, in combination with this proposed development, could impact on any European sites.

As noted already assessment and monitoring results from nearby wind farms should be considered. Cumulative impact from all wind farms in the area needs to be assessed and the data from surrounding sites needs to be considered in the assessment of impacts.

Post construction monitoring

This Department recognises the importance of pre and post construction monitoring, such as recommended in Drewitt et al. (2006), and Bat Conservation Ireland (2012). The applicant should not use any proposed post construction monitoring as mitigation to supplement inadequate information in the assessment. Please refer to Circular Letter PD 2/07 and NPWS 1/07 on this issue. This can be downloaded from the Department's website https://www.npws.ie/development-consultations .

The EIAR process should identify any pre and post construction monitoring which should be carried out. The post construction motoring should include bird and bat strikes/fatalities including the impact on any such results of the removal of carcasses by scavengers. Monitoring results should be made available to the competent authority and copied to this Department. An appropriate plan of action needs to be agreed at planning stage with the Planning Authority if the results in future show a significant mortality of birds and/or bat species. It is important to note that unless post decision consultation with NPWS is specifically stated as a condition of planning, NPWS has no post consent role. However, regional staff are available for liaison regarding any associated licencing requirements and or new information arising for specific species of concern.

Note: any significant change to mitigation may require amendment and where a licence has expired; there will be a need for new licence applications for protected species.

Licenses

Where there are impacts on protected species and their habitats, resting or breeding places, licenses may be required under the Wildlife Act 1976-2018 or derogations under the EC (Birds and Natural Habitats) Regulations 2011, as amended.

In particular, bats as outlined earlier and otters, are subject to a regime of strict protection pursuant to the requirements of the Habitats Directive (92/43/EEC) as transposed in Irish law in Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended). A copy of Circular Letter NPWS 2/07 entitled "*Guidance on Compliance with Regulation 23 of the Habitats Regulations 1997 – strict protection of certain species/applications for derogation licences*" can be found on the Departmental web site at www.npws.ie/sites/default/files/general/circular-npws-02-07.pdf. It should be noted that the Regulations of 1997 have since been superseded by the European Communities (Birds and Natural Habitats) Regulations 2011, as amended. Part 6 of those Regulations is now the relevant section dealing with the protection of flora and fauna. Reference to Regulation 23 in the circular letter should be taken to mean Regulation 51 in the current Regulations.

In addition, the EIAR should take account of species protected under sections 21, 22 and 23 of the Wildlife Acts if there are any impacts on other protected species or their resting or breeding places, such as on protected plants, badger setts or birds' nests. The EIAR will also need to be cognisant of article 5 (d) of the Birds Directive. For that reason uncultivated vegetation, including hedges and trees, should not be removed during the nesting season (i.e. March 1st to August 31st).

In order to apply for any such licenses or derogations as mentioned above the results of a survey should be submitted to the National Parks and Wildlife Service of this Department. Such surveys are to be carried out by appropriately qualified person/s at an appropriate time of the year. Details of survey methodology should be provided. Should this survey work take place well before construction commences, it is recommended that an additional ecological survey of the development site should take place immediately prior to construction to ensure no significant change in the findings of the baseline ecological survey has occurred. As outlined already, if there has been any significant change mitigation, this may require amendment and where a licence has expired, there will be a need for new licence applications for the protected species.

The above observations/recommendations are based on the papers submitted to this Department on a pre-planning basis and are made without prejudice to any observations that the Minister may make in the context of any consultation arising on foot of any development application referred to the Minister, by the planning authority/ies, in the role as statutory consultee under the Planning and Development Act, 2000, as amended.

You are requested to send further communications to the Development Applications Unit (DAU) at **manager.dau@housing.gov.ie**.

Is mise le meas**,**



Diarmuid Buttimer
Development Applications Unit
Administration

FEHILY TIMONEY

DESIGNING AND DELIVERING A SUSTAINABLE FUTURE

MEETING MINUTES: Littleton NPWS Technical Consultation

Location: Microsoft Teams Meeting

Date: 12/02/2026 14:00 – 15:00

Attendees	Initials
Ben O'Dwyer (FT)	BOD
Trevor Byrne (FT)	TB
Rita Mansfield (FT)	RM
Laura Burke (SSE)	LB
Helen Burman-Roy (SSE)	HBR
Caroline Donnolly (SSE)	CD
Muriel Ennis (BnM)	ME
Chris Cullen (BnM)	CC
Julie O'Sullivan (BnM)	JOS
Eoin Connolly (DAU)	EC
Kathryn Freeman (NPWS)	KF
Apologies	
Conor Auld (FT)	CA

No.	Note	Action, Note or Initials of Owner/All
1.0	Introduction	
1.1	Introductions between attendees.	Note
2.0	TDR	
2.1	3 nodes with tree trimming or activity	Note
3.0	Curlew	
3.1	EC asked for the applicant to consider impact on *local* population on Curlew. NPWS asked FT to contextualise that Collision Risk.	Note

	EC noted known breeding pair in the area. NPWS receptive to inclusion of measures such as habitat management, predator management to help offset any potential curlew collision fatalities. Noted we can't use any existing wader management as mitigation/offset measures – needs to be new/unique, implemented specifically for the WF project. FT agreed to follow NPWS advice on Curlew population dynamics. Agreed management measures for this breeding pair incl. predator control is worth pursuing if we can demonstrate it reduces mortality. Reasonable that those works can demonstrate it offset Collision Mortality would be better than habitat management.	
4.0	Monitoring proposal Curlew and Hen Harrier	
4.1	Request robust Curlew and Hen Harrier on-going monitoring protocol in addition to mortality / carcass searches due to the changing site usage. Mentioned automated AI driven bird detection systems which can shut down turbines when risk of bird strike is detected, but also noted their deployment in Ireland may still be a few years off, and also that their most effective use may be to prevent bird collisions in areas where large raptors regularly soar and circle. Have looked at this before when researching collision mitigation, think there are some European providers now as well, may be in use in Greece already. Machine learning – would be better than turning off for the breeding season. Could be used across all projects. Task for ACP for their EIA. Can facilitate cameras / infrared to be put on site. Contextualise the timing of collision risk – fledgling is more susceptible than adults to this.	Note Note Note
5.0	Amenity Trails	
5.1	Noted that operational mitigation for the amenity trails will possibly need to include closure of the trails during breeding. Dependent on location of breeding sites, and as such would have to be informed by monitoring. Monitoring the effects of the amenity trails will also be required to check what other effects they may have, and to confirm the effectiveness of any barriers, screening fencing etc. installed. EC mentioned we would need to identify desire lines, paths of desire where people could potentially stray from the amenity trails with potential effects on wader/waterbird areas. This would need to be looked at during the planning stage, but behaviour of recreational users would also need to be monitored to allow adaptive responses during operation.	Note Note Note
6.0	Ecological Enhancement	
6.1	Main northern Peat Deposition Area (PDA) in Littleton Bog will be managed as an ecological enhancement. Only one PDA would be enhanced and the decommissioning can potentially use reinstatement material from non-enhanced PDA's.	Note

7.0	Raised Bog	
7.1	Noted that use of Acrotelm capacity model might help to confirm whether the area of raised bog near the proposed northern access track is capable of regeneration (and therefore Annex I 7120), but FT may have enough data from field surveys to assess this without use of the Acrotelm model anyway.	Note
8.0	AOB	
8.1	NPWS survey data is scarce or not recently uploaded; only has a view of 2023 data on a map. NPWS encouraged FT to refresh our data request to NPWS in case more recent data is available.	Note

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CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Development Applications Unit
Department of Housing, Local Government and Heritage
Newtown Road
Wexford
Y35 AP90

By email:
manager.dau@npws.gov.ie
manager.dau@housing.gov.ie

Our Ref: P20-211/Let001/BOD

22 November 2023

RE: Consultation Request - Littleton Wind Farm, Co. Tipperary

Dear Sir / Madam,

Fehily Timoney and Company are acting on behalf of our client, Bord Na Móna, in relation to a proposed wind farm development at Littleton, Co. Tipperary.

We previously received a response to a pre-planning scoping document issued in the early stages of the project (response **G Pre00244/2021** dated 2 November 2021).

