14. MATERIAL ASSETS

This chapter reports the findings of an assessment of any likely significant effects on material assets which may have occurred or are occurring as a result of peat extraction and ancillary activities from July 1988 that have been carried out and will be carried out within the Application Site. Chapter 4 Description of the Development provides a full description of the elements of the Project; the baseline as of July 1988, the activities from July 1988 to the cessation of peat extraction in June 2020, the management of the Application Site since June 2020, and the activities relating to historic peat extraction intended to be carried out into the future. The assessments in this chapter will determine the any likely significant effects that occurred on material assets (or are likely to occur) during three differing timeframes termed 'Phases' (as described in Chapter 4 Description of the Development):

- **Peat Extraction Phase:** peat extraction activities and ancillary works at the Application Site from July 1988 to the cessation of peat extraction in June of 2020 (July 1988 – June 2020). The Peat Extraction Phase is described in detail in Sections 4.4 to Section 4.8 in Chapter 4 Description of the Development;
- **Current Phase:** the management of the Application Site since June 2020 (June 2020 to present). The Current Phase is described in detail in Section 4.9 in Chapter 4 Description of the Development; and,
- **Remedial Phase:** the activities intended to be carried out at the Application Site into the future. The Remedial Phase is described in detail in Section 4.10 in Chapter 4 Description of the Development.

As outlined in the EPA Guidelines (2022), material assets can be taken to mean built services and infrastructure, roads and traffic, and waste management. In Directive 2011/92/EU this factor included architectural and archaeological heritage. Directive 2014/52/EU now includes those heritage aspects as components of cultural heritage, which are addressed in Chapter: 13 Archaeology and Cultural Heritage of this rEIAR. Economic assets of natural heritage include non-renewable resources such as minerals or soils, and renewable resources such as wind and water. These assets are addressed in Chapter 7 Land, Soils and Geology, Chapter 8: Hydrology and Hydrogeology, Chapter 9: Air Quality and Chapter: 10 Climate. Tourism and amenity resources, which are also considered material assets, are addressed in Chapter 5 Population and Human Health. The railway infrastructure at the Application Site is considered in Chapter 13: Archaeology and Cultural Heritage.

This chapter of the rEIAR addresses the likely significant effects of peat extraction and ancillary activities on transportation and utilities (electricity, water, wastewater and waste management), telecommunications and aviation assets which are economic assets of human origin.

14.1.1 Statement of Authority

This section of the rEIAR has been prepared by Susan Doran and reviewed by Ellen Costello and Sean Creedon, all of MKO. Susan Doran is an Environmental Scientist with MKO with over two years' experience in consultancy and conservation. Susan holds BSc (Hons) in Ecology and Environmental Biology from University College Cork. Prior to her role as Environmental Scientist, Susan was an Ornithologist and Coordinator for the MKO Ornithology Team. Susan has been involved with several large-scale onshore wind farms as assistant Project Manager through the EIA process.

Ellen Costello is a Senior Environmental Scientist with MKO with over five years' experience in private consultancy. Ellen holds a BSc (Hons) in Earth Science, and a MSc (Hons) in Climate Change: Integrated Environmental and Social Science Aspects where she focused her studies on renewable energy development in Europe and its implications on environment and society. Ellen's key strengths and expertise are Environmental Protection and Management, Environmental Impact Statements, Project Management, and GIS Mapping and Modelling. Since joining MKO, Ellen has been involved in a range of large-scale infrastructure projects including that of housing, tourism and recreation,

renewable energy infrastructure and substitute consent applications for peat extraction. In her role as a senior project manager, Ellen works with and co-ordinates large multidisciplinary teams including members from MKO's Environmental, Planning, Ecological and Ornithological departments as well as sub-contractors from various fields in the preparation and production of EIARs.

Sean is an Associate Director in the Environment Team at MKO. He oversees a team of highly skilled environmental professionals working on EIARs for large and medium scale Renewable Energy infrastructure. Sean has directed and overseen multiple renewable energy projects across wind, solar, battery and hydrogen as well as a range of thermal and other energy related developments. He has worked on the planning and environmental impact elements within all stages of wind farm project delivery. He is a member of the MKO senior management team responsible for developing the business, mentoring team members, fostering a positive culture and promoting continuous employee professional development. Sean has over 23 years' experience in program and project development, holds an MSc from NUI Galway and a Diploma in Project Management from Institute of Project Management Ireland.

Section 14.2 Traffic and Transport of this chapter has been peer reviewed by Alan Lipscombe of Alan Lipscombe Traffic and Transport Consultants Ltd. Alan is a competent expert in traffic and transport assessments. In 2007 Alan set up a traffic and transportation consultancy providing advice for a range of clients in the private and public sectors. Prior to this Alan was a founding member of Colin Buchanan's Galway office having moved there as the senior transportation engineer for the Galway Land Use and Transportation Study. Since the completion of that study in 1999, Alan has worked throughout the West of Ireland on a range of projects including: major development schemes, the Galway City Outer Bypass, Limerick Planning Land-Use and Transportation Study, Limerick Southern Ring Road Phase II, cost benefit analyses (COBA) and various studies for the NUI Galway. Before moving to Galway in 1997, Alan was involved in a wide variety of traffic and transport studies for CBP throughout the UK, Malta and Indonesia. He has particular expertise in the assessment of development related traffic, including many wind farm developments including the following; Ardderoo, Derryadd, Knocknamork, Shehy More, Cloncreen, Derrykillew, Coole, Ballyhorgan, Cahermurphy, Lettergull, Barnadivane, Cleanrath and Knocknalough.

Alan has a BEng (hons) Degree in Transportation Engineering (Napier University, Edinburgh, 1989), is a member of Engineers Ireland and of the Institute of Highways and Transportation and is a TII accredited Road Safety Audit Team Member.

14.1.2 Assumptions and Limitations

Traffic and Transport

- Transport movements were calculated on the assumption that all peat during the Peat Extraction Phase was transported from the Application Site via internal private rail network directly to end users;
- All rail movements were estimated on the basis that Bord na Móna's Peat Haulage Locomotives were stocked to their maximum haulage capacity of 100 tonnes;
- For the purposes of assessment, it is assumed that all rail movements took place using the 2 no. level crossings within and adjacent to the Application Site. At the level crossings, road users were required to stop to allow rail cars cross. In reality, 3 no. underpasses were also present adjacent to the Application Site boundary which facilitated rail movements that occurred due to the Project. These underpasses ensured that there was no interaction between road users and the rail movements at those locations.
- Wait times at level crossings were estimated at a maximum of 5 minutes on the basis that the level crossings were operated by the driver of the Peat Haulage Locomotives. The wait time duration of a maximum of 5 minutes at the level crossings has been identified from personal communications with Bord na Móna Employees.

- TII traffic count data which is used to compare the Applicant's generated traffic is only available from certain years (2021-2024) for all count locations. There are certain routes that have historical counts that date back to 1997 available on the TII website;
- All staff, both seasonal and permanent, are assumed to have travelled to the Application Site all year round to present the precautionary scenario. It is likely that the traffic figures and respective impacts assessed would have been less in reality;
- Details pertaining to ancillary activities that would give rise to vehicular movements such as construction work, general collections and deliveries, fuel deliveries and monitoring work are not available or there is limited data available. It is considered that the level of movements associated with these activities are not significant in comparison to the conservative levels of vehicle movements arising from staff movements during the Peat Extraction Phase, and truck/ vehicle movements arising from the Current Phase. However, given that there would have been some sporadic HGV movements to and from the site, in order to assess a highly precautionary scenario, it is assumed that 1 no. HGV travelled to and from the site per day over the duration of the Peat Extraction Phase and Current Phase.
- All journeys are represented by whole numbers rounded up. This is to show complete traffic movements only and remain representative of the theoretical precautionary scenario.

Other Material Assets

No Assumptions or Limitations are outlined for the Other Material Assets discussed in this chapter.

14.2 Traffic and Transport

14.2.1 Introduction

14.2.1.1 Background and Objectives

The purpose of this section is to assess the effects of the traffic movements that have been and will be generated during the Project on roads and traffic.

14.2.1.2 Guidance and Legislation

This section of the rEIAR has been completed in accordance with the guidance set out in Chapter 1: Introduction. The assessment uses standard terminology to describe the likely significant effects associated with peat extraction and ancillary activities at the Application Site. Further information on the Classification of effects used in this assessment is presented in Section 1.7.2 of this rEIAR.

14.2.1.3 Scoping and Consultation

The scope for this assessment has been informed by consultation with statutory consultees, bodies with environmental responsibility and other interested parties as outlined in Section 2.4 of Chapter 2 Background of the rEIAR.

Transport Infrastructure Ireland

A scoping request was sent to Transport Infrastructure Ireland (TII) on the 24th of August 2022. A response was received on the 22nd of September 2022 outlining TII's recommendations for developments which may have future impacts on the road network. Please see Appendix 2-1 for scoping correspondences with consultees in relation to this rEIAR.

A second scoping request was sent to TII on the 21st of June 2024. A response was received on the 8th of July 2024 clarifying that the rEIAR Scoping document circulated is a copy originally distributed in 2022, to which TII responded under reference TII22-120175 in September 2022. The recommendations provided by TII offer only general guidance for the preparation of an EIAR, which may impact the national road and light rail networks.

Department of Transport

A scoping request was sent to the Department of Transport on the 24th of August 2022, and on the 21st of June 2024. No response has been received to date.

Please see Appendix 2-1 for scoping correspondences with consultees in relation to this application.

14.2.2 Methodology

The assessment adopts the guidance for such assessments set out by TII in the document *'Traffic and Transport Assessment Guidelines May 2014*[1].

The Traffic and Transport Section of the rEIAR is set out as follows:

1. A review of the historic and existing transport infrastructure in the vicinity of the Application Site, to establish the 1988 Baseline for this assessment (Section 14.2.3).
2. A description of the traffic and rail movements associated with the Project in each phase; Peat Extraction Phase, Current Phase and the Remedial Phase (Section 14.2.4);
    a. Peat extracted from the Application Site was transported via internal rail to its end destination via the internal private rail network. The main routes identified for the Project are from the Application Site to end users such ESB Ferbane Power Station, ESB Shannonbridge Power Station, Bord na Móna Blackwater Works, and Derrinlough Briquette Factory. All deliveries were made by rail until years 2023 to 2024 inclusive where the remainder was delivered via HGV.
    b. The volume of traffic generated on the road network from peat extraction and ancillary activities through all Project phases is extrapolated from employment figures across all Project phases. Given that there would have been some sporadic HGV movements to and from the site, in order to assess a highly precautionary scenario, it is assumed that 1 no. HGV travelled to and from the site per day over the duration of the Peat Extraction Phase and Current Phase.
    c. Utilising the TII Traffic Data website (www.nratrafficdata.ie), historical traffic counts were reviewed along the main routes to the Application Site from the surrounding area. To ensure appropriate coverage, points to the North, East, South and West were utilised. TII traffic data predominantly covers the 2021-2024 period. Historical count data are available for some routes, and where available, have been used.
    d. As a conservative measure, traffic volumes generated by the Project across all Project phases have been assessed against the lowest Average Annual Daily Traffic (AADT) data. For the Peat Extraction Phase, a theoretical 1988 AADT value has been quantified using Census population data for the State. The 31% increase in State population between Census years 1986 and 2021 was also accounted for. A 23.6% reduction (representing the 31% population increase from 1986 to 2021) was applied to the earliest TII Count data available i.e 2021, to represent the estimated traffic figure for 1988. The lowest AADT value is compared with the Project's annual average daily traffic volume. By using the lowest AADT as a comparison, the greatest potential impact of traffic volumes generated by the Project is identified.

[1] *TII Publications May 2014 Traffic and Transport Assessment Guidelines. Available at: https://www.TIIpublications.ie/library/PE-PDV-02045-01.pdf*

This is to infer a theoretical precautionary scenario as Table 14-4 below presents the Project's traffic movements as a percentage of the lowest recorded daily traffic count. Similarly, the TII 2021 data has been utilised for the Current Phase and Remedial Phase as it is the lowest possible TII AADT recorded, and as such, presents a precautionary scenario.

e. The average daily traffic movements from the Application Site would have travelled in various directions; however, as a conservative measure, the following sections assess the impact of the total daily Project traffic movements on each route, as if all daily movements travelled to the same destination at one time. Therefore, the results generated produce a much greater impact that would have occurred in reality.

f. Under the precautionary theoretical scenario previously described, the volume of rail movements that interacted with the public road network adjacent to or within the Application Site boundary as a consequence of the Project during the Peat Extraction Phase and Current Phase is extrapolated from peat extraction volumes and stockpile removal volumes.

14.2.3 Establishment of Baseline (July 1988)

As described in Chapter 4: Description of the Development, by July 1988, drainage had been installed for peat extraction at the Application Site. From the commencement of the assessment period in July 1988, 3,351,246 tonnes (3,407,004 tonnes when assessing full years in both 1988 and 2020) of peat was extracted at the Application Site. Peat extracted at the Application Site during the year 1988 was transported via the internal private rail network to ESB Ferbane Power Station.

Railway infrastructure was present across the Application Site and connected the Application Site to the Boora Bog Group via an underpass under the Ferbane-Ballycumber road (designated the R436 in 1993) which was granted planning permission in 1985 (Offaly Co. Co. Ref. 8557). Access to the Application Site was and currently is provided primarily via 2 no. entrances at the southwest and southeast of the Application Site off the Ferbane-Ballycumber road (designated the R436 in 1993), and at the northwest of the Application Site via the N62. Adjacent to the Application Site and located on the R436, Lemanaghan Works comprised of canteen, storage sheds, maintenance buildings, staff carparks, HGVs storage area, refuelling area and was therefore the main hub of the Application Site. It was from here that most traffic generated from the Application Site entered the local road network, with the balance of traffic generated at the Application Site joining the local road network via the site access points on various local roads as described below.

The Corrhill-Ballycumber road (designated the L7002 in 1993) cuts through the north of the Application Site in a southwest to northeast direction, separating the Application Site into two parts, the larger being to the south of this road. The Application Site was served by several local roads to the north, south, east and west connecting the Application Site to the N52 (designated National Road in 1977) to the south, direct access to the N62 to the west, and to the M6(designated M6 in 1994) to the north, approximately 6.6km from the Application Site. Various third-class roads provided access to the Application Site as well as public rights of way. The closest settlements to the Application Site were Ferbane (approx. 3.3km southwest), Clara, (approx. 7.8km north-east), and Moate (approx. 8.7km north).

As detailed in Section 5.3.3.2 in Chapter 5 of this rEIAR, in the late 1980s (including the baseline assessment year of 1988), the total Bord na Móna employment numbers dropped by c. 43% across all sectors due to the introduction of voluntary redundancies brought in by the company. By 1988, staff numbers at the Application Site had fallen to approximately 15 employees in total. There were approximately 2 permanent employees and 13 seasonal employees on average at the Application Site. Numbers remained largely similar from 1988, through the 1990s and 2000s.

The Bord na Móna railway infrastructure is described in detail in Section 4.2.3 of Chapter 4 Description of Development. A general description is included below as it forms part of the baseline environment considered relevant in this chapter.

By 1988, peat extraction areas were served by a dynamic network of narrow-gauge rail tracks within the Application Site. Annual reports indicate permanent rail lines were first laid down in Lemanaghan in 1954. Aerial photographs from 1973 indicate that by this period, railway infrastructure within the peat extraction areas connecting to the Lemanaghan Works was in place. By 1988, 1 no. rail underpass in place at the Application Site beneath the R436 to facilitate access between the Application Site and the Derries Bog, also within the Boora Bog group (IPC Licence P0500-01).

