Cummeennabuddoge Wind Farm

Habitat Report

FuturEnergy Ireland

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Quality information

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Table of contents

1. Introduction 1
1.1 Background 1
1.2 Summary description of the Site 1
1.3 NPWS Article 17 data 1
2. Methods 1
2.1 Field survey 1
2.2 Digitising 2
2.3 Nomenclature 2
2.4 Limitations 2
3. Recorded habitats 3
3.1 Annex I woodland 3
3.2 Other woodland 4
3.3 Annex I blanket bog 5
3.4 Annex I wet heath 7
3.5 Annex I dry heath 8
3.6 Non-Annex I wetland 9
3.7 Non-Annex I grassland 10
3.8 Water features 11
3.9 Other habitats 11
4. References 11
Appendix A Figure 13

1. Introduction

1.1 Background

AECOM was appointed by FuturEnergy Ireland Development Designated Activity Company (FuturEnergy Ireland) to carry out a habitat survey (including recording Annex I habitats[1]) at the proposed Cummeennabuddoge Wind Farm, Co. Kerry, approximately 5 km north of Ballyvourney.

As per the appointment, the surveyed area (the Site) encompasses land within 250 m of proposed turbine locations and 100 m of proposed access tracks. Only a very narrow habitat buffer was recorded in the original survey (carried out by Atmos Consulting in 2023) along a) parts of the proposed access track to the east beyond the zone of the proposed turbines, and b) along the proposed cable connection to the west; however, during the survey for this Report an inspection of habitats within 100 m was still made along these sections of the Site.

1.2 Summary description of the Site

The Site mainly lies within Coillte forestry plantation, dominated by Sitka spruce *Picea sitchensis* plantation but with various localised strips and patches of open habitats along watercourses, forest rides, etc. It is approximately orientated west to east, and there are existing wind farms close to the western part of the Site. The altitude range of the Site is approximately 250-500 m, with slopes ranging from flat to moderately steep. The local open habitat patches (excluding existing tracks) mainly comprise fragments of wet heath and degraded blanket bog, with smaller amounts of dry and wet grassland.

1.3 NPWS Article 17 data

The National Parks and Wildlife Service (NPWS) Article 17 data include several polygons of Annex I H4060 Alpine and subalpine heath, covering much of the Site. However, no H4060 was found during either the original wind farm habitat survey or this habitat survey. The majority of the Site is commercial forestry, and the (mainly) small fragments of remaining terrestrial Annex I habitat in the Site correspond to H4010 North Atlantic wet heaths with *Erica tetralix* and H7130/H7130* Blanket bog, rarely H4030 European dry heaths. H4060 is a montane habitat type that typically occurs at higher altitude than the Site.

2. Methods

2.1 Field survey

The survey was carried out on foot on 21-22 May 2024 (supplemented by notes gathered during an initial basic habitat check carried out on 20-21 March 2024) by an AECOM habitat specialist with extensive experience of upland and lowland habitats. The weather during the survey was dry or light drizzle and there were no significant hinderances to the survey.

Habitats were mapped with the aid of aerial photography and a GPS-enabled tablet running ESRI FieldMaps. Vegetation stands considered to be homogenous were assigned Annex I or non-Annex I Fossitt habitat types. The Annex I habitats are those listed in Annex I of the Habitats Directive, with guidance on interpretation provided in European Commission (2013). The Fossitt habitat types are those described in Fossitt (2000). Vegetation types can occur in patches too small to map amongst more extensive communities, or in complexes that cannot be feasibly mapped within a reasonable timescale, and in these cases mosaic polygons were used, or target notes for extremely small

[1] Habitats in this Report preceded by an alphanumeric code in the format 'Hxxxx' are Annex I habitats. These are habitats of European Community interest listed in Annex I of *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna* (the 'Habitats Directive'). In summary, habitats of Community interest are those that: i) are in danger of disappearance in their natural range, ii) have a small natural range, or iii) are outstanding examples of habitats in (for Ireland) the Atlantic biogeographic zone. 'Priority Annex I habitat' (shown with an asterisk, e.g. H7130*) means that point i) is considered to apply and there is a particular responsibility to conserve it owing to the large proportion of its range within the EU.

habitats. The aerial imagery assisted with identification and separation of vegetation patches. Notes on habitat features were recorded using ESRI FieldMaps. Full condition survey was not part of this appointment, however general information on the condition of Annex I habitats was recorded.

2.2 Digitising

Field data recorded in ESRI FieldMaps were subsequently imported into ESRI ArcMap. The habitat maps provided in Figure 1 were finalised using ESRI ArcMap, with reference to the field mapping, tablet target notes and aerial photography.