We are following up with more detailed project information and information on ecological surveys completed/ongoing to check if there are any further nature conservation observations in light of current project information. Any further feedback received will inform the EIAR and AA/NIS, which are currently in preparation.

The proposal includes the following:

- A wind farm consisting 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m.
- Construction of turbine foundations and crane pad hardstanding areas including associated drainage infrastructure;
- Construction of new permanent site tracks and associated drainage infrastructure;
- Upgrading of existing tracks and associated drainage infrastructure;
- Upgrade of existing site entrances for construction and operational access;
- An on-site borrow pit and associated ancillary drainage;
- Temporary construction site compounds and associated ancillary infrastructure including parking;
- 1 no. permanent meteorological mast(s) to a height of 100 m above ground level.
- 1 no. onsite 110kV electrical substation to Eirgrid specifications.
- Tree felling to facilitate construction and operation of the proposed development.
- High Voltage (110kV) electrical cabling within public roads to facilitate a proposed connection to the national transmission grid network at Ballyragget, Co. Kilkenny.

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- Installation of medium voltage underground electrical and communication cabling connecting the wind turbines to the proposed on-site substation and associated ancillary works;
- Temporary accommodation works to facilitate the delivery of wind turbine components.
- A recreational amenity in the form of walking trails within the wind farm site making use of existing and proposed tracks and associated car parking facilities.
- Biodiversity enhancements within the wind farm site.
- All related site works and ancillary development including landscaping and drainage;
- A 35 year operational life from the date of commissioning of the entire wind farm is being sought.

Please find attached a figure illustrating the location of the wind farm, the turbine layout, and European sites in proximity to the proposed development. Ecological surveys are on-going at the site and include:

- Habitat surveys
- Invasive species surveys
- Mammal surveys
- Bat surveys
- Ornithological surveys
- Aquatic surveys
- Marsh fritillary surveys

FT will be preparing the Biodiversity and Ornithology chapters of the EIAR and the Natura Impact Statement for the development.

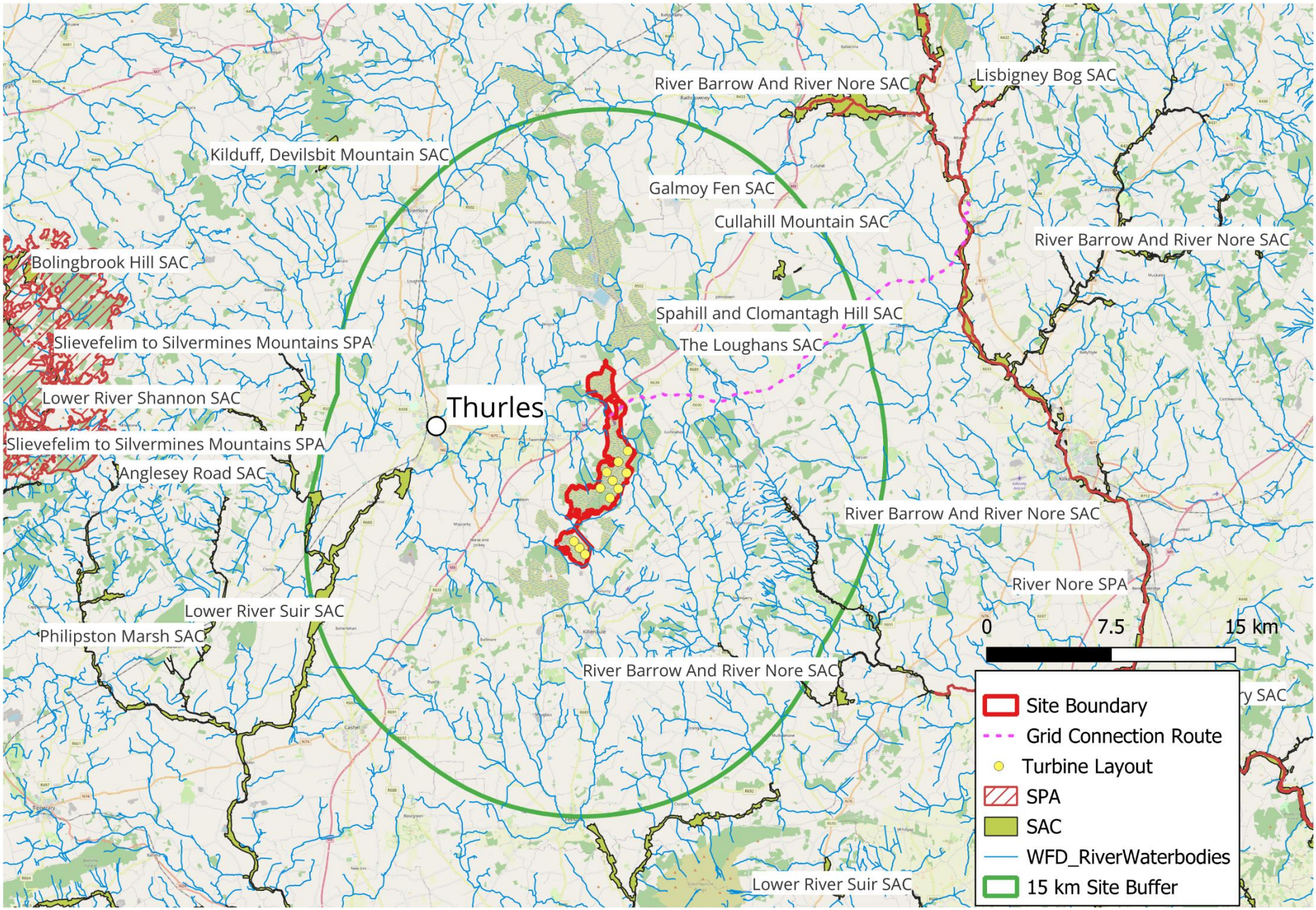
Please do not hesitate to contact me if you have further queries. We would welcome any comments or observations you may have regarding the proposed development or if you would like to meet to discuss the development in more detail, this can be arranged.

Yours faithfully,

Ben O'Dwyer BSc.

Senior Project Ecologist

for and on behalf of Fehily Timoney and Company


River Barrow And River Nore SAC
Lisbigney Bog SAC
Kilduff, Devilsbit Mountain SAC
Galmoy Fen SAC
Cullahill Mountain SAC
River Barrow And River Nore SAC
Bolingbrook Hill SAC
Spahill and Clomantagh Hill SAC
The Loughans SAC
Slievefelim to Silvermines Mountains SPA
Thurles
Lower River Shannon SAC
Slievefelim to Silvermines Mountains SPA
Anglesey Road SAC
River Barrow And River Nore SAC
River Nore SPA
Lower River Suir SAC
Philipston Marsh SAC
River Barrow And River Nore SAC
Lower River Suir SAC
0
7.5
15 km
Site Boundary
Grid Connection Route
Turbine Layout
SPA
SAC
WFD_RiverWaterbodies
15 km Site Buffer

Development Applications Unit
Department of Housing, Local Government and Heritage
Newtown Road
Wexford
Y35 AP90
By email:

manager.dau@npws.gov.ie
manager.dau@housing.gov.ie

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DESIGNING AND DELIVERING A SUSTAINABLE FUTURE

Our Ref: P20-211-FT-XX-XX-LT-PL-0002

15 December 2025

Re: Proposed Wind Farm - Littleton Wind Farm, Co. Tipperary

Fehily Timoney and Company are acting on behalf of our client, Littleton Wind Farm DAC (part of a 50:50 joint venture between BnM and SSE Renewables), in relation to a proposed wind farm development at Littleton, Co. Tipperary.

We previously received a response to a pre-planning EIA scoping document issued in the early stages of the project (response G Pre00244/2021 dated 2 November 2021) (see Appendix 1), and subsequently produced an updated Scoping Document for consultation detailing an updated design and full survey suite on 22 November 2023. The response to this updated consultation request (received 22 November 2023) directed back to the original response G Pre00244/2021, noting that the Department was not in a position to make further comments at that point. A further scoping request was issued on 8 May 2025, with no response received.