The railway tracks comprise permanent and temporary lines laid to facilitate the transportation of peat off the bog and into the Works as required. Once peat stocks were exhausted from one area, the temporary tracks were taken up and re-laid in new areas of bog which had entered production. Thus, over the decades the railway line layout changed shape regularly. Records of where and when the railway tracks were moved to and from over the decades have not been retained. The permanent tracks comprised one main railway route looping around the main body of the Application Site to the northeast of the Lemanaghan Works where stock de-loading, maintenance and refuelling occurred and the addition of permanent rail in the northern section of the Application Site once a level crossing across the L7002 local road was constructed in 1991.

The road network and access points described above remained the same throughout the proceeding decades since 1988.

The above still defines the present-day environment with the addition of 2 no. underpasses and 2 no. level crossings. One rail underpass is under the N62 to the west of the site granted in 1993 (Offaly Coco. Pl. Ref. 93/367) and one rail underpass is to the L7001 to the north of the Application Site boundary granted in 2002 (Offaly Coco. Pl. Ref. 02/1305). Three level crossings have been granted under the one application in 1991 (Offaly Coco. Pl. Ref. 91/220), 1 no. level crossing is adjacent to the Application Site boundary on the R436 Ballycumber Road and 1 no. level crossing is within the Application Site boundary on the L7002 local road passing through the north of the site. The third level crossing was permitted but was ultimately not constructed.

Standard level crossing lamps with light sensors that switched to light on when daylight faded were fitted across all Bord na Móna crossing gates. Catch points are also fitted into railway tracks on either side of level crossing gates as a standard safety practice to de-rail any runaway trains before reaching the level crossing. Wait times at level crossings were estimated at a maximum of 5 minutes on the basis that the level crossings were operated by the driver of the Peat Haulage Locomotives.

14.2.4 Traffic and Rail Movements

14.2.4.1 Peat Extraction Phase 1988 to June 2020

Traffic movements to and from the Application Site during the Peat Extraction Phase can be found in Table 14-1 below.

Peat Extraction Activities

All peat extracted from the Application Site between 1988 and June 2020 was delivered to end users via Bord na Mona's private rail network. No HGVs were used for peat deliveries during this time. Present in 1988 was a single underpass under the R436 regional road to facilitate rail movements that occurred due to the Project. Over the period 1991 to 2003, 2 no. underpasses and 2 no. level crossings were consented and constructed within and adjacent to the Application Site boundary. At the level crossing locations, road users were required to stop to allow rail cars cross. As identified above, the

underpasses allowed road users and the rail movements to take place independently without interaction.

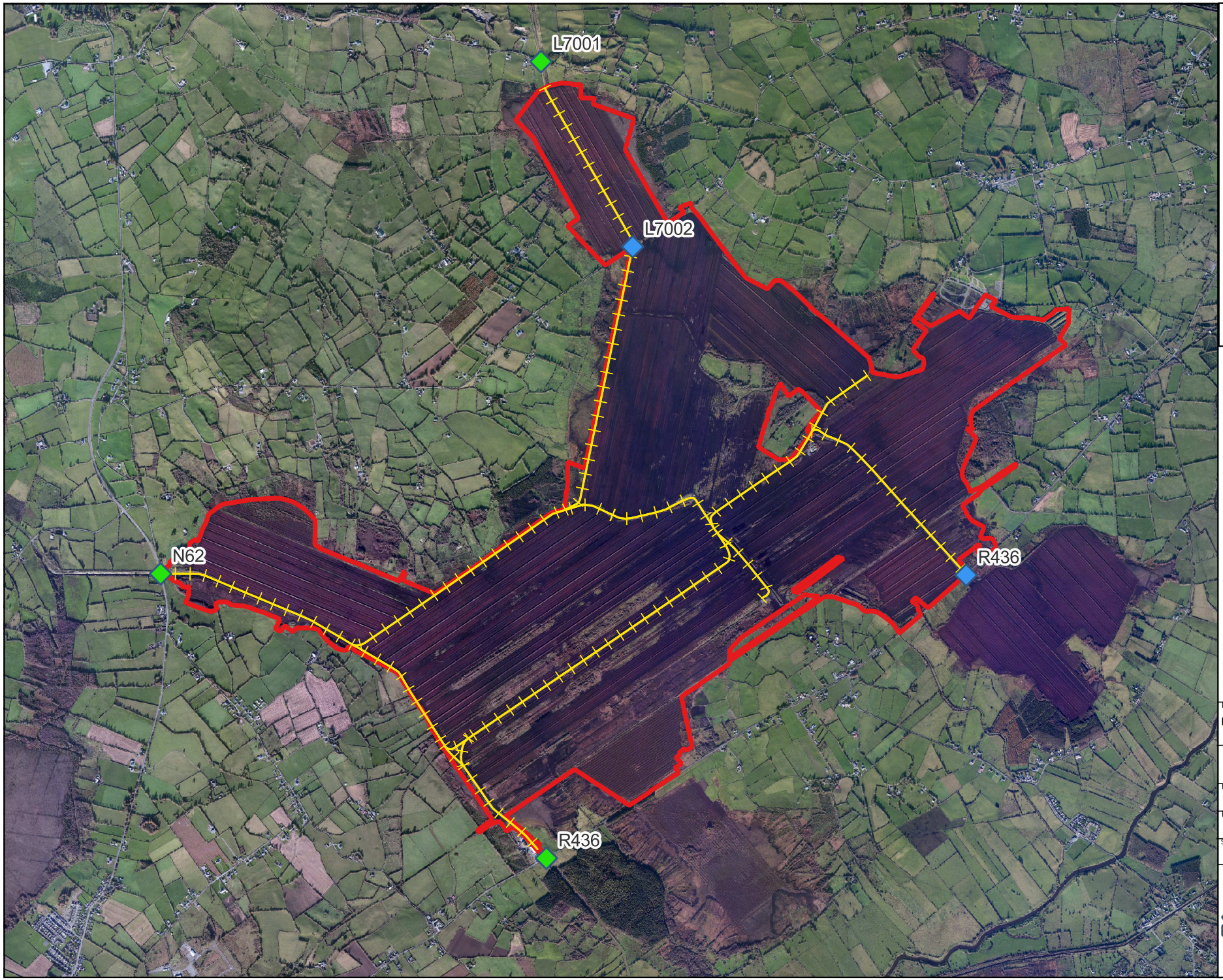
Figure 14-1 below identifies the locations of the 3 no. rail underpasses and 2 no. level crossings present during the Peat Extraction Phase that facilitated access to end-users via the internal private rail network adjacent to or within the Application Site.

Standard level crossing lamps with light sensors that switched to light on when daylight faded were fitted across all Bord na Móna crossing gates. Catch points are also fitted into railway tracks on either side of level crossing gates as a standard safety practice to de-rail any runaway trains before reaching the level crossing, though these elements are not yet decommissioned.

The average number of rail movements to the various end users are unknown as peat extraction figures and sales figures may differ across the years in the Peat Extraction Phase. An estimate of rail movements per year as a consequence of the Project based on peat extraction volumes and the maximum capacity of a Bord na Mona Peat Haulage Locomotive (100 tonnes) is represented in Table 14-1 below

It is estimated that over the 33-year period from 1988 to 2020 inclusive, 34,090 deliveries of peat were undertaken resulting in a total of 68,180 rail movements when return journey trips are counted. This resulted in a daily average number of 9 journeys, where the transportation of peat interacted with the public road network via level crossing at a total of 2 no. locations at the Application Site boundary. There was a total of 18 maximum potential interactions with the public road network at the 2 no. level crossings per day during the Peat Extraction Phase. In reality, the 1 no. underpass present in 1988 and additional 2 no. underpasses consented and constructed during the Peat Extraction Phase would have facilitated rail movements via the internal private rail network with no interactions with the public road network.

It should be noted that while extraction ceased in June 2020, rail movements continued beyond this date until 2023 where operations at the Application Site were focused on removing stockpiled from the Application Site to various end users via HGV , as detailed in Section 14.2.4.2 as part of the Current Phase.



Map Legend

- Application Site Boundary
- Bord na Mona Rail Line within Application Site Boundary

Rail Crossing Type

- Level crossing
- Rail underpass

N

Drawing Title
Existing Rail Infrastructure within and adjacent to the Application Site

Project Title
Extraction in Lemanaghan Bog, Co. Offaly

Drawn By	Checked By
SD	EC
Project No.	Drawing No.
200804-e	14-1
Scale	Date
1:35,000	2025-08-13

MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email:info@mkoireland.ie
Website: ww.mkoireland.ie

Personnel Traffic Movements

Employment figures at the Application Site for the year 1988 are estimated at 2 permanent employees and 13 seasonal employees. From 1988 to June 2020, the Applicant employed on average 15 employees per annum in peat extraction and ancillary activities at the Application Site. It is likely that staff numbers at the Application Site gradually declined in the years prior to 2020, as there is no record of a significant change to site activities between 1988 and 2020 that would account for the significant disparity in the estimated average numbers of staff up to 2020 versus the recorded average staff numbers from 2020 onwards at the Application Site. For the purposes of the assessment a gradual reduction in staff numbers in the years prior to 2020 is not assumed. Therefore, the projected staff movements in the years leading up to 2020 as outlined in Table 14-1 would in reality have been less.

While extracted peat was exported from the Application Site throughout the year, peat extraction itself was seasonal, only occurring from approximately April to September inclusive (i.e. 6 calendar months, corresponding to 126 workdays). As such, the majority of personnel travelled to and from the Application Site during these months only. The means by which personnel travelled to the Application Site included walking, cycling, by bus, by rail and by car. Using the precautionary principle, personnel traffic movements have been calculated assuming a car (i.e. an LGV), as the sole transport mode on the road network for all staff personnel and is assumed for full calendar year.

Using the precautionary principle, personnel traffic movements calculated in Table 14-1 considers the following:

- From the period 1988 – 2020 it is assumed all 15 personnel (2 permanent and 13 seasonal) travelled to and from the Application Site throughout the year in their own LGV (i.e for 252 days a year – 5 days a week, every week, excluding the 8 days of public holidays observed in Ireland by the baseline year of 1988). As detailed above, seasonal personnel would only travel for 6 months a year, but for the purposes of this assessment and to present a highly conservative precautionary scenario, it is assumed that the seasonal staff travelled all year round.
- From 2000 – 2020, 1 no. compliance officer was employed to undertake monitoring at the Application Site through an assumed 2 visits per month, 24 visits per year. The compliance officer is to undertake monitoring of the site in line with the IPC Licence (Licence No. P0500-01).
- Using the precautionary principle, it is assumed that every personnel member travelled alone to and from the Application Site from local towns, villages and rural settlements., hence a 1:1 ratio of personnel member to LGV has been used.
- Using the precautionary principle, staff personnel movements for the years 1988 and 2020 have been extrapolated from the full year of employment rather than the period from July 1988 to December 1988.

Therefore, for the period 1988-2020, 15 vehicles per day were considered to have travelled to the Application Site each day for 252 workdays. It is assumed that each vehicle took two trips per day i.e to and from the Application Site. Therefore, for the period 1988-2020, 30 LGV trips per day were considered to have travelled to and from the Application Site for 252 workdays.

Table 14-1 shown below identifies a total of 250,488 LGV traffic movements were generated by staff from 1988 to 2020 which equates to an annual average of 7,591 LGV movements or a daily average of 31 traffic movements. These figures all reflect 2 journeys to and from the Application Site for all personnel (permanent and seasonal) each travelling by an LGV for the full working year.

Therefore, the overall total traffic movements average 7,591 annual LGV movements or 31 daily movements for the Peat Extraction Phase.

Other Vehicular Movements

Further vehicular movements on the Application Site associated with activities such as construction work, general collections and deliveries, fuel deliveries and monitoring work would have taken place as required by rail, HGV, LGV and machinery such as tractors. Similarly, approximately 1 no. staff personnel have been continuously employed by the Applicant to undertake environmental monitoring of the Applicant's sites which have been operating under IPC Licence. Accordingly, vehicular movements associated with staff undertaking environmental monitoring would also have been generated through the year. The traffic movements of vehicles travelling to and from the Application Site are not considered significant when viewed in comparison to the number of movements associated with staff movements to and from the Application Site. Furthermore, under the assumption that 1 HGV would have come to the site per day for the entirety of the Peat Extraction Phase for activities such as construction work, fuel deliveries, maintenance activities, and collections and deliveries, a total of 16,632 HGV movements are included in this assessment. This is considered within the context that the traffic movements estimated for the Peat Extraction Phase have been identified on a highly conservative precautionary basis which allows other machinery, such as tractors be accounted for.

Summary

During the Peat Extraction Phase, there was a total combined road traffic movements of 267,120 to and from the Application Site from both HGVs and LGVs, with a yearly average and daily average of 8,617 and 33 respectively. In addition to this, there was a total of 68,180 rail movements interacting with the public road network to and from the Application Site as a consequence of the Project, with a yearly average and daily average of 2,066 and 9 respectively.