The GIS habitat polygons were assigned attributes for Fossitt habitat type and Annex I habitat type, and a comment field used where considered appropriate to give descriptive information. The GIS habitat dataset was produced as a feature class within a file geodatabase, which automatically provides unique identifier, polygon area and polygon perimeter attributes. A check was carried out for errors such as small gaps and slivers, missing attributes or non-standard/incorrect attributes.

For this survey, mosaic polygons have been employed where habitat polygons contain more than one Annex I type, or Annex I habitat(s) mixed with non-Annex I habitats, in mosaics that cannot be feasibly mapped separately in a reasonable timescale and/or are too fine-scale to effectively separate on a map. Mosaics are indicated in the Fossitt attribute by habitat types separated by forward slashes, for example “GS3/PF2”, and similarly in the Annex I attribute if more than one Annex I habitat is present. Where mosaics are only partly Annex I habitat, this is indicated in the Annex I habitat attribute by a qualifier, for example “H4030 (part)”.

2.3 Nomenclature

This Report gives the scientific name of vascular plants on first mention of a species, following Stace (2019), and thereafter common names only. English names of bryophytes and lichens are not well known therefore only scientific names have been used for these in all cases, following Blockeel *et al.* (2020) for bryophytes, and Hodgetts (1992) for *Cladonia* spp. lichens.

2.4 Limitations

It is not possible to walk over every square metre of a site. The surveyor employed professional experience to judge where their survey route would best be laid through non-forestry habitat to identify possible changes of condition and vegetation, using aerial photography combined with factors such as angle of slope, aspect, texture and hue of vegetation, and occurrences of features such as streams and rock outcrops, all of which can indicate changes of vegetation type or condition. This is normal for such habitat surveys and is not considered to significantly limit the findings. It should be noted that some small habitats that are easily hidden by other vegetation and/or not clear from aerial photography may have gone undetected. However, given the localised and limited extents of non-forestry vegetation in the Site, it is unlikely that such habitats have been missed.

The boundaries between habitats in more natural situations can be gradual rather than sharp. In particular, wet heath and blanket bog commonly grade into each other, and the vegetation of sufficiently degraded blanket bog can be the same as wet heath, in which case classification as blanket bog arises from peat depth of 0.5 m or more. However, peat depth during the habitat survey could only be judged from locally-visible cut peat edges (e.g. in cut-over bog or along existing track edges), which are not always present. It is therefore possible that some wet heath could be on deeper peat than suspected, and should then be classed as degraded blanket bog. If known peat depths from a peat probing survey should indicate peat of 0.5 m or more in areas classed as wet heath (or, generally, any open habitat), then those areas of deeper peat should be regarded as degraded blanket bog. Conversely, if known peat depths from peat probing are less than 0.5 m in areas classed as blanket bog, then those areas of shallower peat should be regarded as wet heath, except where shallow peat patches sit within a wider area classed as cut-over bog.

There were several minor access issues, which however are only of minor consequence and do not significantly affect the robustness of this Report:

- access was not taken to the small amount of agricultural land at the eastern end of the grid connection (adjacent to the substation), for which access was uncertain, and this was viewed

from the moorland to the north. However, the habitat appeared to be heavily-grazed agriculturally-improved pasture, therefore this limitation is not significant;

- access was not taken to agricultural land adjacent to the disused section of the N22 at the extreme western end of the surveyed area. However, this was clearly agricultural pasture and low quality grazed, rushy grassland;
- in a few instances, the habitat survey buffer exceeded the northern and southern boundaries of the forestry. Access was not taken beyond the forest boundary northwards, or (except for the substantial patch of cut-over bog) southwards (including the bog adjacent to Loch Carrignamork), and habitat information given beyond these limits was obtained by viewing from the edge of the forestry site; and,
- access into the forest ride north of Lough Carrignafurark was largely prevented by fallen conifers. The western tip of this ride was seen, and the rest has been assumed to be similar. It is possible that it contains degraded bog as well as the assumed continued wet heath.

3. Recorded habitats

Figure 1, showing a map of the Fossitt and Annex I habitats within the surveyed area, is provided in Appendix A.

Where different occurrences of a habitat are described separately below, they are listed from west to east, since the Proposed Development is spread most in that orientation.

Annex I types present are given in ***bold italic***. Fossitt habitat codes present are given in **bold**. Any mention of Annex I or Fossitt codes without bold font refers to habitats not now considered present, or mentioned for the purposes of discussion only.

As noted during the previous habitat check technical note (AECOM, 2024), there is little significant change from habitats previously mapped by Atmos Consultancy in 2023. The largest changes are the alteration, following clear-felling, of several large areas of mature plantation to very young recently-planted conifers. However, this has no impact on habitat value, since both young and mature non-native conifer plantation is unnatural and of negligible floristic interest. Some differences were noted for riparian vegetation alongside streams, including the presence of some **PF2** poor fen/flush and, locally, degraded **PB2** upland blanket bog, however these differences are of little consequence given that they involve areas that are only very locally impacted by the proposed infrastructure. Also, the survey buffer for this Report extended to 100 m from the access routes and cable connection, whereas the original survey by Atmos Consultancy in 2023 covered only an extremely narrow strip in these sections, therefore some additional habitats have been recorded in those areas.