Notwithstanding the detailed response contained within G Pre00244/2021 and subsequent referral to the original submission, we would welcome an opportunity to meet with the NPWS to discuss the project and present how the design has evolved, surveys taken to date and proposed biodiversity enhancements. We are intending to submit the application to An Coimisiún Pleanála in early March 2026, so if a meeting could be facilitated in January 2026 at the latest this would be much appreciated.

The project description includes the following:

- A 10-year permission and a 35-year operational life from the date of commissioning of a Proposed Wind Farm;
- Construction of 11 no. wind turbines with a blade tip height of 200 m, a hub height of 119 m and a rotor diameter of 162 m;
- Construction of permanent turbine foundations and crane pad hard standing and assembly areas including associated drainage infrastructure;
- Construction of 15.44 km of new internal access tracks and associated drainage infrastructure;
- Upgrading of 2.95 km existing tracks and associated drainage infrastructure;
- Creation of 3 no. new site accesses (2 no. on the Local Road L4114 and 1 no. on the Regional Road R639) to serve as construction and operation accesses to the Proposed Wind Farm Site;
- Upgrading of 3 no. existing site entrances (1 no. on the L2201 and 2 no. on the Local Road L4153) to serve as construction and operation accesses to the Proposed Wind Farm Site;

- Installation of new pipe and box culverts within the wind farm site where proposed infrastructure crosses existing drains;
- All associated drainage and sediment control including interceptor drains, cross drains, sediment ponds and swales;
- Development of 1 no. on-site construction borrow pit and associated ancillary drainage;
- 5 no. temporary construction site compounds and associated ancillary infrastructure including parking; 1 no. temporary security cabins .
- Erection of 1 no. permanent meteorological mast to a height of 120 m above ground level;
- Construction of 1 no. permanent onsite 110 kV electrical substation to EirGrid specifications, including an associated compound and ancillary infrastructure comprising:
    - Control buildings, equipment storage and welfare facilities;
    - Electrical infrastructure;
    - EV Parking and charging;
    - Wastewater holding tank;
    - Rainwater harvesting tank;
- Telecommunications tower to a height of 36m and associated fencing, foundation and hard-standing area
    - Lightning masts and lighting poles
    - Security fencing and stock proof fencing.
- Installation of medium voltage underground electrical and communication cabling connecting the wind turbines to the proposed on-site substation and associated ancillary works;
- All associated infrastructure, services and site works including excavation, earthworks, peat and spoil management;
- Creation of dedicated peat and spoil deposition areas and berms for the management of peat and spoil within the Site;
- Vegetation clearance to facilitate construction and operation of the proposed development;
- Temporary accommodation works along the Proposed Turbine Delivery Route to facilitate turbine component deliveries;
- Construction of 3.95 km of a new recreational amenity in the form of walking/cycling trails within the Wind Farm Site and existing and proposed associated car parks;
- Biodiversity enhancements measures within the Proposed Biodiversity Enhancement and Management Plan all of which are contained within the Wind Farm Site.

Whilst consent is not being sought for the proposed grid connection route to facilitate a connection to the national transmission grid network at Ballyragget, Co. Kilkenny, it is assessed as part of the EIAR.

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A full suite of ecological surveys have been completed, encompassing the below surveys which align with the survey scope detailed in G Pre00244/2021:

- Habitat & botanical surveys
- Invasive species survey
- Mammal surveys
- Bat surveys
- Ornithological surveys
- Aquatic ecology surveys
- Otter survey
- Marsh fritillary survey
- General Ecological walkover survey

FT will be preparing the Biodiversity and Ornithology chapters of the EIAR, the Biodiversity Enhancement and Management Plan and the Natura Impact Statement for the development. It is the client's intention that we will be lodging this application to ACP in early March 2026.

Please do not hesitate to contact us at if you have further queries. We would welcome the opportunity to meet to present the proposed development in more detail in January 2026, ahead of finalising the EIAR and submitting the planning application to An Coimisiún Pleanála.

Please see figures illustrating the location of the proposed wind farm and grid connection route in Appendix 2.

Yours sincerely,

Conor Auld
for and on behalf of Fehily Timoney and Company

FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

APPENDIX 1

Previous Correspondence

An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

Our Ref: G Pre00244/2021
Your Ref: P20-211 Wind Farm
(Please quote in all related correspondence)

2 November 2021

Fehily Timoney and Company
J5 Plaza
North Park Business Park
North Road
Dublin 11

Via email: littletonwindfarm@ftco.ie

Pre Planning: Bord na Móna Powergen Ltdintend to apply for planning permission for a renewable energy development referred to as the Littleton Wind Farm; East County Tipperary, near the town of Littleton

A chara

I refer to initial letter received 17th September 2021 in connection with the above pre-plannning consulatation.

Outlined below are heritage-related observations/recommendations co-ordinated by the Development Applications Unit under the stated headings

Nature Conservation

The Department notes the detailed scoping document provided which sets out the key issues to be considered in the EIAR. As an initial response to your consultation, you are advised to consult the 'Planning' section of the NPWS website - https://www.npws.ie/development-consultations - as this contains text/advice on consulting NPWS in relation to 'development applications', data and information sources, and the basic elements of environmental assessments that may be required.

The following scoping comments are made in the context of this Department's role in relation to nature conservation. The observations are intended to assist you in relation to identifying potential impacts on European sites, other nature conservation sites, and biodiversity and environmental protection in general, in the context of the current proposal. Data collected and surveys carried out in connection with this proposed development may raise other issues that have not been considered here. The observations are not

exhaustive and are made without prejudice to any recommendation that may be made by this Department in the future.

The proposed development site consists of peatland and there are many factors to consider in the siting of large scale wind farm development onto peatland and cutaway/cutover peatland to ensure the objectives of the Habitats Directives 92/42/EEC, the Birds Directive 2009/147/EC, the National Biodiversity Action Plan 2015-2021 and the Biodiversity Climate Change Sectoral Adaptation Plan 2019 can be achieved. Questions to consider are:

- Are there existing proposals for rehabilitation including rewetting of the site and will this be compatible with a wind farm development?
- The Department notes that a scoping request was previously submitted relating to this area for the establishment of native woodland. How would the current proposal interact with that proposal?
- Are there existing habitats and species of high biodiversity value and will these be lost due to the wind farm development?
- Does the site have potential strategic ecological value if managed for wildlife which cannot be delivered if developed for wind energy?
- Will development at the site pose significant anthropogenic disturbance to wildlife?
- What is the most appropriate use of the site to ensure reduced carbon emissions? (E.g. wind farm development, rehabilitation/rewetting or 'do nothing scenario'?). The Department notes that rewetting is the established way to significantly reduce carbon emissions from peatland, if the wind farm is constructed how would this impact attempts to reduce carbon emissions through rewetting?
- How will the lands around the wind farm be managed and will this lead to likely significant environmental consequences? (E.g. increase in wildlife activity at the site leading to increase collision strike risks, increase in anthropogenic disturbance due to amenity access etc.)
- What are the drainage requirements at the site and will this lead to water quality issues?
- What are the long term plans for the rehabilitation of the peatlands following decommissioning of the wind farm?
- The area near Liathmore Churches adjoining the Longford Pass area is known to be used by a significant flock of the Annex I bird species Whooper Swan. How would the development impact on this species?

The EIAR should take account of Objective 1 of the National Biodiversity Action Plan which is to mainstream biodiversity into decision-making across all sectors and Action 1.1.3 is that

"*all public authorities and private sector bodies move towards no net loss of biodiversity through strategies, planning, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure*". In this context this Department would suggest that any loss of habitat if it is to proceed should be mitigated for by the provision or enhancement of habitat elsewhere. The EIAR should also consider Article 10 of the EU Habitats Directive insofar as it relates to features which function as stepping stones for wild species in the landscape.

Please find below some general scoping comments for EIAR, appropriate assessment screening and appropriate assessment/NIS, and for licensing requirements which may assist.

Guidance on EIAR

You are advised to consult the European Commission's (2017) 'Environmental Impact Assessment: Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)'. Any surveys and assessments should be based on a full details of the overall project, noting all lands that will be required. For a detailed list of potential considerations, see the 'Review checklist', and specifically 'Section 1 – Description of the project', in this guidance. Note also that if compensatory afforestation is required on other lands, the likely significant effects of that integral element of the development should be assessed in the main project EIAR.