Table 14-1 Traffic Movements during the Peat Extraction Phase

		Peat Extraction Phase 1988 to June 2020					
Year	Annual Extracted Tonnes of peat	Rail Annual Rail Movements	Rail Average Daily Rail Movements Based on a 252 day work year	HGV Average HGV Movements Based on a 252 day work year	HGV Average daily HGV Movements Based on a 252 day work year	LGV Estimated Staff Movements Based on a 252 day work year	LGV Average daily LGV Movements Based on a 252 day work year
1988[2]	111,512	2,232	9	504	2	7,560	30
1989	111,512	2,232	9	504	2	7,560	30
1990	102,736	2,056	9	504	2	7,560	30
1991	102,736	2,056	9	504	2	7,560	30
1992	50,844	1,018	5	504	2	7,560	30
1993	90,412	1,810	8	504	2	7,560	30
1994	78,850	1,578	7	504	2	7,560	30
1995	97,736	1,956	8	504	2	7,560	30
1996	80,801	1,618	7	504	2	7,560	30

[2] *Whilst the Peat Extraction Phase commenced in July 1988, in order to present a precautionary scenario, the total volume of peat extracted for the full year is used to quantify traffic movements*

		Peat Extraction Phase 1988 to June 2020					
Year	Annual Extracted Tonnes of peat	Rail Annual Rail Movements	Rail Average Daily Rail Movements Based on a 252 day work year	HGV Average HGV Movements Based on a 252 day work year	HGV Average daily HGV Movements Based on a 252 day work year	LGV Estimated Staff Movements Based on a 252 day work year	LGV Average daily LGV Movements Based on a 252 day work year
1997	55,508	1,112	5	504	2	7,560	30
1998	66,628	1,334	6	504	2	7,560	30
1999	99,444	1,990	8	504	2	7,560	30
2000	113,605	2,274	10	504	2	7,608	31
2001	83,188	1,664	7	504	2	7,608	31
2002	74,265	1,486	6	504	2	7,608	31
2003	152,077	3,042	13	504	2	7,608	31
2004	139,429	2,790	12	504	2	7,608	31
2005	124,324	2,488	10	504	2	7,608	31
2006	102,138	2,044	9	504	2	7,608	31
2007	121,895	2,438	10	504	2	7,608	31
2008	83,177	1,664	7	504	2	7,608	31

		Peat Extraction Phase 1988 to June 2020					
Year	Annual Extracted Tonnes of peat	Rail Annual Rail Movements	Rail Average Daily Rail Movements Based on a 252 day work year	HGV Average HGV Movements Based on a 252 day work year	HGV Average daily HGV Movements Based on a 252 day work year	LGV Estimated Staff Movements Based on a 252 day work year	LGV Average daily LGV Movements Based on a 252 day work year
2009	80,054	1,602	7	504	2	7,608	31
2010	151,754	3,036	13	504	2	7,608	31
2011	99,101	1,984	8	504	2	7,608	31
2012	37,516	752	3	504	2	7,608	31
2013	175,628	3,514	14	504	2	7,608	31
2014	107,879	2,158	9	504	2	7,608	31
2015	113,289	2,266	9	504	2	7,608	31
2016	121,528	2,432	10	504	2	7,608	31
2017	138,551	2,772	11	504	2	7,608	31
2018	134,271	2,686	11	504	2	7,608	31
2019	136,411	2,730	11	504	2	7,608	31

		Peat Extraction Phase 1988 to June 2020					
Year	Annual Extracted Tonnes of peat	Rail Annual Rail Movements	Rail Average Daily Rail Movements Based on a 252 day work year	HGV Average HGV Movements Based on a 252 day work year	HGV Average daily HGV Movements Based on a 252 day work year	LGV Estimated Staff Movements Based on a 252 day work year	LGV Average daily LGV Movements Based on a 252 day work year
2020	68,205[3]	1,366	6	504	2	7,608	31
Peat Extraction Phase 1988-June 2020	3,407, 004 Total peat volumes extracted (tonnes)	68,180 Total Rail Movements	9 Average Daily Rail Movements	16,632	2 Average daily HGV movement	250,488 Total LGV movements	31 Average daily LGV movements
	Average Annual Rail Movements only		**2,066**	**Average Annual HGV Movements only**	**504**	**Average Annual LGV Movements only**	**7,591**

[3] *Whilst peat extraction ceased on the Application Site in June 2020, for the purposes of quantifying transport movements associated with rail movements that occurred due to the Project during the Peat Extraction Phase (July 1988 to June 2020) and the Current Phase (June 2020 to present day), the total peat extraction volume for the year 2020 is divided evenly over the course of the year into two 6-month blocks. For the Peat Extraction Phase, a total volume for January 2020 to June 2020 is identified (i.e half of the annual total) and for the Current Phase, a total volume for July 2020 to December 2020 is identified (i.e half of the annual total).*

14.2.4.2 Current Phase June 2020 to present day

Traffic and rail movements to and from the Application Site during the Current Phase can be found in Table 14-2 below.

Peat Stockpile Removal

Following the cessation of peat extraction in June 2020, stockpiled peat from the Application Site was supplied to the Derrinlough Briquette Factory until its closure in June 2023, and nearby ESB West Offaly Power Station. A majority of the stockpiled peat was moved from the Application Site to end-users by rail, with the remaining via HGV deliveries using the public road network. Sales Records, including the of number of deliveries made by HGV from the Application Site, have been provided by Bord na Móna

From June 2020 onwards, records identify that 55,514 tonnes of stockpiled peat were delivered to West Offaly Power Station and Derrinlough Briquette Factory by rail over 556 deliveries (1,112 rail movements.)

By the end of 2021, 85,204 tonnes were delivered from the Application Site to Derrinlough Briquette Factory by rail over 853 deliveries (1,706 rail movements).

A further 6,202 tonnes was delivered by rail from the Application Site to Derrinlough Briquette Factory by the end of 2022 over 62 deliveries (126 rail movements).(

In 2023, peat stockpiles totalling 830 tonnes were delivered to a third party via the public road network over 28 deliveries (56 traffic movements).

By the end of 2024, peat stockpiles totalling 3,074 tonnes were delivered to a third party via the public road network over 98 deliveries (196 traffic movements).

Thus, the total estimated HGV movements via the road network for peat stockpile removal during the Current Phase is 252 movements from June 2020 to the end of 2024, or an average of 51 movements per year or 0.2, rounded up to 1 HGV movements, per day (based on a 252 workday, as transportation and monitoring are not seasonal like extraction).

The total estimated rail movements that occurred due to the Project i.e peat stockpile removal, during the Current Phase is 2,944 from June 2020 to the end of 2022, an average of 981 movements per year for period June 2020 to end of 2022, or 3 movements per day for this period. As considered for the Peat Extraction Phase, it is assumed that rail movements that occurred due to the Project were concentrated at the 2 no. level crossings located on the L7002 and R346. The rail movements at these locations would in reality have been less given the presence of 3 no. rail underpasses.

Personnel Traffic Movements

The Applicant employed 4 No. permanent staff to facilitate the removal of stockpiled peat off the bog for transportation to a third party and Derrinlough Briquette factory, until the last of the stockpiles were removed by the end of 2024.

Using the precautionary principle, personnel traffic movements calculated in Table 14-2 considers the following:

- From the period 2020-2025, it is assumed all 4 personnel travelled to and from the Application Site throughout the year (i.e for 252 days a year).

- From the period 2025-present, it is assumed 1 compliance officer has travelled and will travel to and from the Application Site for 2 visits per month, 24 visits per year. The compliance officer is to undertake monitoring of the site in line with the IPC Licence (Licence No. P0500-01)
- Using the precautionary principle, it is assumed that every personnel member travelled alone to and from the Application Site from local towns, villages and rural settlements., hence a 1:1 ratio of personnel member to LGV has been used.

Therefore, for the period 2020 to present, 4 vehicles per day were considered to have travelled to the Application Site each day for 252 workdays with an additional 1 vehicle 2 times a month as the compliance officer travelled to the Application Site. It is assumed that each vehicle took two trips per day i.e to and from the Application Site. Therefore, 8 LGV trips per day were considered to have travelled to and from the Application Site for 252 workdays with an additional 4 trips per month, 48 trips per year for the compliance officer.

Please see Chapter 4 Description of Development for more details on the Current Phase activities. Please see Table 14-2 for the estimated annual traffic movements generated during the Current Phase.

The overall total LGV traffic movements combined up to the end of 2024 when the last of the stockpiles large enough to haul were removed is estimated to be 10,320 annual movements or 9 including the 4 no. staff and 1 no. compliance officer daily movements based on a 252-day work year.

Other Vehicle Movements

Further vehicular movements to and from the Application Site associated with activities such as construction work, general collections and deliveries, fuel deliveries and monitoring work would have taken place as required by rail, HGV, LGV and tractor. These traffic movements are not considered significant when viewed in comparison to the number of movements associated with staff movements to and from the Application Site. Furthermore, under the assumption that 1 HGV would have come to the site per day for the entirety of the Current Phase for activities such as construction work, general collections and deliveries, fuel deliveries and monitoring work. Therefore, a total of 2,520 additional HGV movements are included in this assessment. This is considered within the context that the traffic movements estimated for the Current Phase vehicles have been identified on a highly conservative precautionary basis.

As a result, for the period of 2020 to the end of 2024 in the Current Phase, there was a total combined traffic movements of 13,092to and from the Application Site from both HGVs and LGVs, with a yearly average and daily average of 2,619and 11 respectively.

Summary

During the Current Phase there was a total combined traffic movements of 13,092to and from the Application Site from both HGVs and LGVs, with a yearly average and daily average 2,619and 11 respectively. In addition to this, from June 2020 to the end of 2022 during the Current Phase, there was a total of 2,944 rail movements interacting with the public road network to and from the Application Site as a consequence of the Project, with a yearly average and daily average of 981 and 3 respectively.

Table 14-2 Traffic Movements during the Current Phase

Current Phase: June 2020 to present									
Year	**Stockpiled Peat Delivered**	**Rail**	**Rail**	**HGV**	**HGV**	**LGV**	**LGV**	**HGV & LGV**	**HGV and LGV**
		Annual Rail Movements Based on a 252 day work year	**Average Daily Rail Movements** Based on a 252 day work year	**Annual HGV Movements** Based on a 252 day work year	**Average daily HGV Movements** Based on a 252 day work year	**Estimated Staff Movements** Based on a 252 day work year	**Average daily LGV Movements** Based on a 252 day work year	**Total HGV and LGV Movements** Based on a 252 day work year	**Average Daily Movements** Based on a 252 day work year
2020	55,514	1,112	5	504	2	2,064	9	2,568	11
2021	85,204	1,706	7	504	2	2,064	9	2,568	11
2022	6,202	126	1	504	2	2,064	9	2,568	11
2023	830	0	0	560	3	2,064	9	8,128	11
2024	3,074	0	0	700	3	2,064	9	8,302	11
Total movements during Current Phase 2021-2024	150,824 tonnes removed	2,944 Total rail movements for the three year period	3 Average daily rail movements for the three year period	2,772Total HGV movements	3 Average daily HGV movements	10, 320 Total LGV movements	9 Average daily LGV movements	13,092Total LGV and HGV movements	11 Average daily HGV and LGV movements
		Average Annual Rail Movements only (3 years)	**710**	**Average Annual HGV Movements only**	***555***	**Average Annual LGV Movements only**			2,064
2025 to present [4]	N/A	0	0	504* estimated	2* estimated	2,064* estimated	9* estimated	2,568 HGV and LGV movements * estimated	11 HGV and LGV movements* estimated

[4] *Under a precautionary scenario, a full year is assumed for 2025 to present day.*

14.2.4.3 Remedial Phase

Traffic movements to and from the Application Site during the Remedial Phase can be found in Table 14-3 below.

It is a requirement of '*Condition 10 Cutaway Bog Rehabilitation'* of the IPC Licence (Reg. P0500-01) that the Applicant, prepare (to the satisfaction of the EPA) and implements a Cutaway Bog Decommissioning and Rehabilitation Plan for each bog within the Boora Bog Group, including the Application Site. The plan sets out the Applicant's proposal for the Application Site to facilitate and enhance peatland rehabilitation in order to bring about environmental stabilisation across Lemanaghan Bog. The Applicant have produced a Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan for the Application Site, and it is the intention of the Applicant to rehabilitate the bog in a phased approach under the IPC Licence. Please see Appendix 4-2 for details.

The Remedial Phase actions are divided into short- and long-term planning actions. As part of the short-term planning actions (0-2 years), the Applicant will undertake site wide ecological surveys, a drainage management assessment, implement drainage blocking and continue with environmental monitoring as outlined in the IPC Licence for the Application Site. These works will require 1-2 excavators and tractors at the Application Site per day and 1-2 personnel vehicles on site per day for the 2-year period. The tractors and excavators will be stored at the Lemanaghan Works site (adjacent to the Application Site) at the end of the workday; they will not utilise the public road network. The long-term phase (year 3 onwards) will entail 1-2 LGVs on site per month to evaluate the success of the plan and monitor silt ponds. There is also 1 no. compliance officer accounted for in these traffic figures for the Remedial Phase, assuming 2 visits per month, 24 visits per year. The compliance officer is to undertake monitoring of the site in line with the IPC Licence (Licence No. P0500-01). Please see Chapter 4 Description of Development for more details on the Remedial Phase activities.

For the purposes of estimating traffic generation from the above activities, 2 personnel vehicles per workday (2 vehicles on site for 252 days per year) are considered for the first 2 years and then 24 personnel vehicles per year are considered for the long-term phase over a period of 27 years. 1 no. compliance officer visiting 2 times per month, 24 times per year is assumed to continue for the duration of the Remedial Phase. Thus, there are no HGV traffic movements anticipated for the Remedial Phase.

The overall total of LGV traffic movements for the first 2 years of the Remedial Phase is estimated to be 2,112 movements or 5 daily movements based on a 252-day work year. The overall total of LGV traffic movements for the following 27-years of the Remedial Phase is estimated to be 2,592 movements or 96 annual traffic movements which equates to less than 1 per day, or 8 total movements per month based on a 252-day work year.

Table 14-3 Traffic Movements for the Remedial Phase

Remedial Phase				
Year	**Total HGV Movements per year**	**Average annual LGV Movements**	**Total LGV Movements over time-period**	**Average daily LGV Movements**
Year 1 and Year 2 (short term action plan)	0	1,056	2,112	5
Year 3 to year 30	0	96	2,592	Less than 1 per day
Total at the end of the Remedial Phase	0	157 Average annual Movements over 30-year period	4,704 Total LGV movements over 30-year period	Less than 1 per day

14.2.4.4 Traffic volumes generated in comparison to Average Annual Daily Traffic Count Data

Table 14-1 to Table 14-3 above sets out the traffic movements to and from the Application Site during the Peat Extraction Phase, Current Phase and Remedial Phase.

Table 14-4 below sets out the impact that the traffic movements generated during all three Project phases had or will have on the surrounding road networks using traffic count data from the TII website.

As detailed in Section 14.2.3, peat extracted on the Application Site was transported to one of a range of end destinations including the Blackwater Works, Shannonbridge Power station, West Offaly Power Station, Ferbane Power station, and Derrinlough Briquette Factory. The exact end destination and haul routes are uncertain, along with commuting routes for staff personnel. Using the precautionary principle, 4 TII count locations were identified in as close as possible to a North-East-South-West direction surrounding the Application Site. The purpose of identifying 4 proximate TII count locations at the Application Site is to identify Average Annual Daily Traffic (AADT) data for the Application Site's surrounding road network

The representative TII Count Locations selected are identified below and presented in Figure 14-1:

- **North of the Application Site:** TII Count Station TMU N62 100.0 S. Located on the N62 between Athlone and Ferbane, Ballynahown, Co. Westmeath. Earliest year that count data was collected: 2021
- **East of the Application Site**: TII Count Station TMU R420 010.0 N. Located on the R420 Between Clara and Tullamore, Loughaun, Co. Offaly. Earliest year that count data was collected: 2021.
- **South of the Application Site**: TII Count Station N52 150.0 E. Located on the N52 Between Birr and Kilcormac, Kilcormac, Co. Offaly. Earliest year that count data was collected: 2021.
- **West of the Application Site**: TII Count Station R446 120.0 E. R446 (Old N06) Between Loughrea and Ballinasloe, Cappataggle, Go. Galway. Earliest year that count data was collected: 2021

The earliest count data available at all four locations is for the year 2021. For all four locations the AADT is lowest for the year 2021 when compared to 2022, 2023 and 2024 and 2025 data. For the earliest year in the Peat Extraction Phase, 1988, it is considered that AADT values would have been lower than the 2021 AADT values, however, AADT count data for 1988 is unavailable. In order to estimate an AADT value that would be more representative of 1988, Census population data presented in Chapter 5 Section 5.4 of this rEIAR has been utilised. The population of the State increased by 45% from the year 1986 (Census Year) to 2022 (Census Year), and so, in order to present a precautionary scenario and align AADT data with the population at the time, TII AADT count data for 2021 is assumed to be 145% of the theoretical 1988 AADT Count, thus the TII AADT count data for 2021 has been reduced by 31% (45 as a percentage of 145), and a theoretical 1988 AADT Count has been deduced.

It should be noted that the average daily Project traffic movements (e.g., 31 daily HGV and LGV movements during the Peat Extraction Phase) leaving the Application Site would have travelled in various directions; however, as a conservative measure, Table 14-4 below calculates the impact of traffic movements associated with the Project as if all traffic movements were towards the same destination, i.e. 31 HGV and LGV movements are compared with the average annual daily traffic count on each available route. Therefore, the results below identify a much greater impact that would have occurred in reality.