3.1 Annex I woodland

3.1.1 *Annex I H9180 Tilio-Acerion forests of slopes, screes and ravines*

The only recorded Annex I woodland is a small amount of ***Annex I H9180 Tilio-Acerion forests of slopes, screes and ravines*** on stream slopes adjacent to the forestry track along the extreme western end of the western access route (Figure 1, sheet 1). The Fossitt type is **WN2 oak-ash-hazel woodland**. It is dry and basic, and although grey willow *Salix cinerea* is (atypically) dominant, there is also some natural ash *Fraxinus excelsior* (as is common in this type of woodland), and the flora is not wet but dry with a basic influence, including the base-indicators herb-robert *Geranium robertianum* and hart's-tongue fern *Asplenium scolopendrium*, as well as bramble *Rubus fruticosus* agg., great woodrush *Luzula sylvatica* and large dryopteroid ferns. Condition appears good except very locally where rhododendron *Rhododendron ponticum* is present and has a negative effect.

This woodland becomes dominated by non-Annex I **WN1** woodland just upstream, and there is also other **WN2** woodland nearby that is also not Annex I habitat, as described in the next section.

3.2 Other woodland

3.2.1 Other broadleaved woodland

Other semi-natural broadleaved woodland

The above-described patch of ***Annex I H9180*** dry/basic woodland becomes mixed upstream with semi-natural **WN1 oak-birch-holly woodland**, which is dry and acidic (Figure 1, sheet 1). Where they are mixed, the **WN1** appears to occupy most of the slopes, with the ***Annex I H9180*** / **WN2** beside the stream; however, this area was inaccessibly steep and densely vegetated, and was only viewed from the forestry track. The **WN1** is obviously acid with abundant bilberry *Vaccinium myrtillus* and bracken *Pteridium aquilinum*; however, the canopy is variable (birch *Betula* sp., alder *Alnus glutinosa*, grey willow, non-native conifers and locally non-native beech *Fagus sylvatica*) and lacks any oak *Quercus* spp., and thus does not constitute Annex I H91A0.

Further **WN2**, and a small amount of **WN6 wet willow-alder-ash woodland**, occurs as a thin band next to the disused section of the N22 (Figure 1, sheet 1). This is dominated by grey willow, including some large examples with epiphytes. About 80% is best considered **WN2** with a drier flora of common bent *Agrostis capillaris*, bramble, herb-robert and the moss *Thuidium tamariscinum*. Given the canopy composition and situation, it is not Annex I H9180. About 20% is **WN6** wet woodland with soft rush *Juncus effusus*, small grasses, bare mud and locally purple moor-grass *Molinia caerulea*, and again a grey willow canopy. The proposed access track passes through this band of woodland.

A further small patch of **WN6 wet willow-alder-ash woodland**, here also dominated by grey willow, was identified in the survey buffer north-east of Lough Gal. The flora is variable but clearly damp and tending to acidic, with *Sphagnum fallax*, soft rush, the moss *Polytrichum commune*, acid pleurocarpous mosses, and purple moor-grass.

Small wooded ravine east of proposed turbine T12

At the location labelled on Figure 1, sheets 5 and 6, there is a very small ravine-like section along the stream. There are a small number of rowan *Sorbus aucuparia* trees and willow *Salix* spp. shrubs here, but too few to feasibly map as an area of woodland. The closest woodland type is **WN1 oak-birch-holly woodland**, given the abundance of heather *Calluna vulgaris*. The steep rocky sides also support great woodrush, with patches of opposite-leaved golden-saxifrage *Chrysosplenium oppositifolium*, scattered hard fern *Blechnum spicant* and some St Patrick's cabbage *Saxifraga spathularis*. There will be other plant species here as well, however the ravine is not particularly safe to enter and is distant from proposed infrastructure, so was not further inspected. If basic indicator species are also present on rock beside the stream itself within the ravine, then an extremely small amount of *Annex I H9180 Tilio-Acerion forests of slopes, screes and ravines* could also be present.

Plantation broadleaved woodland

At the extreme western end of the Site (Figure 1, sheet 1) there is a substantial block of **WD1 Mixed broadleaved woodland;** a broadleaved plantation of ash, which is only semi-mature, and is dense, very even-aged and planted in very obvious rows. It is grassy beneath with scattered common sorrel *Rumex acetosa*, soft rush and the moss *Thuidium tamariscinum*. The proposed access track passes through this ash plantation.