The following should also be taken into account in planning and designing a wind farm and in completing the assessments. Please note the 2020 updates of the Guidance documents:

- *Guidance document on wind energy developments and EU nature legislation* (European Commission, **2020**)
- *Draft Revised Wind Energy Development Guidelines* (DoHLGH, **2020**), particularly the requirements in relation to assessing ground conditions/geology (section 5.3)
- *Landslides in Ireland* (GSI, 2006)[1].

Project planning and design

It should be remembered that a key element of EIA is the avoidance or reduction of negative effects on the environment. EIA is an iterative process and the information gathered through assessments or surveys should be used to guide the planning and design of the wind farm so that sensitive ecological or hydrological areas are avoided, and negative impacts are minimised insofar as is possible. The size, layout and design of the proposed development should be informed by a constraints-type study and the compilation of an environmental constraints map that identifies and avoids, insofar as is possible and

[1] Creighton, R. (ed.). 2006. *Landslides in Ireland: A Report of the Irish Landslide Working Group*. Geological Survey of Ireland, Dublin.

using appropriate separation distances, all nature conservation sites, other sensitive ecological and hydrological features, deep or intact peat deposits, and areas of wet and/or active bog, pool systems and flushes.

The National Biodiversity Action Plan 2017- 2021 aims to conserve and restore Ireland's biodiversity. A key objectives of the plan is to achieve; no net contribution to biodiversity loss arising from development projects occurring within the lifetime of the plan. Accordingly, the EIAR should outline how this project will avoid a net loss of biodiversity and include relevant mitigation and or compensatory measures where necessary.

Project components

In general, the EIAR should include sufficient project details so that the full nature and extent of the likely significant effects are clear and assessed fully in relation to, among other things, road design and construction methodology; site drainage details, including settlement ponds; temporary and permanent storage or disposal areas for peat and other materials or wastes arising; extraction sites/borrow pits; and any modifications to roads, bridges or culverts along the entire length of haul routes. Volumes of surplus material arising and of fill required should be calculated. Due consideration should also be given to the grid connection.

The Department notes that the location map indicates the site may include areas of peatland and areas under coniferous forest cover. The EIAR should give specific consideration to the mobilisation of silt and changes to the stability of peat. The proposed windfarm has the potential for significant changes in patterns of surface water flow and may desiccate the peat allowing pathways to open up resulting in subsurface water losses. Detailed consideration should be given to the amount of peat to be excavated, stored, and disposed/recovered. A detailed plan for the safe storage, disposal and rehabilitation of excavated or disturbed peat should form part of the EIAR. The spreading or recovery of excavated peat on areas of intact bog, wet and re-vegetated areas of cutover bog or other habitats or vegetation of ecological value is unlikely to be acceptable. Excavated or exposed peat should not pose any threat to surface waters and water quality. Any proposals to combine peat disposal with habitat restoration or rehabilitation measures will require a detailed plan to show the location, nature and area of lands in question, and provide details of how such areas will be reinstated, managed and improved for habitats and/or species, together with proposals for monitoring and reporting. This plan should be prepared by a suitably qualified ecologist in consultation with hydrologists and other experts as appropriate.

A detailed site drainage map will be required and should show all existing watercourses, drainage ditches, flushes, lakes or ponds; new drainage ditches; all outfall points to watercourses or lakes; and all settlement ponds. The EIAR must demonstrate that the proposed wind farm development will not pose any threat to surface waters and associated species (e.g. Salmon). Any impact on water table levels or groundwater flows may impact on wetland sites some distance away. The EIAR should assess cumulative impacts with

other plans or projects. Where negative impacts are identified suitable mitigation measures should be detailed as appropriate.

The associated impacts of quarrying or extraction should be included among the considerations at the earliest stages of project planning and design, and should be assessed fully in the EIAR. Reinstatement or restoration plans will be required for any quarries or borrow pits on-site and should be included in the EIAR. As with any other part of the development, all borrow pits (existing or proposed) to be used in construction should be included within the application area for the proposed development.

Any tree felling of forested sites should be included as an intrinsic element of the overall development, the impacts and implications of which should be assessed fully in the EIAR. The extent of tree felling should be mapped, and the future use and management of all cleared areas should be specified. The impacts of tree felling on wildlife, habitats and surface waters (e.g. water quality) should be assessed fully, including the risk of Phosphate mobilisation from peat soils as a result of tree clearance and ground disturbance.

Tree felling is licensed and regulated by the Forest Service; any additional requirements in respect of this element of the proposed development, including any obligations to replant on other lands, should be made known at the planning application stage, and assessed as part of the EIAR as appropriate. If restoration of planted areas is proposed as mitigation or compensation for negative ecological effects, the EIAR should include a detailed plan to show the location, nature and area of habitat to be reinstated, and provide details of how such areas will be reinstated, managed and improved for habitats and/or species, together with proposals for monitoring and reporting. This plan should be prepared by a suitably qualified ecologist in consultation with other experts as appropriate. Consideration should be given within this context of no net loss to biodiversity and with that opportunities for establishment of native woodland as replacement planting rather than coniferous planting.

The likely impacts of grid connection, particularly for birds, sensitive habitats and surface waters, should be given due consideration at the EIA stage.

Any improvement or reinforcement works required for access and transport anywhere along the proposed haul route(s) should be included in the EIAR and subjected to ecological impact assessment with the inclusion of mitigation measures, as appropriate.

Any losses of biodiversity habitat associated with this proposed development (including access roads and cabling etc.) such as woodland, scrub, hedgerows and other habitats should be mitigated for. In addition, Annex 1 habitats which occur outside the Natura 2000 network are important in terms of biodiversity conservation. The presence of any Annex I habitats outside the network should be given due consideration as part of the consideration of biodiversity matters generally for the proposed development. The loss of Annex 1 habitats outside SACs should be avoided wherever possible.

Impacts of lighting on-site should also be assessed noting that lighting of turbines and masts can increase collision risk[2].

Alternative options for the site should also be included in the EIAR and this should include the opportunities for habitat restoration, and to manage the site as a carbon sink through restoration and rehabilitation. This aligns with the National Peatlands Strategy 2015 to 2025 and is notable with respect to carbon accounting. The projected carbon accounts for habitat restoration should be considered against the carbon accounting for the proposed wind farm. It should also be noted that habitat restoration would not only contribute to carbon sequestration but is also important in terms of flood management, water quality and for biodiversity in general.

Ecological Data and Surveys

Along with the standard NPWS data requests which is recommended, other sources of habitat and species information beyond those already identified include (but are not be limited to): the National Biodiversity Data Centre (www.biodiversityireland.ie), Inland Fisheries Ireland (www.fisheriesireland.ie), BirdWatch Ireland (www.birdwatchireland.ie), Irish Raptor Study Group, Golden Eagle Trust and Bat Conservation Ireland (www.batconservationlreland.org).

It is expected by this Department that best practice will be adhered to with regard to survey methodology and if necessary non Irish methodology adapted for the Irish situation, noting specific gaps in relation to species and age of the data outlined in some guidance documents. The EIAR should cover the whole project, including construction, operation and, if applicable, restoration or decommissioning phases. Inland Fisheries Ireland should be consulted with regard to fish species, if applicable. For information on Geological and Geomorphological sites, the Geological Survey of Ireland, should be consulted.

Where ex-situ impacts are possible, survey work may be required, outside of the development sites. Such surveys should be carried out by suitably qualified persons at an appropriate time of the year, depending on the species being surveyed for. The EIAR should include the results of the surveys and detail the survey methodology and timing of such surveys including consistency in terms of timed vantage point surveys.

Ornithology

Surveys for all species should cover bird usage and facilitate assessment of potential collision risk, habitat loss, barrier effect and displacement for these species and should be based around the daily and seasonal activity patterns of the species being surveyed. Survey work should cover year-round site use and should cover a minimum of two years to allow for an accurate determination of site usage. Target species for this site include Annex I (Birds Directive) species and Birds of Conservation Concern (BoCCI) such as Hen

[2] Douse, A (2020) "The Effect of Aviation Obstruction Lighting on Birds at Wind Turbines, Communication Towers and Other Structures", NatureScot Information Note. Version1.1

Harrier, Merlin, and Red Grouse. Hinterland surveys should include breeding raptor surveys, including roost watches, surveys for nocturnal species and other species-specific surveys as appropriate.