The available TII traffic count data also includes a percentage of the daily recorded traffic which corresponds to HGVs. The Project's HGV movements are also represented as a percentage of the

lowest recorded daily traffic count. As can be seen, the Application Site generated HGVs during the Peat Extraction Phase and the Current Phases are at a much lower percentage than the average daily percent of HGVs that use these roads. Likewise, the average daily HGV and LGV traffic generated by the Application Site in all phases is much lower than the lowest, available, average daily traffic counted on these roads.

Table 14-4 Traffic movements generated by the Project in comparison with TII recorded daily averages along assumed chosen routes.

Representative Count Station and Location	AADT Data Year: 1988 [5]	TII % of AADT which was HGV	Peat Extraction Phase: 1988 to June 2020				Current Phase: June 2020 to present day					Remedial Phase	
			The Project's average Daily Traffic Movements from 1988 to June 2020 (LGV and HGV combined)	The Project's average daily traffic movements as % of lowest available ADDT (LGV and HGV combined)	The Project's average daily HGV movements	The Project's average daily HGV movements as a % of lowest available ADDT	TII AADT Data Year: 2020[6]	The Project's average Daily Traffic movements (LGV and HGV combined)	The Project's average daily traffic movements as % of lowest available ADDT (LGV and HGV combined)	The Project's average daily HGV movements	The Project's average daily HGV movements as a % of lowest available ADDT	The Project's average daily LGV traffic movements	The Project's average Daily traffic movements as % of lowest available ADDT
North of the Application Site: TMU N62 100.0 S N62 Between Athlone and Ferbane, Ballynahown, Co. Westmeath Data Year: 2021	2,726	7%	40	1.5%	2	<0.1%	3,950	11	0.27%	3	<0.1%	0.1	<0.1%

[5] For the Peat Extraction Phase, a theoretical 1988 AADT value has been quantified using Census population data for the State. The 31% reduction in State population between Census years 2021 and 1986 was also applied to the earliest TII Count data available i.e 2021.
6 TII 2021 Count Data

Representative Count Station and Location	AADT Data Year: 1988 [5]	TII % of AADT which was HGV	Peat Extraction Phase: 1988 to June 2020				Current Phase: June 2020 to present day					Remedial Phase	
			The Project's average Daily Traffic Movements from 1988 to June 2020 (LGV and HGV combined)	The Project's average daily traffic movements as % of lowest available ADDT (LGV and HGV combined)	The Project's average daily HGV movements	The Project's average daily HGV movements as a % of lowest available ADDT	TII AADT Data Year: 2020[6]	The Project's average Daily Traffic movements (LGV and HGV combined)	The Project's average daily traffic movements as % of lowest available ADDT (LGV and HGV combined)	The Project's average daily HGV movements	The Project's average daily HGV movements as a % of lowest available ADDT	The Project's average daily LGV traffic movements	The Project's average Daily traffic movements as % of lowest available ADDT
East of the Application Site: TMU R420 010.0 N R420 Between Clara and Tullamore, Loughaun, Co. Offaly Data Year: 2021	4,481	2.6%	40	<0.1%	2	<0.1%	6,494	11	0.17%	3	<0.1%	0.1	<0.1%

Representative Count Station and Location	AADT Data Year: 1988 [5]	TII % of AADT which was HGV	Peat Extraction Phase: 1988 to June 2020				Current Phase: June 2020 to present day					Remedial Phase	
			The Project's average Daily Traffic Movements from 1988 to June 2020 (LGV and HGV combined)	The Project's average daily traffic movements as % of lowest available ADDT (LGV and HGV combined)	The Project's average daily HGV movements	The Project's average daily HGV movements as a % of lowest available ADDT	TII AADT Data Year: 2020[6]	The Project's average Daily Traffic movements (LGV and HGV combined)	The Project's average daily traffic movements as % of lowest available ADDT (LGV and HGV combined)	The Project's average daily HGV movements	The Project's average daily HGV movements as a % of lowest available ADDT	The Project's average daily LGV traffic movements	The Project's average Daily traffic movements as % of lowest available ADDT
South of the Application Site: TMU N52 150.0 E N52 Between Birr and Kilcormac, Kilcormac, Co. Offaly Data Year: 2021	2,380	8.9%	40	1.7%	2	<0.1%	3,448	11	0.32%	3	<0.1%	0.1	<0.1%

Representative Count Station and Location	AADT Data Year: 1988 [5]	TII % of AADT which was HGV	Peat Extraction Phase: 1988 to June 2020				Current Phase: June 2020 to present day					Remedial Phase	
			The Project's average Daily Traffic Movements from 1988 to June 2020 (LGV and HGV combined)	The Project's average daily traffic movements as % of lowest available ADDT (LGV and HGV combined)	The Project's average daily HGV movements	The Project's average daily HGV movements as a % of lowest available ADDT	TII AADT Data Year: 2020[6]	The Project's average Daily Traffic movements (LGV and HGV combined)	The Project's average daily traffic movements as % of lowest available ADDT (LGV and HGV combined)	The Project's average daily HGV movements	The Project's average daily HGV movements as a % of lowest available ADDT	The Project's average daily LGV traffic movements	The Project's average Daily traffic movements as % of lowest available ADDT
West of the Application Site: TMU R446 120.0 E R446 (Old N06) Between Loughrea and Ballinasloe, Cappataggle, Go. Galway Data Year: 2021	2,080	5.2%	40	1.9%	2	<0.1%	3,014	11	0.36%	3	<0.1%	0.1	<0.1%

14.2.4.5 Rail movements

Table 14-1 to Table 14-2 above sets out the rail movements to and from the Application Site as a consequence of the Project during the Peat Extraction Phase and Current Phase.

As detailed in Section 14.2.3, peat extracted on the Application Site was transported to one of a range of end destinations including the Blackwater Works, Shannonbridge Power station, West Offaly Power Station, Ferbane Power station, and Derrinlough Briquette Factory. The exact end destination and haul routes are uncertain.

As detailed in Sections 14.2.4.1 and Section 14.2.4.2, the average daily Project rail movements (e.g., 9 daily rail movements during the Peat Extraction Phase and 3 daily rail movements during the Current Phase) leaving and returning to the Application Site have been identified under a highly precautionary scenario.

Using the precautionary principle, it is assumed that all rail movements travelled via the level crossings at the L7002 and R436, and there was a total of 18 maximum potential interactions with the public road network per day during the Peat Extraction Phase and 6 maximum potential interactions during the Current Phase.

Wait times at level crossings were estimated at a maximum of 5 minutes on the basis that the level crossings were operated by the driver of the Peat Haulage Locomotives. The wait time duration of a maximum of 5 minutes at the level crossings has been identified from personal communications with Bord na Móna Employees.

For the purposes of a highly precautionary assessment, it is assumed that all rail movements that occurred due to the Project via the internal rail network were concentrated at the 2 no. level crossing locations at the L7002 and R436 for the duration of the Peat Extraction Phase, where the internal rail network interacted with the public road network. During the Peat Extraction Phase, under a highly precautionary scenario, the waiting time for a road user at both level crossings maximum of 90 minutes per day[7]. The rail movements at these locations would in reality have been much lower given the presence of the 3 no. rail underpasses also facilitating the Project's rail movements.

For the purposes of a highly precautionary assessment, it is assumed that all rail movements that occurred due to the Project via the internal rail network were concentrated at the 2 no. level crossing locations at the L7002 and R436 for the 3 year period in the Current Phase, where the internal rail network interacted with the public road network. During the 3 year period of the Current Phase, under a highly precautionary scenario, the waiting time for a road user at both level crossings is a maximum of 30 minutes per day[8]. The rail movements at these locations would in reality have been much lower given the presence of the 3 no. rail underpasses adjacent to or within the Application Site boundary.

[7] This value is based on the average daily 9 no. rail movements taking place at both level crossing i.e total 18 no. rail movement across 2 no. level crossings.
[8] This value is based on the average daily 3 no. rail movements taking place at both level crossing i.e total 6 no. rail movement across 2 no. level crossings.

14.2.5 Assessment of Significant Effects and Mitigation Measures

14.2.5.1 'Do-Nothing' Option

As outlined in the EPA Guidelines (May 2022), the description of 'Do-Nothing Effects' relates to the environment as it would be in the future should the Project not be carried out. Peat extraction was underway at the Application Site prior to the required date for the transposition of the EIA Directive in 1988. If peat extraction and related activities had ceased from 1988 onwards, then consequently there would have been no further peat extraction from the site and therefore no impact on traffic and transport.

For those lands which as of 1988 had been subject to the installation of drainage in preparation for peat extraction but not peat extraction itself, it is assumed in the 'do-nothing' scenario that drainage would have remained in situ. Maintenance works to keep established drainage channels clear would have ceased as of 1988 in the 'do-nothing' scenario. It is likely that these areas would have been subject to natural recolonisation of the bog surface.

However, consideration must be given to the following:

- The legislative mandate given to Bord na Móna in the form of the Turf Development Act 1946, as amended) to acquire and develop peatlands; and
- The uncertainty with respect to the planning status of the activity did not arise until 2019 and was not evident in 1988.

Therefore, this 'Do-Nothing' option was not the chosen option. Peat extraction and ancillary activities have occurred at the Application Site from July 1988 onwards. A decision to cease peat extraction at the Application Site was taken in 2020 and the Application Site needs to be considered in the context of regularising (without prejudice) the planning status of the lands to facilitate future development (subject to planning consent as required). The Application Site has and will continue to revegetate, and there will be a change from areas of cutover peatland to revegetated peatland. These are described in the individual chapters of the rEIAR.

As part of Bord na Móna's statutory obligations under IPC Licence requirements, a Cutaway Bog Decommissioning and Rehabilitation Plan will continue to be implemented for the Application Site separate to, and independent of, the Substitute Consent application. The implementation of this plan is included in the impact assessment below.

14.2.5.2 Peat Extraction Phase: July 1988 to June 2020

Identification of Impact

Peat extraction and ancillary activities at the Application Site resulted in the concentration of daily personnel LGVs traffic movements to the Application Site in the mornings and from the Application Site in the evenings, particularly during the peat extraction season of April to September. It is estimated that an average of 30 staff personnel LGV movements were made to and from the Application Site each day during the Peat Extraction Phase.

The daily deliveries of peat out of the Application Site and subsequent return of empty carts by rail resulted in no HGV movements but an interaction with the public road network at 2 no. level crossing locations where the internal private rail network interacted with the public road network adjacent to or within the Application Site boundary. During the Peat Extraction Phase, there was a total of 68,180 rail movements interacting with the public road network to and from the Application Site as a consequence of the Project, with a yearly average and daily average of 2,066 and 9 respectively.

The average waiting times at each level crossing locations ranged from 42 minutes to 84 minutes per day. Impacts on road users due to the presence of level crossings to facilitate Bord na Móna locomotive movements to and from the Application Site is considered to have had a negative, moderate, long term effect on traffic volumes, roads and road users during the Peat Extraction Phase, which is Not Significant. This is based on a highly precautionary scenario and would have likely been less than this in reality due to the presence of 3 no. underpasses to facilitate rail movements.

General construction, fuel deliveries, maintenance activities, general collections and deliveries resulted in an estimated total of 2 movements by HGV per day, and subsequently a total of 16,632 HGV movements throughout the Peat Extraction Phase. This is based on a highly precautionary scenario and would have likely been less than this in reality, allowing us to account for occasional machinery, such as tractor movements.

The daily average of HGV and LGV traffic movements combined generated by the Application Site is 31 movements during the Peat Extraction Phase.

In comparison to the average annual daily traffic count and average annual daily HGV count for the theoretical year 1988 along the Application Site surrounding road network, the traffic numbers generated by the Application Site are considerably lower than the daily average. The average annual LGV and HGV traffic movements generated by the Project contributed to a range of <0.1% - 1.9% of the AADT (Year 1988) for the four representative TII count locations.

The traffic generated to and from the Application Site during the Peat Extraction Phase from 1988 to June 2020 is considered to have had a negative not significant long-term effect on traffic volumes, roads and road users, which is Not Significant.

Control Measures

- Peat deliveries from the Application Site out to various destinations were carried out during off-peak times only.
- The railway locomotives underwent continuous inspection and maintenance to prevent fires, accidents, fuel leaks and de-railments within the bog and at the level crossing locations at both the Application Site and wider rail network. Catch points were also fitted into railway tracks on either side of level crossing gates as a standard safety practice to de-rail any runaway trans before reaching the level crossing.
- The locomotives were fitted with beam lighting, electric windscreen wipers and driving mirrors for both directions of travel. Wagons were also designate as fire safety wagons and were stocked with various fire safety paraphernalia including hoses, buckets, breathing apparatus, first aid kit, drums of foam and foam making machine, extinguishers.
- Dust suppression measures were used when transporting peat loads to end users. Peat loads were secured with polythene film gauge sheets to prevent dust emissions to the atmosphere during transportation. (By c. 2008, fully enclosed bed trailers were used so dust generation from peat loads in transport was no longer an issue)
- Machinery crossing points on local roads between bogs were cleaned down at the end of each working day
- All HGVs underwent regular inspection and maintenance checks.
- All HGVs underwent wheel washing prior to leaving the Application Site to minimise the soiling of local roads.
- Only HGV licence holders operated the peat delivery vehicles and underwent regular re-training on HGV safety operations and vehicle maintenance.
- Refuelling of all HGV vehicles was undertaken at the Lemanaghan Works, adjacent to the Application Site or by using bunded mobile refuelling units on site where required

Residual Effect

The traffic generated to and from the Application Site during the Peat Extraction Phase from 1988 to June 2020 is considered to have had a negative imperceptible long-term effect on traffic volumes, roads and road users, which is Not Significant.

Given the low frequency of crossings, operation of the level crossing at off-peak times only and the presence of gates and sensory notification lighting, the impact on road users due to the presence of level crossings to facilitate Bord na Móna locomotive movements to and from the Application Site is considered to have had a negative, slight, long term effect on traffic volumes, roads and road users during the Peat Extraction Phase, which is Not Significant. This is based on a highly precautionary scenario and would have likely been less than this in reality due to the presence of 3 no. underpasses to facilitate rail movements.

Significance of Effects

The effects of the Peat Extraction Phase activities on traffic and transport from 1988 to June 2020 are considered not significant.

14.2.5.3 Current Phase: June 2020 to Present Day

Identification of Impact

Peat extraction ceased at the Application Site in June 2020. Traffic generated during the Current Phase comprised the removal of stockpiled peat at the Application Site to West Offaly Power Station, a third party and Derrinlough Briquette Factory, and staff personnel vehicles travelling to and from the Application Site. Stockpile removal was completed by the end of 2024. A majority of the stockpiled peat was moved from the Works to end-users by rail, with the remaining via HGV deliveries using the public road network.

The daily deliveries of peat out of the Application Site and subsequent return of empty carts by rail resulted in interaction with the public road network at 2 no. level crossing locations where the internal private rail network interacted with the public road network adjacent to or within the Application Site boundary. During the Current Phase, there was a total of 2,938 rail movements interacting with the public road network to and from the Application Site as a consequence of the Project, with a yearly average and daily average of 981 and 3 respectively.

The average total waiting times at each level crossing locations was approximately 15 minutes per day, totalling 30 minutes for the Application Site per day. Impacts on road users due to the presence of level crossings to facilitate rail movements to and from the Application Site as a consequence of the Project is considered to have had a negative, slight long term effect on traffic volumes, roads and road users during the Peat Extraction Phase, which is Not Significant. This is based on a highly precautionary scenario and would have likely been less than this in reality due to the presence of 3 no. underpasses to facilitate rail movements.