There is a small patch of recently-planted broadleaved woodland, constituting **WS2 immature woodland**, between proposed turbines T14 and T17. This is very young, comprising saplings in planting tubes on a very disturbed former plantation flora.

3.2.2 Coniferous woodland

The majority of the Site is Coillte or other forestry comprising forms of non-native coniferous woodland. Most is either **WD4 conifer plantation** (mature or sometimes semi-mature) or **WS2 immature woodland** (mostly very recent conifer plantation, occasionally thicket-stage plantation), mainly of Sitka spruce and occasionally Scots pine *Pinus sylvestris*. The extent of **WS2 immature woodland,** recent conifer plantation is larger than originally mapped, and is especially extensive in the east of the Site. There was active clear-felling during the field survey (marked as **WS5 recently-felled**, which can be expected to have been re-planted prior to construction), and the extent of **WS2**

recent conifer plantation will increase in the near future, potentially drastically. Neither the mature nor recent non-native conifer plantation are of any note.

Particularly towards the western end of the surveyed area, and occasionally elsewhere, pale patches on aerial photography within the conifer plantation are generally just poorly-grown **WD4 conifer plantation**. In these instances, the conifers are still small and sit on what would have otherwise been *Annex I H4010* / HH3 wet heath that is too wet or otherwise unfavourable for tree growth. Together with the occurrence of such habitat in occasional small unplanted patches and narrow forest breaks, and visible deep peat along the cut edges of the forest track east of Lough Gal, it appears that much of the plantation was planted on *Annex I H4010* / HH3 wet heath, and in places on *Annex I H7130* / PB2 blanket bog.

3.3 Annex I blanket bog

3.3.1 *Annex I H7130* blanket bog*

All ***Annex I H7130* blanket bog*** at this Site corresponds to **PB2 upland blanket bog**.

The suffixed asterisk for this Annex I code indicates that it is a priority Annex I habitat. Priority Annex I blanket bog is active, which is taken to mean that it supports significant peat-forming vegetation (European Commission, 2013). Peat-forming vegetation includes vegetation with hare's-tail cottongrass *Eriophorum vaginatum* as well as bog mosses *Sphagnum* spp. (https://sac.jncc.gov.uk/habitat/H7130/).

Around Lough Gal

The northern end of Lough Gal (which is within the survey buffer for the western access track) is surrounded by a band of ***H7130* blanket bog*/PB2 degraded upland blanket bog**. Hare's-tail cottongrass and purple moor-grass dominate, and although there is little sphagnum other than frequent *Sphagnum capillifolium*, there is abundant cross-leaved heath *Erica tetralix* and bilberry, and occasional heather. There is also abundant pleurocarpous moss, as occurs in less wet blanket bog. Scattered self-sown spruces indicate that condition would be Unfavourable Inadequate.

South of proposed turbines T14 and T16

There are two mapped zones of ***H7130*/*PB2** south of proposed turbines T14 and T16. These are outside the forestry plantation and on the other side of the county line, in County Cork. They were viewed from the edge only, but appear to be intact and undamaged with frequent to abundant hare's-tail cottongrass, purple moor-grass and cross-leaved heath. Peat depth appears deep as judged from the severely cut-over bog (described below in Section 3.3.2) between these two zones. However, they are separated from the forestry plantation by a wide heavily-disturbed strip along the county line, from which peat has largely been removed, and which effectively results in hydrological separation.

3.3.2 *Annex I H7130 blanket bog*

Areas mapped as non-priority ***H7130*** are considered to lack sufficient peat-forming vegetation to classify as priority ***H7130****. Some corresponds to **PB4 cut-over bog**, but where the bog is not cut-over the only available category under the Fossitt system (in the absence of a general degraded bog category) is PB2 upland blanket bog. To more clearly indicate non-cut-over but nevertheless degraded bog, in this Report the suffix 'deg' has been added to the Fossitt category ('**PB2deg**').

The below occurrences of this habitat are listed from west to east.

Western access track east of Lough Gal

There is a thin band of ***H7130 blanket bog* / PB2deg degraded upland blanket bog** along the western/southern side of this track. The dominant species here are purple moor-grass and heather, with only infrequent hare's-tail cottongrass, plus frequent *Sphagnum capillifolium* and *Racomitrium lanuginosum*, and occasional but locally frequent cross-leaved heath. The flora is thus closest to wet heath, however significantly deep peat is evident from the cut face along the adjacent track. This is therefore degraded blanket bog. Condition would at best be Unfavourable Poor owing to the shortage of bog species and evident drainage.

Ride near western access route south-west of T16

A wider forest ride in this area has been mapped as ***H7130 blanket bog*/PB2deg degraded upland blanket bog**. It exhibits occasional to abundant hare's-tail cottongrass, but purple moor-grass is often dominant and ericoids (heather and cross-leaved heath) are rather sparse; there is also frequent *Sphagnum capillifolium* but no other sphagna were noted. There are drainage channels through this area, which will be having a degrading effect in addition to the adjacent planted trees, and detailed condition assessment would likely find this vegetation to be in Unfavourable Inadequate condition, with no possibility of rehabilitation whilst the forestry is present.