Vantage point surveys should be done in a manner that ensures sufficient data is collected to allow an assessment of the importance of all the flight paths into, out of and between sites and assess migratory movements. Consequently, the Department recommends that a visibility analysis of topography and vegetation is used in the selection of vantage points for ornithological surveys. Technological solutions should also be considered in conjunction with VPs surveys to ensure sufficient data is compiled for assessment.

Results for species need to be referenced back to the overall populations and their dynamics as, in some cases even a small risk to a population of a species could be considered significant.

When completing impact assessment for birds, assessment and monitoring results from nearby wind farms must be considered. Cumulative impact on birds from all wind farms in the area needs to be assessed and the data from surrounding sites needs to be considered in the assessment.

Bats

Bat roosts may be present in trees, buildings and bridges. Bat species are protected under the Wildlife Act, 1976 to 2018, and are subject to a regime of strict protection pursuant to the requirements of the Habitats Directive (92/43/EEC) as transposed in Irish law in Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended). Therefore, damage/disturbance to any such roosts must be avoided in the first instance. While the Minister may grant a derogation licence under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011-2015, a licence can only be granted once a number of strict criteria have been met (see Regulation 54). An assessment of the impact of the proposed wind farm on bat species should be carried out noting recent guidance available, "*Bat and Onshore Wind Turbines: Survey, Assessment and Mitigation, 2019"* published jointly by Scottish Natural Heritage and Bat Conservation Trust and other stakeholders.

Watercourses and wetlands

Wetlands are important areas for biodiversity and ground and surface water quality should be protected during construction and operation of the proposed development. The EIAR should include a detailed assessment of the hydrological impacts on wetlands from the proposed development. Any watercourse or wetland which may be impacted on should be surveyed for the presence of protected species and species listed on Annexes II and IV of the Habitats Directive. For example, these species could include Otter (*Lutra lutra*) which are protected under the Wildlife Acts and listed on Annex II and IV of the Habitats Directive, Salmon (*Salmo salar*), Lamprey (three species in Ireland), White-clawed Crayfish (*Austropotamobius pallipes*) listed on Annex II of the Habitats Directive, Frogs (*Rana*

temporaria) and Newts (*Trituris vulgaris*) protected under the Wildlife Acts and Kingfishers (*Alcedo atthis*) protected under the Wildlife Acts and listed on Annex I of the Birds Directive (Council Directive 79/409 EEC).

Hedgerows, Scrub and related habitats

Hedgerows and scrub should be maintained where possible, as they form wildlife corridors and provide areas for birds to nest in; hedgerows provide a habitat for woodland flora, roosting places for bats and Badger setts may also be present. The EIAR should provide an estimate of the length/area of any hedgerow/scrub that will be removed. Where it is proposed that trees or hedgerows will be removed there should be suitable planting of native species in mitigation incorporated into the EIAR. Hedgerows, trees, scrub and uncultivated vegetation (including peatland habitats) should not be removed during the nesting season (i.e. March 1st to August 31st), noting the protection afforded under the Wildlife Act 1976-2018.

Marsh Fritillary

Marsh fritillary surveys should be carried out as per standard Marsh Fritillary Larval Web Survey methodology.

Alien invasive species

The EIAR should also address the issue of invasive alien plant and animal species such as *Rhododendron ponticuum* and Japanese Knotweed, and detail the methods required to ensure they are not accidentally introduced or spread during survey and or construction. Information on alien Invasive species In Ireland can be found at http://invasives.biodiversityireland.ie/ and at http://invasivespeciesireland.com/.

Impact assessment

The impact of the proposed development on the flora/ fauna and habitats present should be assessed with particular regard to:

- Special Areas of Conservation (SAC) designated under the EC Habitats Directive (Council Directive 92/43/EEC)
- Special Protection Areas (SPA) designated under the EC Birds Directive (Council Directive 2009/147 EC);
- proposed Natural Heritage Areas;
- species protected under the Wildlife Acts including protected flora;

'Protected species and natural habitats', as defined in the Environmental Liability Directive (2004/35/EC) and European Communities (Environmental Liability) Regulations, 2008 including

- Birds Directive - Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur);
- Habitats Directive - Annex I habitats, Annex II species and their habitats;
- Annex IV species and their breeding sites and resting places (wherever they occur);
- important bird areas such as those identified by Birdlife International, features of the landscape which are of major importance for wild flora and fauna, such as those with a "stepping stone" and ecological corridors function, as referenced in Article 10 of the Habitats Directive;
- other habitats of ecological value in a national to local context (such as those identified as locally important biodiversity areas within Local Biodiversity Action Plans and County Development Plans);
- Red data book species;
- Biodiversity in general.

Construction Management Plans and Mitigation

Complete project details including Construction Management Plans (CMPs) need to be provided in order to allow an adequate EIAR and appropriate assessment to be undertaken. CMPS should contain sufficient detail to avoid any post construction doubt with regard to the implementation of mitigation measures, timings and roles and responsibilities for same. Any mitigation needs to be included in detail and if being relied upon to reach conclusions must be proved to be achievable and likely to be effective in any given scenario it is needed. Proof of effectiveness will be required with examples of where similar techniques have been employed previously.

Applicants need to be able to demonstrate that CMPs and other such plans are adequate, all mitigation is included and effective and supported by scientific information and analysis and that they are feasible within the physical constraints of the site. The positions, locations and sizes of construction infrastructure and mitigation such as settlement ponds, disposal sites and construction compounds may significantly affect European and other designated sites, habitats and species in their own right and could have an effect for example on, drainage, water quality, habitat loss, and disturbance. If these are undetermined at time of the assessment all potential effects of the development on the site are not being considered.

Construction work should not be allowed to impact on water quality and measures should be detailed in the EIAR to prevent sediment and/or fuel runoff from getting into watercourses which could adversely impact on aquatic species.

Inland Fisheries Ireland (IFI) should be consulted with regard to impacts on fish species and the applicant may find it useful to consult their publication entitled "Planning for watercourses in the urban environment" (2020) which can be downloaded from their web site.

If applicants are not in a position to state the exact location and details of cable routes at the time of application, then they need to consider the range of options (overhead and underground) that may be used within their assessment.

The Department draws your attention to the recent High Court decision with respect to the High Court judicial review Sweetman V An Bord Pleanála (2021) IEHC 390 and the appropriate detail of project description required for an EIA.

Guidance on the Appropriate Assessment (AA):

In order to carry out the Appropriate Assessment screening, and/or prepare a Natura Impact Statement (NIS), information about the relevant European sites including their conservation objectives will need to be collected.

Screening for appropriate assessment should focus on the likely significant effects of the proposed development and related activities on European sites noting that impacts to sites via air and water may occur over large distances using the source-pathway-receptor model. Details of designated sites and species and conservation objectives can be found on http://www.npws.ie/ .

In addition, the Article 12 and 17 reports under the Birds and Habitats Directives should be referenced https://www.npws.ie/publications. The Departmental guidance document on Appropriate Assessment is available on the NPWS website at https://www.npws.ie/development-consultations and in EU Commission guidance entitled:

- "*Wind energy developments and Natura 2000*"[3]
- "*Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*"[4];
- 2018 Commission notice "*Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*"[5] (updated June 2020)

More recent CJEU and Irish case law has clarified some issues and should also be consulted.

[3] https://ec.europa.eu/environment/nature/natura2000/management/docs/Wind_farms.pdf

[4] http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf

[5] https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/EN_art_6_guide_jun_2019.pdf

The NIS should present a robust and reasoned scientific assessment and analysis of the implications of the proposals for the relevant conservation objectives of relevant European sites. Best scientific knowledge in the field should be applied to the understanding of the likely effects, and to the assessment and analysis of the implications of the proposals for the conservation objectives and integrity of the sites. When carried out by the competent authority, the appropriate assessment cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the project on European sites.