The daily movements of peat out of the Application Site and subsequent return of empty vehicles resulted in a concentration of HGV movements to and from the Application Site during off peak times. It is estimated that an average of 3 HGV movements were made to and from the Application Site each day, based on Bord na Móna's sales record and 1 HGV per day for construction work, general collections and deliveries, fuel deliveries and monitoring work. It is estimated that an average of 30 LGV staff movements were made, during the removal of stockpiled material, to and from the Application Site each day.

The daily average of HGV and LGV traffic movements combined generated by the Application Site is 11movements. This is considered to be conservative as vehicle movements to and from the Application Site reduced once the final volumes of stockpiled material were removed.

In comparison to the average annual daily traffic count and average annual daily HGV count reported by TII for the year 2020 along the Application Site surrounding road network, the traffic numbers generated by the Application Site are considerably lower than the daily average. The average daily LGV and HGV traffic movements generated by the Project contributed 0.17-0.36% of the AADT (Year 2020) for the representative TII count locations. The average annual HGV traffic generated by the Project contributed to less than 0.1% of daily traffic volumes on representative roads.

The traffic generated to and from the Application Site during the Current Phase is considered to have had a negative, short term, not significant effect on traffic volumes, roads and road users, which is Not Significant.

Control Measures

Control measures undertaken during the Current Phase are the same as those undertaken in the Peat Extraction Phase, as detailed in Section 14.2.5.2 above. In addition, as part of the Applicant's vision for a climate neutral Ireland by 2050, the Applicant encourages and promotes car sharing and cycle to work schemes where possible for its staff personnel. Therefore, there giving rise to the potential to reduce the daily LGV numbers travelling to and from at the Application Site.

Residual Effect

The traffic generated to and from the Application Site during the Current Phase is considered to have had a negative, short term, imperceptible effect on traffic volumes, roads and road users.

Given the low frequency of crossings, operation of the level crossing at off-peak times only and the presence of gates and sensory notification lighting when in use, the impact on road users due to the presence of level crossings to facilitate rail movements to and from the Application Site as a consequence of the Project is considered to have had a negative, not significant, long term effect on traffic volumes, roads and road users during the Current Phase

Significance of Effects

The effects of the Current Phase activities on traffic and transport are considered not significant.

14.2.5.4 Remedial Phase

Identification of Impact

During the Remedial Phase, ecologists, engineers and site operatives will oversee and undertake the process of rehabilitation including drain blocking which requires 1-2 HGVs at the Application Site for the first 2 years of the Remedial Phase. These HGVs will not utilise the public road network; they will cross the road once in the morning and once in the evening to track back to the Works where they will be stored but will not contribute to traffic flow numbers. It is estimated that 1-2 LGVs will travel to and from the Application Site each day for the first two years. After that, just 1-2 LGVs will be required to visit the Application Site each month to inspect the progress of the remedial measures.

In comparison to the average annual daily traffic count data reported by TII along representative roads the LGV numbers generated by the Application Site for this phase are considerably lower than the daily average annual traffic count numbers. It is estimated that the LGV traffic generated by the

Application Site for this phase will contribute to less than 0.1% of daily traffic volumes on representative roads.

Impacts on road users due traffic movements produced by the Application Site is expected to have a negative, not significant, long term effect on traffic volumes, roads and road users during the Remedial Phase, which is Not Significant.

Mitigation Measures

- All HGVs used on site will undergo regular inspection and maintenance checks.
- All HGVs used on site will undergo wheel washing prior to crossing the local road network to access other bogs or return to the Lemanaghan Works for storage.
- Only HGV licence holders will operate the HGVs and will undergo regular re-training on HGV safety operations and vehicle maintenance.
- Refuelling of all HGV vehicles will be undertaken at the Lemanaghan Works only.
- Machinery crossing points on local roads between bogs will be cleaned down at the end of each working day.
- Car sharing by personnel and bike to work schemes will be encouraged. As part of the Applicant's vision for a climate neutral Ireland by 2050, the applicant encourages and promotes car sharing and cycle to work schemes where possible for its personnel.

Residual Effect

The estimated traffic levels generated to and from the Application Site during the Remedial Phase is considered to have had a negative, long term, imperceptible effect on traffic volumes, roads and road users, which is Not Significant.

Significance of Effects

The effects of the Remedial Phase activities on traffic and transport are considered not significant.

14.2.6 Cumulative and In-Combination Effects

14.2.6.1 Peat Extraction Phase (July 1988 - June 2020)

The potential cumulative and in-combination effects of peat extraction and ancillary activities at the Application Site with other relevant activities/projects from 1988 to 2020 are considered below. Further information on activities or developments as part of the cumulative assessment are given in Chapter 2: Background.

Given that during the Peat Extraction Phase, peat extraction and ancillary activities were well established at the Application Site, it is considered that traffic movements that took place between 1960 and 1988 (i.e. between the commencement of peat extraction and before the EIA Directive was required to be transposed into Irish law), would have been less than during the Peat Extraction Phase as the level of annual average peat extraction is estimated to be lower than the 1988 to 2020 period. As detailed in Section 4.3.3 of Chapter 4: Description of the Development, Bord na Móna records indicate that sod peat was extracted from the Application Site for the period 1961 to 1984 inclusive. In 1984 sod peat production was ceased and the transition to milled peat extraction commenced. As detailed in Section 3.3.6 in Chapter 3, milled peat extraction allowed for increased yields on peat volumes that were extracted. The potential cumulative effect of the peat extraction and ancillary activities that took place prior to 1988 with the Project are considered to have had a negative, long term, imperceptible effect on traffic volumes, roads and road users, and is Not Significant.

In addition to this, with respect to land uses such as peat extraction, agriculture and forestry in the wider area, the potential cumulative effect on traffic volumes, roads and road users arising from traffic and rail movements that occurred due to the Project and land-uses in the wider area is considered to have had a negative long-term slight cumulative effect on traffic volumes.

14.2.6.2 Current Phase (June 2020 – Present Day)

The potential cumulative and in-combination effects with other relevant activities/projects with Current Phase activities at the Application Site are considered in the following text. Further information on activities or developments as part of the in-combination assessment are given in Chapter 2: Background.

Other projects and activities as described in the cumulative assessment in Chapter 2 of this rEIAR have had the potential to generate traffic movements associated with day to day roads users and local industry such as agriculture for the period from June 2020 to present day. Therefore, in combination with the traffic movements in the area from other projects, the potential for the Current Phase activities are considered to have had a negative, short term, imperceptible effect on traffic volumes, roads and road users, and is Not Significant.

14.2.6.3 Remedial Phase (June 2020 – Present Day)

The potential cumulative and in-combination effects with other relevant activities/projects with Remedial Phase activities at the Application Site are considered below. Further information on activities or developments as part of the in-combination assessment are given in Chapter 2: Background.

It is intended to utilise the Application Site for both peatland rehabilitation and wind energy infrastructure and to facilitate environmental stabilisation of the Application Site and the optimisation of climate action benefits.

Lemanaghan DAC, a joint venture between SSE Renewables and Bord na Móna Powergen Ltd. a subsidiary of Bord na Móna plc. (i.e the Applicant) are proposing a wind energy development consisting of 15 turbines with an overall blade to tip height of 220m[9] at the Application Site. A separate EIAR and accompanying NIS are being undertaken for the proposed Lemanaghan Wind Farm development. At the time of writing, the planning application for this development has not yet been submitted to An Coimisiún Pleanála.

The implementation of the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan in conjunction with the construction, operation and decommissioning of the Lemanaghan Wind Farm as well as proposed, permitted and operational plans and projects listed in Chapter 2 of its EIAR is considered. As detailed in Section 14.2.5.4, the potential effect of the Remedial Phase of the Project on traffic and transport is considered a short-term, imperceptible negative effect. There is a potential for increased traffic movements associated with the implementation of the rehabilitation works identified in the Remedial Phase. The overall footprint of the Lemanaghan Wind Farm will be less than 3% of the total area of the Application Site and therefore will not impact or change the overall goals and outcomes of the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan. As such, it is the intention of the Applicant to integrate the peatland remedial measures with the proposed future wind farm. The effect of the construction, operational and decommissioning phases of the proposed Lemanaghan Wind Farm in combination with the Remedial Phase of the Project is not considered to be significant, given the nature of the Remedial Phase works. As such the potential cumulative effect of the Project with the proposed Lemanaghan Wind Farm is considered to be a potential slight, negative, short term, effect on traffic volumes, roads and road users.

The EIAR for the proposed Lemanaghan Wind Farm development will detail issues related to peat management during wind farm construction. In summary, during construction for access tracks,

[9] https://www.lemanaghanwindfarm.ie/

hardstands and other areas, peat is excavated from the cutaway, moved to the side, graded into berms not more than 1m and allowed to naturally re-vegetate. This has proven successful during construction of Mountlucas, Cloncreen and Derrinlough Wind Farms. In the event that natural re-vegetation was unsuccessful, then other measures such as re-seeding would be considered.

Furthermore, cumulative effects when considering the existing Leabeg Wind Farm, Cloghan Wind Farm, Derrinlough Wind Farm, the proposed Umma More Wind Farm, and any other listed plans or projects listed in Chapter 2 of this rEIAR are considered not significant given the nature of the Remedial Phase works.

14.3 Other Material Assets

14.3.1 Introduction

14.3.1.1 Background and Objectives

The purpose of this section is to assess the effects of the Project on material assets such as telecoms, aviation, utilities and waste management.

14.3.1.2 Guidance and Legislation

This section of the rEIAR has been completed in accordance with the guidance set out in Chapter 1. The assessment uses standard terminology to describe the likely significant effects associated with peat extraction and ancillary activities at the Application Site. Further information on the classification of effects used in this assessment is presented in Section 1.7.2 of this rEIAR.

14.3.1.3 Scoping and Consultation

The scope for this assessment has been informed by consultation with statutory consultees, bodies with environmental responsibility and other interested parties as outlined in Section 2.4of Chapter 2 of the rEIAR. Scoping was carried out in line with the recommendations set out in May 2022 *Guidelines on the information to be contained in Environmental Impact Assessment Report*. A full description of the scoping and consultation exercise is provided in Section 2.4 of Chapter 2 of this rEIAR. The assessment of likely significant effects on material assets uses the standard methodology and classification of impacts as presented in Section 1.7.2 of Chapter 1 of this rEIAR.

Scoping for the Project was undertaken originally in September 2022 and again, due to the passage of time, in June 2024.

Uisce Eireann

A scoping request was issued to Uisce Eireann (formerly known as Irish Water) on the 30th of August 2022 and again on the 21st of June 2024. No acknowledgement of the request was received from Uisce Eireann.

Waterways Ireland

A scoping request was sent to Waterways Ireland on the 30th of August 2022. No response was received.

Another scoping request was issued to Waterways Ireland on the 21st of June 2024. A response was received on the 24th of June confirming that the Application Site is not within any Zone of Influence of their waterways and therefore they will not be commenting.

Department of the Environment, Climate and Communications

A scoping request was sent to the Department of the Environment, Climate and Communications (DECC) the 30th of August 2022. Another scoping request was issued to the DECC on the 21st of June 2024, and a follow up on the 20th of September 2024. No response has been received from the DECC with regards to the Lemanaghan Substitute Consent Application to date.

ESB

A scoping request was issued to the ESB on the 30th of August 2022. No response was received. Another scoping request was issued to the ESB on the 21st of June 2024. No response was received.

Eirgrid

A scoping request was issued to Eirgrid on the 30th of August 2022. No response was received. Another scoping request was issued to Eirgrid on the 21st of June 2024. No response was received.

14.3.2 Methodology

The EPA Guidelines on the information to be contained in EIARs (2022) states that material assets are taken to mean built services and infrastructure, roads and traffic and waste management. This section of the assessment focuses on those material assets other than traffic, which has been assessed in Section 14.2. This section assesses built services and infrastructure which have not already been addressed elsewhere in this rEIAR. The potential impacts on built services and infrastructure, if any, are assessed in terms of the following:

- Electricity;
- Gas Supply;
- Water Supply;
- Surface Water Infrastructure;
- Wastewater;
- Waste Management; and,
- Telecommunications and Aviation.

This section of the assessment provides a review of the material assets located within the Application Site and immediate surrounds which may have been impacted by the activities undertaken at the Application Site during the Peat Extraction Phase, Current Phase and Remedial Phase.

14.3.2.1 Annual Environmental Reports

Annual Environmental Reports (AERs) have been produced by the Applicant and submitted to the EPA annually since 2000 when the Application Site began to operate under IPC Licence (Reg. P0500-01). AERs are submitted to the EPA by March 1st each year and include at minimum the information included in *Schedule 4 Recording and Reporting* to the Agency. The AERs include the amount of energy utilised, waste produced (type, reuse and disposal methods), and emissions for the whole Boora Bog Group, which include, but are not specific to, the Application Site. Therefore, figures such as waste volumes reported are higher than what was actually produced at the Application Site. AERs relating to IPC Licence P0500-01 are included in Appendix 4-3.

14.3.3 Establishment of Baseline (July 1988)

14.3.3.1 Electricity

It is unknown when a power supply was first established at the Application Site, but it is likely to have occurred simultaneously with the electrification of Ferbane in 1957, if not before, when the Ferbane power station was built between 1953 and 1957. Peat extraction equipment used on the Application

Site that was electrically powered would have been energised via an internal electrical network which would have been actively in use on the Application Site. A reference to an existing power supply is included in a 1981 application for a harvester repair bay at the Works (Planning reference 81/375, located adjacent to the Application Site). Please see Chapter 4 Description of Development for details.

14.3.3.2 Gas Supply

A data request was sent to Gas Networks Ireland in May 2025. The data return concluded there are no gas pipelines within the Application Site, nor are there any records of any having existed at the Application Site.

14.3.3.3 Water Supply

There are no records of any water networks at the Application Site in 1988. At the Works, which is located outside of the Application Site boundary, surface water drainage systems implemented as part of building and hardstand construction over the decades discharged into the adjacent Application Site peatlands surface water drainage network. Machine washings generated due to the cleaning of various plant machinery at both the Application Site and at wash bays at the Works also drained into the adjacent Application Site peatlands drainage system.

14.3.3.4 Wastewater

There are no underground sewerage networks within the Application Site, nor are there any records of any having existed at the Application Site.

Welfare facilities were provided for employees involved in peat extraction; however, site-specific details pertaining to the construction and design of welfare facilities when they were constructed pre-1988 for the Application Site are not available. Typically, the Applicant's onsite welfare facilities included toilet facilities which served work and tea centres and were discharged into a septic tank. Final effluent from these treatment units typically with the effluent discharged to a percolation system through peat before penetrating to ground.

14.3.3.5 Waste Management

Waste records do not exist for the Application Site for 1988. However, waste records do exist for the Peat Extraction Phase from 2000 onwards. Given that the activities ongoing at the Application Site during 1988 were the same as those which were ongoing during the Peat Extraction Phase, it is considered that the records of waste types which were generated for the Peat Extraction Phase (as per the AERs) are representative of the waste types generated at the 1988 baseline. Waste that would have been generated in July 1988 comprised the items listed below. The majority of these items were stored in a waste deposition area on the Application Site.