Rides near T16, in mosaic with wet heath

The proportion of non-priority ***H7130 blanket bog*/PB2deg degraded upland blanket bog** is small here, and although hare's-tail cottongrass is present, ericoid and sphagnum cover is poor. Condition would at best be Unfavourable Inadequate and this ***H7130*** is of negligible value, comprising thin relict fragments amongst conifer plantation with drainage channels, both causing degradation, and with no possibility of rehabilitation whilst the forestry is present.

South of peat depository near T16

There is a zone of extremely degraded and heavily cut-over non-priority ***H7130 blanket bog*/PB4 cut-over bog** south of the proposed peat repository near T16. This is outside the forestry plantation and on the other side of the county line, in County Cork. It was viewed from the edge only, but is evidently very severely damaged. Peat cutting has left substantial areas devoid of peat with scattered islands of very dry peat. The extent of peat removal is such that a detailed survey would perhaps best class a large part of it as just ephemeral vegetation on bedrock and not bog at all. It is self-evidently in very Unfavourable condition. It is separated from the forestry plantation by a wide heavily-disturbed strip along the county line, from which peat has largely been removed, and which effectively results in hydrological separation.

Just east of proposed turbine T14

The substantial extent just east of proposed turbine T14 has been subject to a degree of peat extraction, and also some drainage as evidenced by occasional drainage grips. Although the peat cuttings occupy a minority of this bog extent, and mostly extend perpendicularly from a central deeply-cut track, the whole of it appears to have been degraded, probably by drying effects. Purple moor-grass is overly dominant and although hare's-tail cottongrass is present and generally constant, its cover is low. Whilst cross-leaved heath is also present, cover is very low. Sphagnum diversity is also very limited, with only *Sphagnum capillifolium* (a species also common in wet heath) at all frequent and not at high cover. No sphagna more characteristic of bog (such as *Sphagnum papillosum*) were seen, with the exception of *Sphagnum auriculatum* which was, however, only seen in localised cuttings (which are often cut down to or close to bedrock), rather than in more natural circumstances such as bog pools (of which there are none, the bog surface beyond cuttings being rather flat). Occasional prominent hummocks comprised only *Sphagnum capillifolium* or the moss *Racomitrium lanuginosum*. No other bog species were seen apart from bog asphodel *Narthecium ossifragum*, which is rare here. On balance, therefore, the whole of this bog extent is considered non-priority ***H7130 blanket bog*/PB4 cut-over bog**, and a full condition assessment would likely find it to be in Unfavourable Inadequate condition.

Along streams near proposed turbines T9 and T11, and fragments near T13 and T15

The open vegetation along the stream between proposed turbines T9 and T11, and along the stream just west of T11, includes thin fragmentary strips of ***H7130 blanket bog*/PB2deg degraded blanket bog**. These are separated from the wet heath also present here by a visible lip of deeper peat, but are species-poor (being no doubt dried by the adjacent conifer plantation) with frequent hare's-tail cottongrass but no other good bog indicator species. Detailed condition assessment would find these strips to be in Unfavourable Bad condition. Similar very small fragments exist near proposed turbines T13 and T15 and are similarly degraded.

The patch south of proposed turbine T9 has frequent *Sphagnum capillifolium* as well as hare's-tail cottongrass, but purple moor-grass is dominant and there are regular, dense, parallel drainage

channels from an apparent intention to plant trees which must have been abandoned. Owing especially to this drainage, condition would certainly be Unfavourable Bad.

Beside cable connection route

Bog adjacent to the cable connection route north-east of the proposed substation was observed from the track only, because it lies within the existing wind farm and close to an existing turbine. However, it is obviously degraded by regular parallel drainage grips, which can easily be seen on aerial photography. It is not clear whether this bog has been cut-over in the past, but it appears to be over-dominated by purple moor-grass, and the drainage alone confers Unfavourable Bad condition. It has been thus coded as ***H7130 blanket bog*/PB2deg degraded blanket bog**.

Further east near the cable connection route there is ***H7130 blanket bog*/PB4 cut-over bog**. Nearer the existing wind farm, this has frequent hare's-tail cottongrass, but has been subject to severe peat cutting, with domestically-extracted peat blocks laid out to dry at the time of survey. The peat level is thus very uneven and in places down to bedrock, with a flora often more akin to wet heath.