Cumulative and ex situ impacts

A rule of thumb often used is to include all European sites within a distance of 15km. It should be noted however that this will not always be appropriate. In some instances where there are hydrological connections a whole river catchment or a groundwater aquifer may need to be included. Similarly where bird flight paths are involved the impact may be on an SPA more than 15 kilometres away.

Other relevant Local Authorities should be consulted to determine if there are any projects or plans which, in combination with this proposed development, could impact on any European sites.

As noted already assessment and monitoring results from nearby wind farms should be considered. Cumulative impact from all wind farms in the area needs to be assessed and the data from surrounding sites needs to be considered in the assessment of impacts.

Post construction monitoring

This Department recognises the importance of pre and post construction monitoring, such as recommended in Drewitt et al. (2006), and Bat Conservation Ireland (2012). The applicant should not use any proposed post construction monitoring as mitigation to supplement inadequate information in the assessment. Please refer to Circular Letter PD 2/07 and NPWS 1/07 on this issue. This can be downloaded from the Department's website https://www.npws.ie/development-consultations .

The EIAR process should identify any pre and post construction monitoring which should be carried out. The post construction motoring should include bird and bat strikes/fatalities including the impact on any such results of the removal of carcasses by scavengers. Monitoring results should be made available to the competent authority and copied to this Department. An appropriate plan of action needs to be agreed at planning stage with the Planning Authority if the results in future show a significant mortality of birds and/or bat species. It is important to note that unless post decision consultation with NPWS is specifically stated as a condition of planning, NPWS has no post consent role. However, regional staff are available for liaison regarding any associated licencing requirements and or new information arising for specific species of concern.

Note: any significant change to mitigation may require amendment and where a licence has expired; there will be a need for new licence applications for protected species.

Licenses

Where there are impacts on protected species and their habitats, resting or breeding places, licenses may be required under the Wildlife Act 1976-2018 or derogations under the EC (Birds and Natural Habitats) Regulations 2011, as amended.

In particular, bats as outlined earlier and otters, are subject to a regime of strict protection pursuant to the requirements of the Habitats Directive (92/43/EEC) as transposed in Irish law in Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended). A copy of Circular Letter NPWS 2/07 entitled "*Guidance on Compliance with Regulation 23 of the Habitats Regulations 1997 – strict protection of certain species/applications for derogation licences*" can be found on the Departmental web site at www.npws.ie/sites/default/files/general/circular-npws-02-07.pdf. It should be noted that the Regulations of 1997 have since been superseded by the European Communities (Birds and Natural Habitats) Regulations 2011, as amended. Part 6 of those Regulations is now the relevant section dealing with the protection of flora and fauna. Reference to Regulation 23 in the circular letter should be taken to mean Regulation 51 in the current Regulations.

In addition, the EIAR should take account of species protected under sections 21, 22 and 23 of the Wildlife Acts if there are any impacts on other protected species or their resting or breeding places, such as on protected plants, badger setts or birds' nests. The EIAR will also need to be cognisant of article 5 (d) of the Birds Directive. For that reason uncultivated vegetation, including hedges and trees, should not be removed during the nesting season (i.e. March 1st to August 31st).

In order to apply for any such licenses or derogations as mentioned above the results of a survey should be submitted to the National Parks and Wildlife Service of this Department. Such surveys are to be carried out by appropriately qualified person/s at an appropriate time of the year. Details of survey methodology should be provided. Should this survey work take place well before construction commences, it is recommended that an additional ecological survey of the development site should take place immediately prior to construction to ensure no significant change in the findings of the baseline ecological survey has occurred. As outlined already, if there has been any significant change mitigation, this may require amendment and where a licence has expired, there will be a need for new licence applications for the protected species.

The above observations/recommendations are based on the papers submitted to this Department on a pre-planning basis and are made without prejudice to any observations that the Minister may make in the context of any consultation arising on foot of any development application referred to the Minister, by the planning authority/ies, in the role as statutory consultee under the Planning and Development Act, 2000, as amended.

You are requested to send further communications to the Development Applications Unit (DAU) at **manager.dau@housing.gov.ie**.

Is mise le meas**,**



Diarmuid Buttimer
Development Applications Unit
Administration

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

Development Applications Unit
Department of Housing, Local Government and Heritage
Newtown Road
Wexford
Y35 AP90

By email:
manager.dau@npws.gov.ie
manager.dau@housing.gov.ie

Our Ref: P20-211/Let001/BOD

22 November 2023

RE: Consultation Request - Littleton Wind Farm, Co. Tipperary

Dear Sir / Madam,

Fehily Timoney and Company are acting on behalf of our client, Bord Na Móna, in relation to a proposed wind farm development at Littleton, Co. Tipperary.

We previously received a response to a pre-planning scoping document issued in the early stages of the project (response **G Pre00244/2021** dated 2 November 2021).

We are following up with more detailed project information and information on ecological surveys completed/ongoing to check if there are any further nature conservation observations in light of current project information. Any further feedback received will inform the EIAR and AA/NIS, which are currently in preparation.

The proposal includes the following:

- A wind farm consisting 11 no. wind turbines with a blade tip height of 190 m, a hub height of 108 m and a rotor diameter of 164 m.
- Construction of turbine foundations and crane pad hardstanding areas including associated drainage infrastructure;
- Construction of new permanent site tracks and associated drainage infrastructure;
- Upgrading of existing tracks and associated drainage infrastructure;
- Upgrade of existing site entrances for construction and operational access;
- An on-site borrow pit and associated ancillary drainage;
- Temporary construction site compounds and associated ancillary infrastructure including parking;
- 1 no. permanent meteorological mast(s) to a height of 100 m above ground level.
- 1 no. onsite 110kV electrical substation to Eirgrid specifications.
- Tree felling to facilitate construction and operation of the proposed development.
- High Voltage (110kV) electrical cabling within public roads to facilitate a proposed connection to the national transmission grid network at Ballyragget, Co. Kilkenny.

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- Installation of medium voltage underground electrical and communication cabling connecting the wind turbines to the proposed on-site substation and associated ancillary works;
- Temporary accommodation works to facilitate the delivery of wind turbine components.
- A recreational amenity in the form of walking trails within the wind farm site making use of existing and proposed tracks and associated car parking facilities.
- Biodiversity enhancements within the wind farm site.
- All related site works and ancillary development including landscaping and drainage;
- A 35 year operational life from the date of commissioning of the entire wind farm is being sought.

Please find attached a figure illustrating the location of the wind farm, the turbine layout, and European sites in proximity to the proposed development. Ecological surveys are on-going at the site and include:

- Habitat surveys
- Invasive species surveys
- Mammal surveys
- Bat surveys
- Ornithological surveys
- Aquatic surveys
- Marsh fritillary surveys

FT will be preparing the Biodiversity and Ornithology chapters of the EIAR and the Natura Impact Statement for the development.