- Heavy and light fuels;
- Waste oils (lubricating oil, hydraulic oil) and brake fluids;
- Antifreeze;
- Scrap metal;
- Wet and dry batteries;
- General waste;
- Solvents;
- Oil filters;
- Paper and cardboard;
- Glass;
- Wood;
- Biodegradable kitchen and canteen waste;
- Workshop waste;

- Packaging waste; and
- Waste plastic (primarily in the form of polythene sheeting).
- Boiler ash (Up to 2004) .

14.3.3.6 Telecommunications and Aviation

There were no known telecommunications links established across the Application Site by 1988.

14.3.4 Peat Extraction Phase: July 1988 to June 2020

14.3.4.1 Electricity

14.3.4.1.1 *Grid Infrastructure*

The 220kV Shannonbridge to Maynooth overhead transmission line traverses the north of the Application Site in a southwest to northeast orientation. Peat extraction was underway at the Application Site prior to the installation of this line in 1967 and extraction operations continued in this bog until June 2020 with no interference or impact on electricity services. Safety measures were and in place to ensure no physical interaction with any machinery associated with peat extraction and ancillary activities and the line occurred.

14.3.4.1.2 *Electrical Supply Infrastructure*

Electricity supply to Lemanaghan Works buildings and workshops, and also to the drainage pump stations, and the onsite welfare facility are powered by mains electricity from the national grid connected to overhead electrical power lines. The Ferbane Power Station, which was situated in the Boora Bog, 6.1km south southeast of the Application Site, had been in operation since 1957 and remained operational until its closure in 2000 and demolition in 2002. During this period, Offaly County Council granted permission for an extension to this power station in 1990 (planning reference 90/80).

14.3.4.2 Gas

A data request was sent to Gas Networks Ireland in May 2025. The data return concluded there are no gas pipelines within the Application Site.

14.3.4.3 Water Supply

The water supply at the Lemanaghan Works, adjacent to the Application Site, and a smaller additional welfare facility onsite is from the local mains water supply. The location of the mains water supply infrastructure or any other underground water networks within the Application Site are unknown. Uisce Eireann have been consulted as part of the scoping process for the proposed Lemanaghan Wind Farm application in November 2024, followed up with on the 11th July and again on the 21st July. No response has been received to date regarding infrastructure within the Application Site boundary Further details on scoping are outlined above in Section 14.3.1.3

Welfare facilities were provided for employees involved in peat extraction; however, site-specific details pertaining to the construction and design of welfare facilities pre 1988 for the Application Site are not available. Typical Bord na Móna on site welfare facilities included toilet facilities which discharged into a septic tank.

At the Works, which is located outside of the Application Site boundary, surface water drainage systems implemented as part of building and hardstand construction there over the decades discharged into the adjacent Application Site peatlands surface water drainage network at the Application Site.

Machine washings generated due to the cleaning of various plant machinery at both at the Application Site and at wash bays at the Works also drained into the adjacent Application Site peatlands drainage system.

Onsite welfare facilities relating to Lemanaghan Bog, include the Lemanaghan works, adjacent to the Application Site, and a smaller welfare facility within the Application Site boundary (approximate location at 53.298054 N, -7.753233 E). This welfare facility comprises a c. 6m by 10.6m building covering approx. 60m^2, in Lemanaghan Bog in the townland of Lemanaghan, Co. Offaly. The facility includes a septic tank and provided welfare facilities for workers at the Application Site during the Peat Extraction Phase. This facility was constructed between 2004 and 2009.

The nearest Public Water Supply (PWS) is the Ferbane PWS 6km west of the Application Site. The Application Site is located more than 5km away from the Source Protection Area (SPA) for the Ferbane PWS. The potential for the peat extraction and ancillary activities to impact the hydrogeology of the Ferbane PWS has been reduced as the bog drainage regime was already largely in place at the time the source boreholes were drilled (1985). The natural hydrological and hydrogeological regime of peat bogs, with little groundwater recharge and high runoff rates, also limit the potential effects that peat extraction may have had on local groundwater abstractions including the Ferbane PWS. The Application Site is not located within the mapped SPA area to the Ferbane PWS. Please see Chapter 8 Hydrology and Hydrogeology for further details.

14.3.4.4 Wastewater

There are no underground sewerage networks within the Application Site, nor has there been a record of any.

Welfare facilities were provided for employees involved in peat extraction; however, site-specific details pertaining to the construction and design of welfare facilities when they were constructed pre-1988 for the Application Site are not available. The Applicant's onsite welfare facility included toilet facilities which discharged into a septic tank. Final effluent from these treatment units typically discharged to a percolation area before penetration to ground.

The Welfare Facility located near the centre of the Application Site comprises a c. 6m by 11m building covering approx. 52m^2. The facility includes a septic tank and provided welfare facilities for workers at the Application Site during the Peat Extraction Phase. This facility was constructed between 2004 and 2009.

14.3.4.5 Waste Management

Waste records do not exist for the Application Site for 1988. However, waste records exist for the Peat Extraction Phase from 2000 onwards and are summarised below. Waste that would have been generated in during the Peat Extraction Phase comprised the items listed below.

- Heavy and light fuels;
- Waste oils (lubricating oil, hydraulic oil) and brake fluids;
- Antifreeze;
- Scrap metal;
- Wet and dry batteries;
- General waste;
- Solvents;
- Oil filters;
- Paper and cardboard;
- Glass;
- Wood;
- Biodegradable kitchen and canteen waste;

- Workshop waste;
- Packaging waste;
- Waste plastic (primarily in the form of polythene sheeting); and,
- Boiler ash (Up to 2004).

14.3.4.6 Telecommunications and Aviation

A telecommunications scoping exercise was undertaken as part of the proposed Lemanaghan Wind Farm application in November 2021 and again in March 2025. The scoping exercise concluded that there are no fixed position telecommunication masts within the Application Site. In November 2020, there were five telecommunications operators with 10 no. links or communication channels between masts traversing the Application Site. By March 2025, this increased to seven telecommunications operators with 14 no. links which traverse the Application Site as well as 1 no. Mast within 50m of the Application Site boundary. This mast, on Corr Hill Co, Offaly, was granted in 1996 (Offaly County Council Plan. Ref. 96/494) and currently facilitates 8 of the total 14 links currently operating.

It is assumed that the 10. no telecommunications links present in November 2020 were present for the Peat Extraction Phase. These links would have passed over and above the Application Site sending and receiving messages from one tower mast to another. These are not tangible links that can be impacted by peat extraction or related activities on the ground. The first link was an RTE 2 Radio Network (2rn) link and was established in 1996, the remaining links were established from 1997 onwards with continuous retention permissions and upgrades over the years, thus demonstrating the viability of the telecommunications alongside the peat extraction industry. Peat extraction and ancillary activities have been in operation at the Application Site for decades prior to the implementation of these telecommunication links and the Applicant's activities have and continue, to operate harmoniously with these communication assets for decades.

A scoping exercise for the proposed Lemanaghan Wind Farm was also undertaken with the Department of Defence and the Irish Aviation Authority (IAA). Neither statutory body indicated any potential assets in the area which may be impacted by past or proposed activities at the Application Site.

Please see scoping responses with telecommunication operators, the Department of Defence and the IAA pertaining to the proposed Lemanaghan Wind Farm in Appendix 14-1.

14.3.5 Current Phase: June 2020 to present day

14.3.5.1 Electricity, Gas, Water Supply, Wastewater, Telecommunications and Aviation

The material assets described in the Peat Extraction Phase under these headings are considered the same for the Current Phase. There have been no onsite changes or new applications for nearby links or aviation assets in the surrounding landscape that could be impacted by the Current Phase at the Application Site.

14.3.5.2 Waste Management

Waste that is typically generated during the Current Phase comprises the items listed below.

- Heavy and light fuels;
- Waste oils (lubricating oil, hydraulic oil) and brake fluids;
- Antifreeze;
- Scrap metal;
- Wet and dry batteries;

- General waste;
- Solvents;
- Oil filters;
- Paper and cardboard;
- Glass;
- Wood;
- Biodegradable kitchen and canteen waste;
- Workshop waste;
- Packaging waste; and
- Waste plastic (primarily in the form of polythene sheeting)

All waste awaiting deposition is collected in a skip or appropriate waste receptacle at the Works prior to collection and transportation by a licenced waste collection contractor to a suitably licenced/permitted facility for offsite reuse/recycling/recovery/disposal as appropriate.

14.3.6 Remedial Phase

14.3.6.1 Electricity, Gas, Water Supply, Wastewater, Telecommunications and Aviation

These material assets described in the Peat Extraction Phase and Current Phase are considered the same for the Remedial Phase at the time of writing. The Remedial Phase will comprise drainage blocking as part of the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan associated with Condition 10 of the IPC Licence (see Section 4.9.1 of Chapter 4 Description of Development for further detail) and routine environmental monitoring associated with the IPC Licence.

No interaction with material assets listed above are foreseen.

14.3.6.2 Waste Management

The Applicant has committed to continuing compliance with conditions outlined in the IPC Licence during the Remedial Phase, where applicable. Waste generated during the Remedial Phase will be limited to general waste generated by the limited on-site staff, which will be transported off site by a licenced waste collection contractor and transported to a suitably licenced/permitted facility for offsite reuse/recycling/recovery/disposal as appropriate.

14.3.7 Assessment of Significant Effects and Mitigation Measures

14.3.7.1 'Do-Nothing' Option

As outlined in the EPA Guidelines (May 2022), the description of 'Do-Nothing Effects' relates to the environment as it would be in the future should the Project not be carried out. Peat extraction was underway at the Application Site prior to the required date for the transposition of the EIA Directive in 1988. If peat extraction and related activities had ceased from 1988 onwards, then consequently there would have been no further peat extraction from the site and therefore no impact on material assets.

For those lands which as of 1988 had been subject to the installation of drainage in preparation for peat extraction but not peat extraction itself, it is assumed in the 'Do-Nothing' scenario that drainage would have remained insitu. Maintenance works to keep established drainage channels clear would have ceased as of 1988 in the 'do-nothing' scenario. It is likely that these areas would have been subject to natural recolonisation of the bog surface.

However, consideration must be given to the following:

- The legislative mandate given to Bord na Móna in the form of the Turf Development Act 1946, as amended) to acquire and develop peatlands; and
- The uncertainty with respect to the planning status of the activity did not arise until 2019 and was not evident in 1988.

Therefore, this 'Do-Nothing' option was not the chosen option. Peat extraction and ancillary activities have occurred at the Application Site from July 1988 onwards. A decision to cease peat extraction at the Application Site was taken in 2020 and the Application Site needs to be considered in the context of regularising (without prejudice) the planning status of the lands to facilitate future development (subject to planning consent as required). The Application Site has and will continue to revegetate, and there will be a change from areas of cutover peatland to revegetated peatland. These are described in the individual chapters of the rEIAR.

As part of Bord na Móna's statutory obligations under IPC Licence requirements, the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan will continue to be implemented for the Application Site separate to, and independent of, the Substitute Consent application. The implementation of this plan is included in the impact assessment below.

14.3.7.2 Peat Extraction Phase: July 1988 to June 2020

14.3.7.2.1 *Electricity*

Identification of Impact

The 220kV Shannonbridge to Maynooth overhead transmission line traverses the north of the Application Site in a southwest to northeast orientation. Peat extraction was underway at this location prior to the installation of this line in 1967 and peat extraction continued at the Application Site until June 2020 with no interference, impact or injury reported.

As described in Chapter 4: Description of the Development, some peat extraction machinery was powered by electricity from overhead lines associated with an internal electricity network. However, the transition to mostly diesel-powered machinery began in the 1980s, mitigating the reliance on the electrical network to power machinery. Nonetheless, for the purposes of this assessment, it is considered that peat extraction machinery was in part powered by the internal electrical network during the Peat Extraction Phase. Additionally, electricity was required to power the welfare facilities, offices, and railway crossing infrastructure. Drainage pumps which were located on the bog (refer to Chapter 4 Description of Development) were powered by electricity.

AERs prepared on an annual basis in compliance with the conditions of IPC Licence P0500-01 provide total energy consumption figures for the Boora Bog Group (within which the Application Site is located). There are no specific energy usage figures for the Application Site.

Electricity demand for the Peat Extraction Phase is considered to have been relatively minor given the level of activity on the Application Site. Therefore, the pre-mitigation effect on electricity supply during the Peat Extraction Phase is considered to be long term, slight, and neutral, which is Not Significant.

Control Measures

- When working near power lines, all of the Applicant's sites followed the measures as referenced in the IPC Licence below:
  - *All staff were required to be trained on the routes and operating voltages of overhead electricity lines running across or near Bord na Móna landholdings.*

- *All staff were required to be trained to be aware of the risks associated with overhead lines.*
- *All contractors that may have visited the sites were made aware of the location of lines before they came on to site.*
- *Information on safe clearances was provided to all staff and bog visitors.*
- *The suitability of machinery and equipment for use near power lines was risk assessed.*
- *Signage was erected in canteens and on site.*
- *Goalposts, when used, were required not to exceed a height of 4.2 metres, unless specifically agreed with ESB Networks*
- *Barriers were required to run parallel to the overhead line at a minimum horizontal distance of 6 metres on plan from the nearest overhead line conductor wire.*
- *On occasions when work was required be carried out beneath overhead lines, a site-specific risk assessment was undertaken prior to any works. The risk assessment was required to take into account the maximum potential height that could be reached by the plant or equipment that would have been used prior to any works. Overhead line proximity detection equipment was fitted to machinery when such works were required.*

- Since 2005, all of the Applicant's operations are in full accordance with The Safety, Health and Welfare Act 2005.

Residual Effect

Peat extraction and ancillary activities had no impact or interactions on the quality or supply of electricity from overhead power lines. Safety at work measures were in place at the Application Site to ensure no physical interaction between machinery and the line occurred.

Therefore, the residual effect on electricity supply during the Peat Extraction Phase is considered to be long term, not significant, and neutral, which is Not Significant.

Significance of Effects

Based on the assessment above there was no significant effect on electricity supply during the Peat Extraction Phase.

14.3.7.2.2 *Water Supply*

Identification of Impact

The water supply at the Lemanaghan Works, adjacent to the Application Site, and a smaller additional welfare facility onsite is from the local mains water supply.

The nearest public water supply (PWS) is the Ferbane PWS 6km west of the Application Site at its closest point. The Application Site is located more than 5km away at its closest point from the Source Protection Area (SPA) for the Ferbane PWS. The potential for the peat extraction and ancillary activities to impact the hydrogeology of the Ferbane PWS is limited as the bog drainage regime was already largely in place at the time the source boreholes were drilled (1985). The natural hydrological and hydrogeological regime of peat bogs, with little groundwater recharge and high runoff rates, also limit the potential effects that peat extraction and ancillary activities may have had on local groundwater abstractions including the Ferbane PWS. The Application Site is not located within the mapped SPA area to the Ferbane PWS. Please see Chapter 8 Hydrology and Hydrogeology for further details.

Water was not directly required for peat extraction. Water supply was used for machine washing, and for welfare and canteen facilities.

Therefore, the effect of peat extraction and ancillary activities on water services is considered to have had a long term, slight, neutral effect, which is Not Significant.

Control Measures

Pre-IPC Licence

In the period between 1988 and 2000 (i.e. before the IPC Licence took effect at the Application Site), control measures had been adopted by the Applicant to protect water supply. These measures were related to machinery maintenance and storage, refuelling facilities, surface water management, a maintenance programme for internal drains, and silt management; these measures have been outlined in Sections 4.7 to 4.10 of Chapter 4: Description of the Development.