***H7130 blanket bog*/PB4 cut-over bog** closest to the eastern end of the cable connection is difficult to separate from the wet heath, owing to historic peat cutting, the extent of which is difficult to determine. The separation as marked on Figure 1 is a crude estimation only. There is some suggestion of very historic extensive cutting below the marked edge, but this is unclear, and if very historic and now apparently largely without deep peat then it is best classed (as it has been) as ***H4010*/HH3 wet heath** (for which see Section 3.4.1 below). However, if peat probing results suggest that there is deep peat anywhere in this wet heath zone, those deeper peat areas should be considered as *H7130 blanket bog*/PB4 cut-over bog.

3.4 Annex I wet heath

3.4.1 *Annex I H4010 Northern Atlantic wet heaths with Erica tetralix*

All wet heath in the surveyed area corresponds to ***Annex I H4010 Northern Atlantic wet heaths with Erica tetralix*** and **HH3 wet heath**. With few exceptions, it comprises small patches and thin strips in poor condition within forestry plantation breaks and along streams.

Near and west of Lough Gal

The small patches and strips in the forestry plantation near Lough Gal do correspond to ***Annex I H4010*/HH3 wet heath**, but are poor examples. They are mostly over-dominated by purple moor-grass, often with too much dense heather, bilberry and/or western gorse *Ulex gallii*, or with insufficient ericoids (and then barely constituting wet heath). In places there are also scattered self-sown conifers. *Sphagnum capillifolium* is sometimes present but pleurocarpous mosses are often more common, and these stands are relatively species-poor. The forest ride just west of Lough Gal is often a poor fit to wet heath, with areas of largely bare and poorly-vegetated wet mud/peat. Detailed condition assessment would likely find all these patches and strips to be in Unfavourable Bad condition.

Beside western access route east of Lough Gal

The band of wet heath along the east side of this track, and near it, is another poor-quality example of ***Annex I H4010*/HH3 wet heath**. It is over-dominated by purple moor-grass with insufficient ericoid cover (although heather and cross-leaved heath are present), is species-poor, and exhibits frequent colonisation by scattered (locally dense) self-sown conifers and willows. For these reasons it is in Unfavourable Bad condition. It should be noted that natural peat depth is uncertain here. It seems that in constructing the track, peat was often dumped on this side of the track, where it is mixed with stone etc., however, it is possible that natural peat depth is deep in places, and if peat probing results show this then this strip should in those places be regarded as degraded bog (i.e. *Annex I 7130*/PB2deg).

Along streams near proposed turbines T9 and T11

***Annex I H4010*/HH3 wet heath** occupies a significant part of the open ground alongside these streams. It occurs as generally thin strips below the lip of the degraded peat bog strip (where present), and typically above the small flatter areas directly beside the streams (which are typically

occupied by acid grassland and rushy poor fen). These strips of wet heath are species-poor and dominated by dense tussocky purple moor-grass with variable amounts of heather (sometimes co-dominant) and often with bilberry. Lack of positive indicators mean that condition is at best Unfavourable Inadequate.

Other patches and strips in the vicinity of proposed turbines T11 to T16

Further poor-quality small patches and thin strips (some long) of ***Annex I H4010*/HH3 wet heath** are scattered in the survey buffer near proposed turbines T11, T12, T13, T14, T15 and T16, within forest rides and other breaks. Again, purple moor-grass over-dominates, and although heather is present and occasionally abundant, it is very often senescent. Cross-leaved heath is generally at most occasional, and *Sphagnum capillifolium* and common pleurocarpous mosses occupy the bryophyte layer. The vegetation is species-poor, and in places there are scattered self-sown spruces (an obvious negative feature). There are drainage ditches associated with the immediately adjacent forestry, which itself will be having an adverse drying effect. For these reasons, condition is at best Unfavourable Inadequate. There are other less pale patches on aerial photography in this area, but as mentioned above these appear to be poorly-grown stunted conifer plantation on what, without the trees, would have been wet heath.

Near proposed turbine T5

There is a very small patch of ***Annex I H4010*/HH3 wet heath** just east of proposed turbine T5. It contains widely scattered young conifers, which appear likely to have been self-sown (although it is difficult to be certain). It is species-poor, overwhelmingly dominated by purple moor-grass and heather. For these reasons it is in at best Unfavourable Inadequate condition.

South-east of proposed turbine T3

A very steep bank immediately beside the track south-east of proposed turbine T3, with a flatter strip above it, supports a thin band of mixed heath types. Part of this is ***Annex I H4010*/HH3 wet heath**, but again it is of poor quality, with purple moor-grass dominant, low ericoid cover and limited species diversity. Condition is at best Unfavourable Inadequate.

In vicinity of the cable connection route

***Annex I H4010*/HH3 wet heath** towards the east end of the cable connection route is variable in condition. The greater part is fairly heavily grazed with mixed short purple moor-grass, heather and sometimes acid grasses, rather sparse cross-leaved heath and other wet heath species, and substrate stones sometimes visible. These parts are in at best Unfavourable Inadequate condition. Some parts nearer the broadleaved plantation, however, appear to be in Favourable condition with frequent to abundant cross-leaved heath amongst the purple moor-grass and heather, and frequent milkwort *Polygala vulgaris*, *Sphagnum capillifolium* and green-ribbed sedge *Carex binervis*.