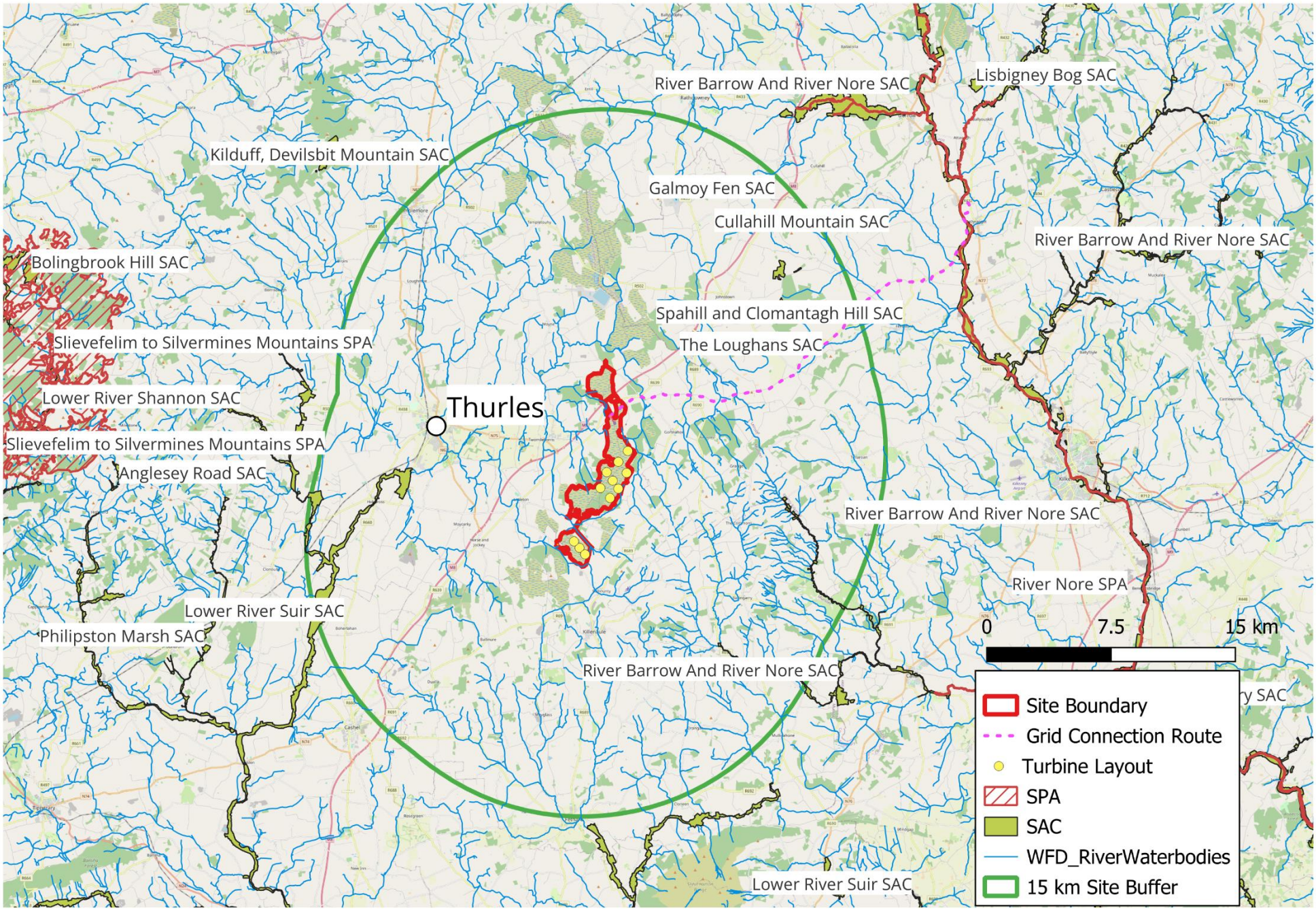
Please do not hesitate to contact me if you have further queries. We would welcome any comments or observations you may have regarding the proposed development or if you would like to meet to discuss the development in more detail, this can be arranged.

Yours faithfully,

Ben O'Dwyer BSc.

Senior Project Ecologist

for and on behalf of Fehily Timoney and Company


River Barrow And River Nore SAC
Lisbigney Bog SAC
Kilduff, Devilsbit Mountain SAC
Galmoy Fen SAC
Cullahill Mountain SAC
River Barrow And River Nore SAC
Bolingbrook Hill SAC
Spahill and Clomantagh Hill SAC
The Loughans SAC
Slievefelim to Silvermines Mountains SPA
Thurles
Lower River Shannon SAC
Slievefelim to Silvermines Mountains SPA
Anglesey Road SAC
River Barrow And River Nore SAC
River Nore SPA
Lower River Suir SAC
Philipston Marsh SAC
River Barrow And River Nore SAC
Lower River Suir SAC
0
7.5
15 km
Site Boundary
Grid Connection Route
Turbine Layout
SPA
SAC
WFD_RiverWaterbodies
15 km Site Buffer

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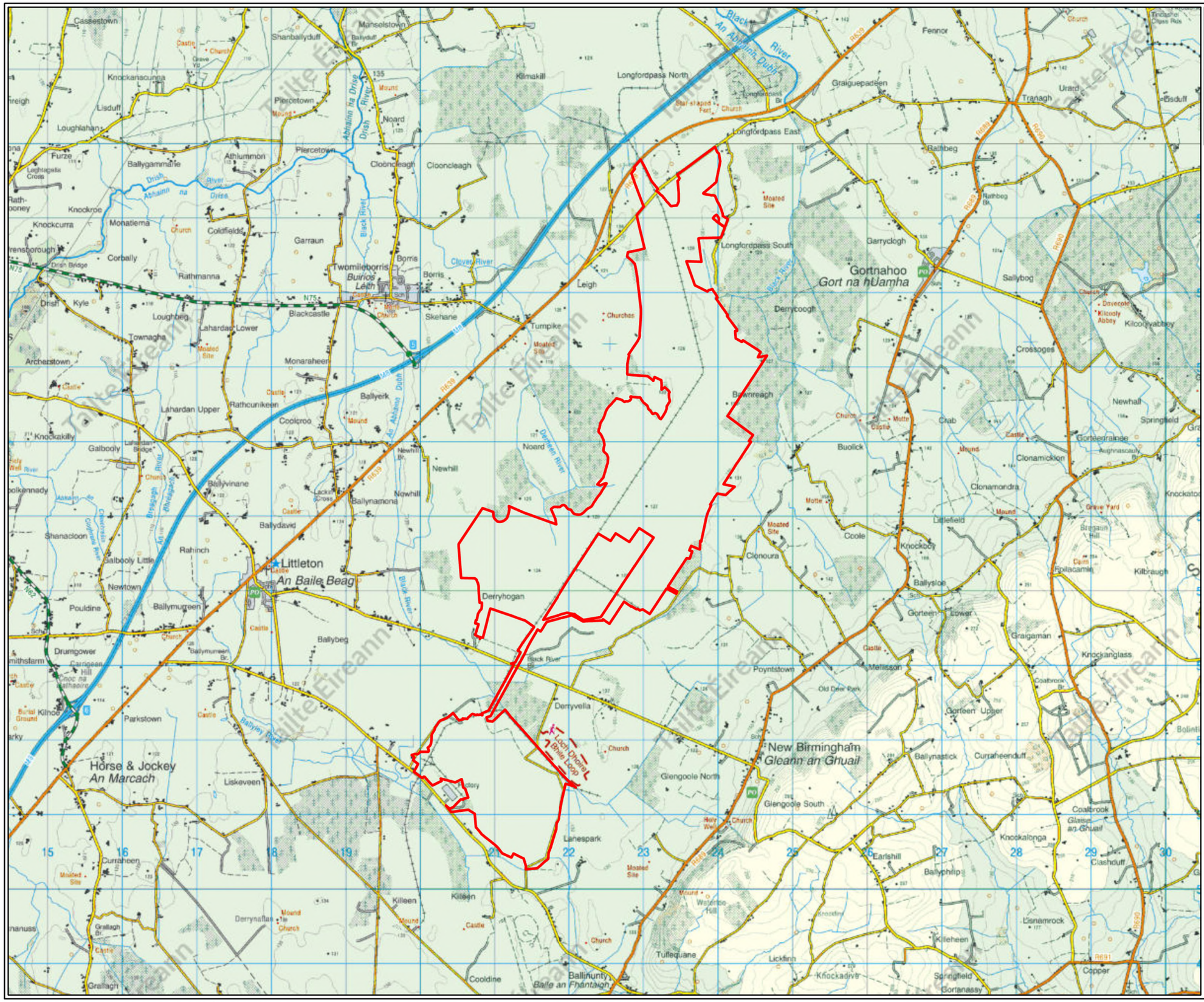
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APPENDIX 2