Post-IPC Licence

In addition to the pre-IPC Licence measures described above, since 2000 when the IPC Licence took effect, the Application Site complies with Condition 6 and Condition 9 of IPC Licence P0500-01 which pertain to Emissions to Water and Water Protection respectively.

Condition 6 Emissions to Water

> *6.1 No specified emission to water shall exceed the emission limit values set out in Schedule 1(i) Emissions to Water subject to Condition 3 of this licence. There shall be no other emissions to water of environmental significance.*
>
> *6.2 The licensee shall within three months of date of grant of this licence submit to the Agency or approval, a proposal for a surface water discharge monitoring location programme. This programme shall, inter alia, have regard to the current status of each bogland (virgin, under development, operational or worked out), sensitivity of the receiving water, status of silt pond upgrade programme. This programme shall be reviewed and revised as necessary each year as part of the AER.*
>
> *6.3 Monitoring and analyses of each agreed emission monitoring location shall be carried out as specified in Schedule 1(ii) Monitoring of Emissions to Water of this licence. A report on the results of this monitoring shall be submitted to the Agency quarterly.*
>
> *6.4 The licensee shall, within six months of date of grant of licence, present a proposal for the installation (on a long term basis) of a composite sampler to one representative discharge point within the licensed area. The proposal shall set out the rationale for selection of the nominated discharge point as well as the sampling programme. The results of this monitoring are to be reported each year as part of the AER. Any proposal to relocate the composite sampler is to be dealt with under Condition 6.3.*
>
> *6.5 A summary report of emissions to water shall be submitted to the Agency as part of the AER. The information contained in this report shall be prepared in accordance with any relevant guidelines issued by the Agency.*
>
> *6.6 The licensee shall, within six months of the date of grant of licence, develop and implement a programme to ensure that all drainage water from all boglands in the licensed area is discharged via an appropriately designed silt pond treatment arrangement. The programme, to be implemented within a period to be agreed with the Agency, shall ensure that all discharges associated with operational boglands should be prioritised within this programme.*

6.7 Within three months of the date of grant of licence, the licensee shall prepare an operational procedure for de-silting of the silt ponds. The procedure shall as a minimum provide for visual inspection of all ponds on a fortnightly basis. The de-silting roster shall be based on recommendations of such visual inspection. A log of visual inspection and de-silting shall be maintained and a summary report on the de-silting programme shall be included in the AER. The licensee shall, within twelve months of the date of grant of this licence, demonstrate to the satisfaction of the Agency that the programme of inspection is adequate.

6.8 Silt ponds serving operational bogs shall be cleaned as a minimum twice a year, once before ditching and once before harvesting, and more frequently as inspections may dictate (refer Condition 6.7).

6.9 Within six months of the date of grant of licence, the licensee shall prepare a programme, for agreement with the Agency, to upgrade all the sedimentation pond treatment systems. The programme shall, inter alia, address provision of additional ponds, weir or pipe installation (inlet and outlet), pond configuration, use of baffles, performance efficiency and frequency of de-silting. The upgrade shall have regard to the minimum silt pond specifications detailed in Condition 6.10.

6.10 Within three years of date of grant of this licence all existing silt ponds serving operational bogs shall achieve the following minimum performance criteria (flood periods excepted):

(i) Maximum flow velocity < 10 cms-1
(ii) Silt design capacity of lagoons, minimum 50 m3per nett ha of bog serviced
(iii) All new ponds installed shall be designed to achieve these stated minimum design criteria.

6.11 All silt ponds prone to flooding shall be de-silted by 1stNovember of each year. Excavated sludge shall be removed for disposal to a location outside the flood plain.

6.12 In respect of silt control the licensee shall, within nine months of date of grant of this licence, prepare and implement procedures to ensure that:

(i) drainage manholes are protected and maintained free of excessive peat,
(ii) headlands are kept clean and free of excessive loose peat,
(iii) all new manholes and outfalls are set well back from turning grounds, drivers of bog plant do not turn short (over drains) at headlands,
(iv) harrows, millers, ridgers do not drag loose peat onto manholes or into drains, outside harrow spoons are directed away from drains,
(v) silt run-off, while piping or ditching, is minimised,
(vi) outfalls are controlled to minimise silt discharge during cleaning operations,
(vii) drains are ditched in dry weather,
(viii) while ditching, outfalls are blocked and ditch towards outfall,
(ix) outlets from stockpile field drains are blocked during stockpile loading,
(x) field drains adjacent to stockpiles are cleaned as soon as practicable after stockpile loading,
(xi) adequate room is allowed for rail bed beside Peco stockpiles,
(xii) all fields that have been milled are ridged at the end of the production season,
(xiii) all fields liable to winter flooding have been cleared of milled peat or re-compacted at the end of the production season.

Reason: To provide for the protection of the environment by way of control, limitation treatment and monitoring of emissions.

Condition 9 Water Protection

9.1 Surface & Groundwater Protection - Workshop areas and Depots

9.1.1 No potentially polluting substance or matter shall be permitted to discharge to off- site surface waters, off site storm drains or groundwaters.

9.1.2. Monitoring and analyses of surface water discharges shall be carried out as specified in Schedule 3 Monitoring of Workshop/Depot Surface Water Run-off of this licence. A report on the results of this monitoring shall be submitted to the Agency quarterly.

9.1.3 In the event that any analyses or observations made on the quality or appearance of surface water runoff should indicate that contamination has taken place, the licensee shall

(i) carry out an immediate investigation to identify and isolate the source of the contamination,

(ii) put in place measures to prevent further contamination and to minimise the effects of any contamination on the environment,

(iii) and notify the Agency as soon as is practicable

9.1.4. Within twelve months of the date of grant of licence, all tank and drum storage areas shall be rendered impervious to the materials stored therein. In addition, tank and drum storage areas shall, as a minimum be bunded, either locally or remotely, to a volume not less than the greater of the following;

(i) *110% of the capacity of the largest tank or drum within the bunded area*

(ii) *25% of the total volume of substance which could be stored within the bunded area.*

9.1.5 Drainage from bunded areas shall be diverted for collection and safe disposal.

9.1.6 The integrity and water tightness of all the bunding structures and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated by the licensee to the satisfaction of the Agency and shall be reported to the Agency within eighteen months from the date of grant of this licence and every two years thereafter. A report on such tests shall be included in the AER.

9.1.7 Within twelve months of the date of grant of licence, the loading and unloading of fuel oils shall be carried out in designated areas protected against spillage and leachate run-off. While awaiting disposal, all materials shall be collected and stored in designated areas protected against spillage and leachate run-off.

9.1.8 With the exception of roof water, all surface water discharges from workshop areas shall, within twenty-four months of date of grant of this licence, be fitted with oil interceptors.

9.1.9 A maintenance/cleaning log for all oil interceptors and septic tanks shall be maintained. This log shall also record the observations made during weekly inspections of all oil interceptors and bi-annual inspections of septic tanks.

9.1.10 An inspection for leaks on all flanges and valves on over-ground pipes used to transport materials other than water shall be carried out weekly.9.1.5 Drainage from bunded areas shall be diverted for collection and safe disposal.

9.1.11 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage .

9.1.12 The licensee shall maintain a log of bi-annual inspections of all rail and tractor transported fuelling units. These inspections as a minimum should record any damage or leaks or flaws in rolling stock that could result in accidental spillage. .

Reason: To provide for the protection of surface waters and groundwater.

Residual Effect

The residual effect of peat extraction and ancillary activities on water supply is considered to have had a long term, imperceptible and neutral effect, which is Not Significant.

Significance of Effects

Based on the assessment above there were no significant effects on water supply during the Peat Extraction Phase.

14.3.7.2.3 *Wastewater*

Identification of Impact

There are no underground sewerage networks within the Application Site. Welfare facilities are present at the Works area (adjacent to the Application Site boundary) and a smaller onsite welfare facility within the centre of the Application Site from which effluent discharges into a septic tank and then to ground via percolation. Treated wastewater is released into the Lemanaghan Stream and Brosna waterbody. The nearest public water supply is located over 6km away from the Application Site and the source protection area for the scheme is 5km away from the Application Site.

The effect of peat extraction and ancillary activities on wastewater is considered to have had a long term, slight, neutral effect, which is Not Significant.

Control Measures

The Application Site complies with Condition 6 and Condition 9 of the IPC Licence which pertain to Emissions to Water and Water Protection respectively.

Residual Effect

The residual effect of peat extraction and ancillary activities on wastewater is considered to have had a long term, imperceptible and neutral effect, which is Not Significant.

Significance of Effects

Based on the assessment above there were no significant effects on wastewater during the Peat Extraction Phase.

14.3.7.2.4 **Waste Management**

Identification of Impact

Waste generated from the peat extraction and ancillary activities comprised heavy and light fuels, batteries, welfare and workshop waste, machine fluids and plastics. Where possible, relevant materials were taken by licenced contractors and the rest was disposed of on the Application Site. Following cessation of this practice in 1998/1999, all waste awaiting deposition was collected in a skip at the Works prior to collection by a licenced waste collection contractor and transported to a suitably licenced/permitted facility for offsite reuse/recycling/recovery/disposal as appropriate. Since 2000 onwards, a waste management procedure in line with Condition 7 of the EPA licence compliance has been in operation at the Application Site. All waste materials are documented, weighed, recycled or reused where possible, and removed from Application Site by licenced contractors. The average volume of waste produced by the Boora Bog Group for the Peat Extraction Phase was 1,326.83 tonnes according to the AERs for years 2000-2020. This included, on average, 327.53 tonnes of Hazardous and 999.3 tonnes of Non-Hazardous waste per year. Please note that the AER waste figure is for the entire Boora Bog group within which the Application Site is situated, therefore the figures listed above would be significantly higher than the figures for the Application Site alone. Waste volume figures for the Application Site only are unavailable.

The effect of peat extraction and ancillary activities on waste management is considered to have had a long term, moderate, negative effect, which is Not Significant.

Control Measures

Pre-IPC Licence

In the period between 1988 and 2000 (i.e. before the IPC Licence took effect at the Application Site), control measures had been adopted by the Applicant to mitigate any impacts associated with waste management. These measures are outlined in Section 4.8.1 of Chapter 4: Description of the Development.

Post-IPC Licence

In addition to the pre-IPC Licence measures described above, since 2000 when the IPC Licence took effect, the Application Site complies with Condition 7 of the IPC Licence which pertains to Waste management.

The measures listed above in Section 14.3.4.5 and the requirements of Condition 7 of the IPC Licence provide for the reduction, reuse and recycling of waste materials where possible. Non reusable or recyclable materials were disposed of through licenced operators. The measures undertaken in July 1988 continued until 2000 when the Application Site fell under IPC control. Condition 7 of the licence compels the Applicant to correctly dispose of waste to licenced facilities.

Condition 7 Waste Management

> *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 authorised 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.

7.4 Within nine months of the date of grant of licence, the licensee shall submit to the Agency for agreement, a proposal for identification and management of all ash and screening disposal areas. Once agreed, the proposal shall be implemented within a timescale stipulated by the Agency.

Reason: to provide for the disposal of waste and the protection of the environment

Residual Effect

With the implementation of the control measures listed at Condition 7 of the IPC Licence P0500-01, the residual effect of peat extraction and ancillary activities on waste management is considered to have had a long term, slight and negative effect, which is Not Significant.

Significance of Effects

Based on the assessment above, there were no significant effects on waste management during the Peat Extraction Phase.

14.3.7.2.5 Telecommunications and Aviation

Identification of Impact

The RTE 2rn link was established in 1996 and the remaining 9 no. links that were identified in November 2020 were established from 1997 onwards with continuous retention permissions and upgrades over the years, thus demonstrating the viability of the telecommunications alongside the peat extraction and ancillary activities. Peat extraction and ancillary activities had been in operation at the Application Site for decades prior to the implementation of these telecommunication links and the Applicant's activities have operated harmoniously with these communication assets for decades.

As indicated in Section 14.3.4.6, there are no aviation assets in the area which had or have the potential to be impacted by past or proposed activities at the Application Site,

Therefore, the effect of peat extraction and ancillary activities on telecommunications and aviation is considered to have had a long term, imperceptible, neutral effect, which is Not Significant.

Control Measures

No control measures for telecoms or aviation interference were undertaken.

Residual Effect

The residual effect of peat extraction and ancillary activities on telecommunications and aviation is considered to have had a long term, imperceptible, neutral effect, which is Not Significant.

Significance of Effects

Based on the assessment above there was no significant effects on telecommunications and aviation during the Peat Extraction Phase.

14.3.7.3 Current Phase June 2020 to Present Day

14.3.7.3.1 *Electricity*

Identification of Impact

The grid infrastructure present during the Current Phase is the same as the Peat Extraction Phase. As the onsite activity is limited to the transportation of peat from the bog (completed by the end of 2024) and environmental monitoring, the potential for impacting any grid infrastructure is considered less than the Peat Extraction Phase, therefore the demand on electricity during the Current Phase is considered to be long term, not significant, and neutral, which is Not Significant.

Control Measures

The Applicant implements all the measures listed in Section 14.3.7.2.1 across all sites at all times.

Residual Effect

The residual effect of Current Phase activities on electricity demand is considered to have had a short term, imperceptible, neutral effect, which is Not Significant.

Significance of Effects

Based on the assessment above there is no significant effect on electricity during the Current Phase.

14.3.7.3.2 *Water Supply*

Identification of Impact

The water supply at the Lemanaghan Works, adjacent to the Application Site, and a smaller additional welfare facility onsite is from the local mains water supply.

The nearest public water supply is located more than 6km away from the Application Site and the source protection area for the scheme is more than 5km away from the Application Site. The effect of

Current Phase activities on water supply is considered to be a short term, slight negative effect, which is Not Significant.

Control Measures

The Application Site complies with Conditions 6 and 9 of the IPC Licence which pertain to Emissions to Water and Water Protection respectively.

Residual Effect

The residual effect of Current Phase activities on water supply is considered to be a short term, imperceptible negative effect, which is Not Significant.

Significance of Effects

Based on the assessment above there is no significant effects on water supply during the Current Phase.

14.3.7.3.3 *Wastewater*

Identification of Impact

There are no underground water or sewerage networks within the Application Site. The water supply at Lemanaghan Works is from the local mains water supply and welfare facilities are present at the Works area (adjacent to the Application Site boundary) and a smaller onsite welfare facility within the centre of the Application Site from which effluent discharges into a septic tank via a percolation system and then to ground.

The nearest public water supply is located more than 6km away from the Application Site and the source protection area for the scheme is more than 5km away from the Application Site.

The effect of Current Phase activities on wastewater is considered to be a short term, slight and negative effect, which is Not Significant.

Control Measures

The Application Site complies with Conditions 6 and 9 of the IPC Licence which pertain to Emissions to Water and Water Protection respectively

Residual Effect

The residual effect of Current Phase activities on wastewater is considered to be a short term, imperceptible and negative effect, which is Not Significant.

Significance of Effects

Based on the assessment above there are no significant effects on wastewater during the Current Phase.