The best part (not or barely impacted by the cable connection route) is the separately-delineated patch on the inside of the curved historic track, which is fenced off from livestock, and also contains occasional *Sphagum subnitens, Sphagnum papillosum* and deergrass *Trichophorum germanicum*, and more rarely bog asphodel.

3.5 Annex I dry heath

3.5.1 *Annex I H4030 European dry heaths*

The very limited extents of dry heath in the surveyed area correspond to ***Annex I H4030 European dry heaths*** and **HH1 dry heath**. They comprise extremely localised patches and strips within forestry plantation breaks and occasionally along streams.

Small patches west of Lough Gal

There are two small patches in the forestry plantation in this area of ***Annex I H4030*/HH1 dry heath**, but they are poor examples. The western-most patch is overwhelmingly dominated by bilberry and pleurocarpous mosses (particularly *Hylocomium splendens* and *Rhytidiadelphus loreus*), with heather varying from absent to frequent. In this area, there is also a patch of mosaic dry/wet heath – the dry heath component is damp with a mix of heather, bilberry, *Sphagnum capillifolium* and common

pleurocarpous mosses, and is relatively species-poor. Condition of these dry heath examples is at best Unfavourable Inadequate, in particular through insufficiency of positive indicators.

South-east of proposed turbine T3

South-east of proposed turbine T3, beside the forestry track, there is a very steep bank with damp dry heath, composed mainly of heather with *Sphagnum capillifolium* and other bryophytes including pleurocarpous mosses of acid conditions, and some *Breutelia chrysocoma*. There is also some wet heath with abundant purple moor-grass, which becomes prevalent on the flatter ground above the bank. Thus, this strip is a mosaic of ***Annex I H4030*/HH1 dry heath** and wet heath (discussed in Section 3.4.1 above). Condition of the damp dry heath appears to be Favourable, although it is not particularly notable (this type of damp dry heath is common on more steeply sloping ground with more shady northerly aspects). It is unlikely to be affected, however, unless the bank is required to be cut into.

Near proposed substation

The small stream west of the proposed substation is deeply incised with steep heathery banks, creating a wide strip of ***Annex I H4030*/HH1 dry heath**. Heather is more or less continuously dense, with frequent bilberry. Mostly the bryophyte component comprises typical pleurocarpous mosses of acid conditions, but there is also frequent *Sphagnum capillifolium* creating a proportion of damp dry heath. Soft rush is locally frequent beside the stream itself. There is no encroaching woody vegetation except to the north, where frequent self-sown spruce is an adverse feature, and apart from that area this dry heath is in Favourable condition.

There is another very small patch of ***Annex I H4030*/HH1 dry heath** south of the proposed substation, on the other side of the forestry track. This is in Unfavourable Bad condition, with heather abundant but no other ericoids. This patch is transitional to grassland and wetland and is thus atypical.

3.6 Non-Annex I wetland

Annex I wetland (in this case, all blanket bog) is described in Section 3.3 above. This section covers other wetland habitats that are not Annex I habitats, which in this case comprise **PF2 poor fen**, often in mosaic with grassland types.

By Lough Gal

The periphery of blanket bog around Lough Gal also includes a small proportion of **PF2 poor fen**. This is fairly typical and species-poor, mainly comprising soft rush and *Sphagnum fallax*, as well as *Sphagnum palustre* and purple moor-grass.

Along streams near turbines T9 and T11/T12

The floor of the stream valleys near these turbines includes strips and patches of **PF2 poor fen**. This is of the typical sort for this situation and this location, comprising dense soft rush with some of *Sphagnum palustre, Sphagnum fallax* and *Polytrichum commune*, and a limited variety of herbs such as marsh violet *Viola palustris*, tormentil *Potentilla erecta* and common sorrel. This exists in mosaic with **GS3 dry-humid grassland** (acid grassland), which is often heavily grazed by deer and contains typical species of moderately acid conditions including sweet vernal-grass *Anthoxanthum odoratum* and heath bedstraw *Galium saxatile*. These intergrade with transitional zones of soft rush with acid grassland species. Such habitats are common along upland streams in general and are normally, as here, of limited species diversity and no special note.

North-east of proposed turbine T5

An extensive rushy zone occurs on low ground 100+ m from proposed turbine T5, and downslope. It includes both soft rush and sharp-flowered rush, but again tending to the acidic with species such as *Sphagnum palustre*, *Sphagnum fallax*, purple moor-grass and common sorrel. It corresponds to **PF2 poor fen**. It is not specially diverse or otherwise notable.