Development Site Boundary & Grid Connection

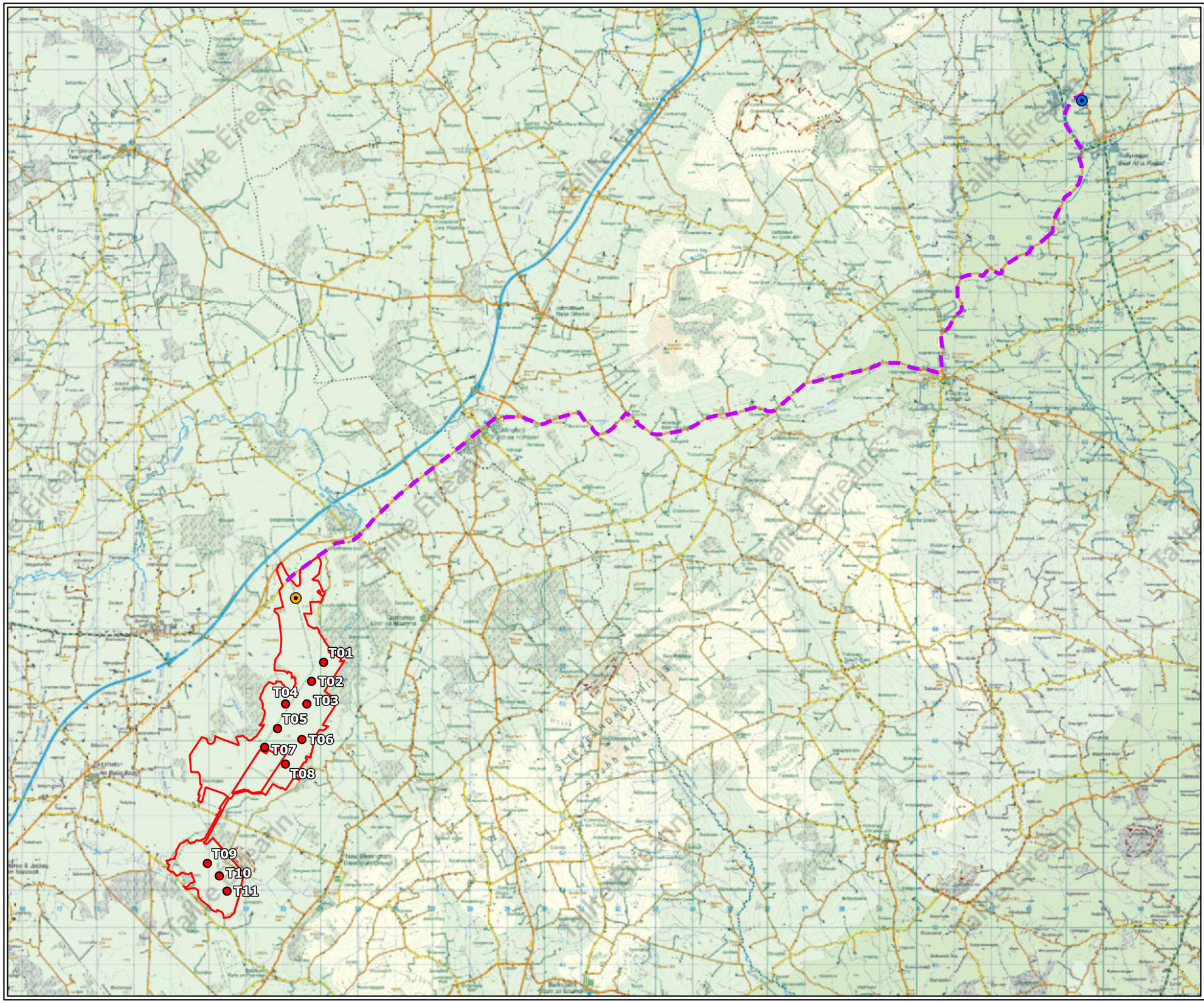
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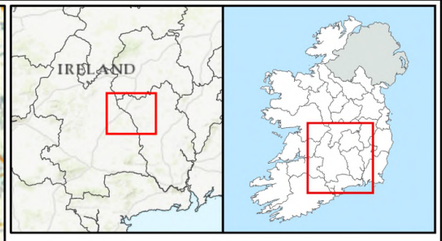
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Cassestown
Knockanacunna
Lisduff
Loughlahan
Furze
Ballygammane
Knockroe
Knockcurra
Monatiera
Corbally
Rathmanna
Drish
Kyle
Loughbeg
Townagha
Archerstown
Lahardan Upper
Knockakilly
Galbooly
Ballyvinane
Shanballyduff
Mansolstown
Piercetown
Athlummon
Coldfields
Garraun
Twomileborris
Buiríos Léith
Borris
Skehane
Blackcastle
Lahardan Lower
Monaraheen
Rathcunikeen
Coolcroo
Ballyerk
Newhill
Ballynamona
Nowhill
Ballydavid
Littleton
An Baile Beag
Rahinch
Galbooly Little
Newtown
Pouldine
Ballymurreen
Ballybeg
Drumgower
Parkstown
Horse & Jockey
An Marcach
Liskeveen
Curraheen
Killeen
Derrynaflan
Gralagh
Ballinunty
Baile an Fhantaigh
Cooldine
Tullequane
Lickfinn
Knockadiva
Springfield
Gortanassy
Copper
Lisnamrock
Killeheen
Clashduff
Earlshill
Ballyphilips
Knockalonga
Coalbrook
Glaise an Ghuail
New Birmingham
Gleann an Ghuail
Ballynastick
Curraheenduff
Glengoole North
Glengoole South
Lanespark
Derryvella
Poyntstown
Old Deer Park
Gorteen Upper
Gorteen Lower
Graigaman
Knockanglass
Ballysloe
Knockboy
Littlefield
Clonamondra
Clonoura
Coole
Derryhogan
Ballyard
Ballyhea
Ballyhea Br.
Ballyard Br.
Ballyard Cross
Ballyard Bridge
Ballyard Lower
Ballyard Upper
Ballyard Hill

World Topographic Map: Esri, HERE, Garmin, FAO, NOAA, USGS
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Legend

- Site Boundary
- Grid Connection Route
- Ballyragget 38kV Substation
- Onsite Substation
- Turbine Locations

TITLE:	Grid Connection Route		
PROJECT:	Littleton Windfarm		
FIGURE NO:	4.3		
CLIENT:	Littleton Wind Farm DAC		
SCALE:	1:100,000	**REVISION:**	0
DATE:	27/11/2025	**PAGE SIZE:**	A3

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N W E S

Kilometers
0 2.5 5 10

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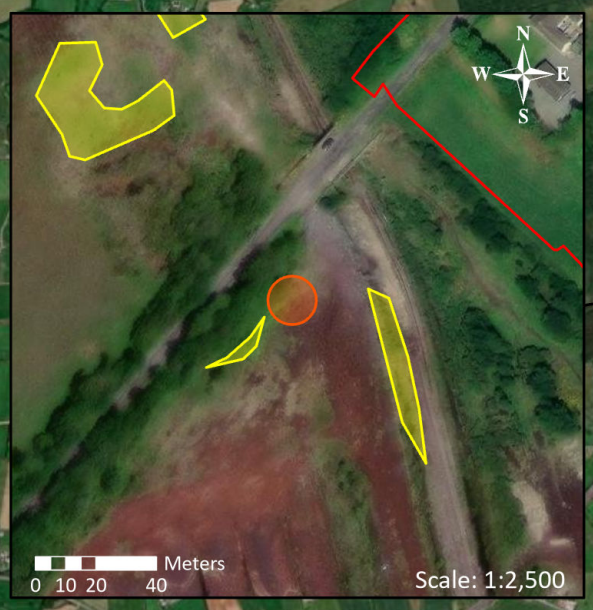
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APPENDIX 3

Key Ecological Receptors

Site Boundary:
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Legend
- Site Boundary
- HH Winter Roost Buffer
- Main Wader and Waterbird Areas
- Whooper Swan Feeding Area
- Woodcock Territory
- Marsh Fritillary Habitat
- Japanese Knotweed Buffer
- Turbine Locations

TITLE: Key Ecological Receptors	**FIGURE NO:** INFO		
	CLIENT: Littleton Wind Farm DAC		
PROJECT: Littleton Wind Farm	**SCALE:** 1:28,000	**REVISION:**	0
	DATE: 12/12/2025	**PAGE SIZE:**	A3

N W E S

0 0.5 1 2 Kilometers

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Area 1	Area 2	Area 3
Breeding Season		
Curlew	Mallard	Black-headed Gull
Kingfisher	Moorhen	Curlew
Lapwing	Snipe	Grey Heron
Mallard	Teal	Greylag Goose
Snipe	-	Lapwing
Teal	-	Little Grebe
-	-	Mallard
-	-	Shoveler
-	-	Snipe
-	-	Moorhen
-	-	Teal
-	-	Wigeon
Winter		
-	Whooper Swan Roost	-