14.3.7.3.4 Waste Management

Identification of Impact

Since 2000, a waste management procedure in line with Condition 7 of the IPC Licence has been in operation at the Application Site. All waste materials are documented, weighed, recycled or reused where possible, and removed from the Application Site by licenced contractors. The AERs are for the Boora Bog Group in its entirety and so will list waste volumes significantly higher than the wate that would have been produced at the Application Site alone, the average volume of waste produced per year during the Peat Extraction Phase for the Boora Bog Group was 1,326.83 tonnes. The volume of waste produced during the Current Phase across the Boora Bog Group was 1,558.71 tonnes (an increase of 17%) with an average of 85% of this waste recycled or reused (Appendix 4-3). This increase can be explained by the removal of ancillary infrastructure which is now no longer in use or required on the Application Site as well as any stored waste from the workshops across the Boora Bog Group. Therefore, whilst there has been an increase in waste material produced in the Boora Bog Group since peat extraction ceased, this was due to the removal of previous ancillary infrastructure as well as waste stored on the Application Site being removed.

The effect of Current Phase activities on waste management is considered to be a short term, moderate, negative effect, which is Not Significant.

Control Measures

The requirements of Condition 7 of the IPC Licence provide for the reduction, reuse and recycling of waste materials where possible. Non-reusable or recyclable materials are disposed of through licenced waste operators.

Residual Effect

The residual effect of Current Phase activities on waste management is considered to be a short term, slight negative effect, which is Not Significant.

Significance of Effects

Based on the assessment above there are no significant effects on waste management during the Current Phase.

14.3.7.3.5 Telecommunications and Aviation

Identification of Impact

The potential impacts on telecommunications and aviation assets remains the same as those listed for the Peat Extraction Phase in Section 14.3.7.2.5 above, therefore the effect of the Current Phase activities on telecommunication and aviation is considered to have had a short term, imperceptible, neutral effect, which is Not Significant.

Control Measures

No control measures for telecommunications or aviation are identified.

Residual Effect

The residual effect of the Current Phase activities on telecommunications and aviation is considered to have remained a short term, imperceptible, neutral effect, which is Not Significant.

Significance of Effects

Based on the assessment above there was no significant effects on telecommunications and aviation during the Current Phase.

14.3.7.4 Remedial Phase

14.3.7.4.1 *Electricity*

Identification of Impact

The potential impacts listed in the Peat Extraction Phase and Current Phase above remain the same. As the Remedial Phase involves the blocking of drains and environmental monitoring there are no impacts on electricity, therefore the impact of the Remedial Phase on electricity demand is expected to be long term, not significant and neutral, which is Not Significant.

Mitigation Measures

The Applicant will comply with IPC Licence requirements as detailed in Section 14.3.7.2.1 during the Remedial Phase, were applicable.

Residual Effect

The residual effect of Remedial Phase activities on electricity demand is expected to be a long term, imperceptible and neutral, which is Not Significant.

Significance of Effects

There will be no significant effect on electricity during the Remedial Phase.

14.3.7.4.2 *Water Supply*

Identification of Impact

The water supply at the Lemanaghan Works, adjacent to the Application Site, and a smaller additional welfare facility onsite is from the local mains water supply.

There are no known underground water networks within the Application Site where peatland remedial works (drain blocking in year 1 and 2 only) will be undertaken. The nearest public water supply is located more than 6km away from the Application Site and the source protection area for the scheme is more than 5km away from the Application Site. The effect of Remedial Phase activities on water supply is expected to be a long term, not significant, negative effect, which is Not Significant.

Mitigation Measures

The Applicant will comply with IPC Licence requirements as detailed in Section 14.3.7.2.2 during the Remedial Phase, were applicable.

Residual Effect

The residual effect of Remedial Phase activities on water supply is expected to be a long term, imperceptible and neutral, which is Not Significant.

Significance of Effects

Based on the assessment above there will be no significant effects on water during the Remedial Phase.

14.3.7.4.3 *Wastewater*

Identification of Impact

There are no underground sewerage networks within the Application Site.

The effect of Remedial Phase activities on wastewater is expected to be a long term, slight and negative effect, which is Not Significant.

Mitigation Measures

The Application Site complies with Conditions 6 and 9 of the IPC Licence which pertain to Emissions to Water and Water Protection respectively

Residual Effect

The residual effect of Remedial Phase activities on wastewater is expected to be a long term, imperceptible and negative effect, which is Not Significant.

Significance of Effects

Based on the assessment above there will be no significant effects on wastewater during the Remedial Phase.

14.3.7.4.4 *Waste Management*

Identification of Impact

Waste generated from the Remedial Phase will be limited to general waste created by the limited on-site staff (3 to 4 people for the first two years then 1 to 2 people visiting per month) which will be taken off the Application Site and recycled where possible.

The effect of Remedial Phase activities on waste management is considered to be a long term, slight, negative effect, which is Not Significant.

Mitigation Measures

The requirements of Condition 7 of the IPC Licence provide for the reduction, reuse and recycling of waste materials where possible. Non-reusable or recyclable materials are disposed of through licenced operators. The Applicant has committed to continuing the compliance with conditions outlined in the IPC Licence during the Remedial Phase, where applicable.

Residual Effect

The residual effect of Remedial Phase activities on waste management is expected to be a long term, imperceptible, negative effect, which is Not Significant.

Significance of Effects

It is considered that the Remedial Phase will have no significant effect on waste management.

14.3.7.4.5 *Telecommunications and Aviation*

Identification of Impact

The potential impacts on telecommunications and aviation remains the same as those listed for the Peat Extraction Phase and Current Phase described above in Sections 14.3.7.2.5 and 14.3.7.3.5 respectively. The Remedial Phase activities of drain blocking, and environmental monitoring will have a long term, imperceptible, neutral effect on telecommunications links and aviation assets in the area.

Mitigation Measures

No mitigation measures for telecoms or aviation are proposed.

Residual Effect

The residual effect of Remedial Phase activities on telecommunications and aviation is expected to be a long term, imperceptible, neutral effect, which is Not Significant.

Significance of Effects

There will be no significant effect on telecommunications and aviation assets during the Remedial Phase.

14.3.8 Cumulative and In-Combination Effects

14.3.8.1 Peat Extraction Phase

The potential cumulative and in combination effects of the Peat Extraction Phase of the Project with other relevant activities/projects at the Application Site are considered below, including that of peat extraction and ancillary activities at the Application Site that took place prior to 1988. Further information on activities or developments as part of the cumulative assessment are given in Chapter 2: Background.

Electricity, Telecommunications, Aviation

Peat extraction and ancillary activities at the Application Site had no impact or interactions on the quality or supply of electricity, telecommunications or aviation assets. Therefore, there are no cumulative or in combination effects on these assets.

Water Supply

The residual effect of peat extraction and ancillary activities on water services is considered to have had a long term imperceptible negative effect. As the nearest public water supply is located more than 6km

away from the Application Site and the source protection area for the scheme is more than 5km away from the Application Site, the cumulative or in combination effects on water supply are assessed as the same.

Wastewater

The residual effect of peat extraction and ancillary activities on wastewater is considered to have had a long term, imperceptible and neutral effect. As there were no large-scale industrial developments within the vicinity of the Application Site, the cumulative or in combination effects on waste management are assessed as the same.

Waste Management

The residual effect of peat extraction and ancillary activities on waste management is considered to have had a long term slight negative effect. As there were no large-scale industrial developments within the vicinity of the Application Site, the cumulative or in combination effects on waste management are assessed as the same.

14.3.8.2 Current Phase

The potential cumulative and in combination effects of the extraction industry with other relevant activities/ projects at the Application Site during this phase are considered below. Further information on activities or developments as part of the cumulative assessment are given in Chapter 2: Background.

Electricity, Telecommunications, Aviation

The Current Phase activities at the Application Site have no impacts or interactions on the quality or supply of electricity, telecommunications or aviation assets. Therefore, there are no cumulative or in combination effects on these assets.

Water Supply

The residual effect of the Current Phase on water services is considered to have a short term imperceptible negative effect. As the nearest public water supply is located more than 6km away from the Application Site and the source protection area for the scheme is more than 5km away from the Application Site, the cumulative or in combination effects on water supply are assessed as the same.

Wastewater

The residual effect of the Current Phase on wastewater is considered to have had a long term, imperceptible and neutral effect. As there were no large-scale industrial developments within the vicinity of the Application Site, the cumulative or in combination effects on waste management are assessed as the same.

Waste Management

The residual effect of Current Phase activities on waste management is considered to have had a short term slight negative effect. As there are no large-scale industrial developments within the vicinity nearest the cumulative or in combination effects on waste management are assessed as the same.

14.3.8.3 Remedial Phase

Electricity, Telecommunications, Aviation

The Remedial Phase activities at the Application Site have no impacts on the quality or supply of electricity, telecommunications or aviation assets. Therefore, there are no cumulative or in combination effects on these assets.

Water Supply

The Remedial Phase activities at the Application Site will have a long-term, slight and negative effect. on water supply. As the nearest public water supply is located more than 6km away from the Application Site and the source protection area for the scheme is more than 5km away from the Application Site, the cumulative or in combination effects on water supply are assessed as the same

Wastewater

The residual effect of the Remedial Phase on wastewater is considered to have had a long term, imperceptible and negative effect. As there were no large-scale industrial developments within the vicinity of the Application Site, the cumulative or in combination effects on waste management are assessed as the same.

Waste Management.

The Remedial Phase activities at the Application Site will have a long-term imperceptible negative effect on waste management. As there are no industrial scale developments in the vicinity of the Application Site, the cumulative or in combination effects on waste management are assessed as the same.

14.3.8.4 Potential Future Land Use

It is intended to utilise the Application Site for both peatland remediation, wind energy infrastructure and to facilitate environmental stabilisation of the bog group and the optimisation of climate action benefits.

Lemanaghan DAC, a joint venture between SSE Renewables and Bord na Móna (BnM) (i.e. the Applicant) are proposing a wind energy development consisting of 15 turbines with an overall blade to tip height of 220m[10] at the Application Site. A separate EIAR and accompanying NIS are being undertaken for the proposed Lemanaghan Wind Farm development. At the time of writing, the planning application for this development has not yet been submitted to An Coimisiún Pleanála.

Despite its significant potential, the overall footprint of the wind farm will likely be less than 3% of the total area of the Application Site. To address environmental concerns, the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan for the Application Site can incorporate this infrastructure.

Overall cumulative effects when considering the life cycle of the Application Site and the proposed Lemanaghan Wind Farm will not occur. Furthermore, cumulative effects when considering the existing Leabeg Wind Farm, Cloghan Wind Farm, Derrinlough Wind Farm, the proposed Umma More Wind Farm, and any other proposed, permitted or operational plans or projects listed in Chapter 2 Background of this rEIAR will not occur given the effects stated above.

[10] https://www.lemanaghanwindfarm.ie/

14.4 Conclusion

Traffic and Transport

This chapter assesses the potential effects on roads and local traffic from the additional traffic and rail movements that occurred due to the Project during the Peat Extraction Phase, including that of staff personnel commute. It also looks at the potential effect that the traffic and rail movements associated with the Current and Remedial Phases at the Application Site may have on roads and traffic, namely remaining stockpiled peat deliveries, staff personnel commute and rehabilitation works.

The peat extracted during the Peat Extraction Phase and peat which was stockpiled during the Current Phase was transported via rail and trucks, respectively, to various end users around the country. Based on the average annual volume of peat extracted or stockpiled per year at the Application Site and the average volume of peat transported per locomotive and truck, an estimation of the annual number of rail and HGV movements was determined for the Peat Extraction Phase and Current Phase. Employment figures at the Application Site for all Project Phases were also utilised to determine the traffic movements associated with staff personnel travelling to and from the Application Site. When comparing the average annual traffic movements to and from the Application Site were assessed against the average national traffic volumes counted at four identified Transport Infrastructure Ireland (TII) count locations surrounding the Application Site. As the earliest available data from the TII count locations is for 2021, for the Peat Extraction Phase, the average annual traffic volumes were factored to provide a more representative value for the baseline year of 1988. It is demonstrated that the additional volume of traffic generated by the Project for the Peat Extraction Phase would have a long-term imperceptible negative residual effect on road users and road conditions, i.e., for the Peat Extraction Phase this equated to <0.1% - 1.9% of daily traffic volumes attributed to the Project. For the Current Phase and Remedial Phase this equated to <0.1% -0.36% of daily traffic volumes attributed to the Project, which constituted a negative, short term, imperceptible effect, and negative, long term, imperceptible effect respectively.

By 1988, 1 no. rail underpass in place at the Application Site beneath the R436 to facilitate access between the Application Site and the Derries Bog, also within the Boora Bog group (IPC licence P0500-01). Over the period 1991 to 2003, 2 no. underpasses and 2 no. level crossings were consented and constructed within and adjacent to the Application Site boundary. At the level crossing locations, road users were required to stop to allow rail cars pass through, and the underpasses allowed road users and the rail movements to take place independently without interaction.

Standard level crossing lamps with light sensors that switched to light on when daylight faded were fitted across all Bord na Móna crossing gates. Catch points are also fitted into railway tracks on either side of level crossing gates as a standard safety practice to de-rail any runaway trans before reaching the level crossing. Locomotives would have crossed the 2 no. level crossings adjacent to or within the Application Site boundary an average of 9 times per day during the Peat Extraction Phase to reach end users, and an average of 3 times per day over a 3 year period in the Current Phase to reach end users. During the Peat Extraction phase, given the low frequency of crossings, operation of the level crossing at off-peak times only and the presence of gates and sensory notification lighting, the impact on wait times for road users at these level crossings is considered long-term negative and slight during the Peat Extraction Phase and short-term negative and not significant during the Current Phase

During the Remedial Phase, the estimated traffic levels generated to and from the Application Site arising from future plans to decommission and rehabilitation activities is considered to have a negative, long term, and imperceptible effect on traffic volumes, roads and road users.

Other Material Assets

This chapter also reviews other material assets located within the Application Site and immediate surrounds which may have been impacted by the Project such as utilities (water, wastewater, electricity, gas), telecommunications, aviation and waste management. There is no public water supply or gas infrastructure within the Application Site. The 220kV overhead line traverses the north of the Application Site as well as several telecommunication links. These assets were established long after peat extraction and ancillary activities commenced at the Application Site and have been able to operate successfully and uninhibited alongside the Peat Extraction Phase and Current Phase activities and will continue to do so during the Remedial Phase of the Project. A scoping exercise with the Irish Aviation Authority indicates that no aviation assets are impacted by activities past, present or future at the Application Site The has been, on average, a 17% increase in waste produced by the Boora Bog Group (IPC Licence No. P0500-01) between the Peat Extraction Phase to the Current Phase. Therefore, whilst there has been an increase in waste material produced at the Application Site since peat extraction ceased, this was due to the removal of previous ancillary infrastructure as well as waste stored on the Application Site being removed.

Since 2000, the Application Site has been operating under IPC Licence control which requires all hazardous and non-hazardous materials to be disposed of appropriately by licenced waste management operators. Likewise, details pertaining to waste (types, volume, name and address of licenced waste removal contractor, volumes recycled and reused), are recorded in AERs and submitted to the EPA annually and included in Appendix 4-3 of the rEIAR. Over the past few decades, activity decreased at the Boora Bog Group (in which the Application Site is located) and as a consequence of the cessation of peat extraction activity in 2020 and removal of remaining infrastructure, the volume of waste produced has increased. This increase in waste production is expected to fall during the Current Phase and Remedial Phases due to limited activities occurring at the Application Site, therefore an overall residual effect of a long term not significant negative is considered for waste management at the Application Site.

The water supply at the Lemanaghan Works, adjacent to the Application Site, and a smaller additional welfare facility onsite is from the local mains water supply. While under operating under IPC Licence P0500-01, conditions pertaining to wastewater and water supply have been strictly adhered to, therefore overall effects on wastewater and water supply have long term, slight negative effect.