South-east of proposed turbine T3

There is a small extent of **PF2 poor fen**, in mosaic with **GS3 dry-humid grassland** (acid grassland), beside the stream and forestry track south-east of proposed turbine T3. The **PF2 poor fen** comprises soft rush and purple moor-grass with *Sphagnum palustre* and *Polytrichum commune*, whilst the **GS3** acid grassland includes typical acid grassland species (such as sweet vernal-grass and heath bedstraw) and in places also further soft rush. Neither are notable.

South of proposed substation

South of the proposed substation, on the other side of the forestry track, there is an unforested gently sloping area of rushy vegetation. This varies from neutral to acidic, the former rather species-poor dense soft rush with scattered marsh thistle *Cirsium palustre* and cuckooflower *Cardamine pratensis*, the latter with either *Sphagnum fallax* and *Polytrichum commune* or transitional to acid grassland (but still rushy) with sweet vernal-grass and heath bedstraw. This has been coded as a mosaic of **PF2 poor fen** and **GS4 wet grassland**. They are of limited diversity and note.

3.7 Non-Annex I grassland

There is no Annex I grassland within the surveyed area. Grassland that exists in fine-scale mosaic with PF2 poor fen (as occurs along the streams near proposed turbines T9 and T11) is described in Section 3.6 above.

Beside western end of western access route

Pasture fields at the extreme western end of the survey area, adjacent to the disused section of the N22, were not directly entered but comprise species-poor **GA1 improved agricultural grassland** and some **GS4 wet grassland**. The latter appears to be poor-quality grazed grassy vegetation of no note, with frequent to abundant soft rush, of the sort that is more akin to poor quality neutral grassland rather than rushy wetland with wetland species.

The southern verge of the disused section of the N22 comprises ungrazed coarse neutral grassland, with species such as cocksfoot *Dactylis glomerata*, creeping thistle *Cirsium arvense*, nettle *Urtica dioica*, soft rush, bramble and grey willow. Ox-eye daisy *Leucanthemum vulgare*, meadow buttercup *Ranunculus acris* and sweet vernal-grass are frequent at the verge/road edge. This corresponds best to **GS2 dry meadows and grassy verges**, but is of no note, being disturbed and no more than moderately diverse with an unremarkable mix of common plants including ruderal species.

Beside access track between proposed turbines T13 and T15

Where the stream passes close to this existing access track, the vegetation on the left (west) side of the stream (closest to the access track) is mainly **GS3 dry-humid grassland**. It is acid grassland of the typical sort, often short-grazed by deer and occasional escaped sheep, with, for example, common bent, sweet vernal-grass, heath bedstraw and tormentil, often with scattered and locally dense soft rush. A zone at the bend of the track has been classed as **GS4 wet grassland**, because the larger part of the vegetation is species-poor dense purple moor-grass, although there is also some rushy acid grassland and a small amount of species-poor **PF2 poor fen** with soft rush and sphagnum.

Between proposed turbines T7 and T10

Beside the forestry track and small active quarry, there is a small area of disturbed and possibly previously-forested densely rushy ground. Soft rush is overwhelmingly dominant, mainly with acid pleurocarpous mosses and therefore best classed as **GS4 wet grassland**, although locally there is *Polytrichum commune* indicating transition towards PF2 poor fen. There is also a ditch with standing water and bog pondweed *Potamogeton polygonifolius*.

Near/at cable connection

There are two small pockets of unremarkable acid grassland corresponding to **GS3 humid grassland** beside the existing access track near the proposed cable connection. These comprise typical and non-notable species such as common bent, sweet vernal-grass, heath bedstraw and, in this case, frequent soft rush.

The eastern end of the cable connection passes through agricultural fields which were viewed from the adjacent wet heath since access was uncertain. Although originally mapped (by Atmos

Consultancy in 2023) as GS2 dry meadow, at the time of survey for this Report they were very heavily grazed and bright green, on even gently-sloping ground. They may have formerly been mapped as GS2 because they were at that time ungrazed, but given the current appearance and situation it is unlikely that they are anything other than **GA1 improved agricultural grassland**.

The proposed cable connection passes through a small patch of **GS4 wet grassland**. This is species-poor grazed and grassy soft rush, of no note.

3.8 Water features

3.8.1 Standing waters

Part of Lough Gal, towards the western end of the survey area, is within the survey buffer. The water is dark and peaty, and the northern edges appear to drop off quickly to some depth, with no visible aquatic vegetation, and it is surrounded by a band of blanket bog (with adjacent conifers likely planted on former blanket bog). It appears therefore to be dystrophic, and also seems to be natural. It would consequently qualify as ***Annex I H3160 Natural dystrophic lakes and ponds*** (corresponding to **FL1 dystrophic lakes**).

Lough Carrignamork, the edge of which falls just within the survey buffer near the peat repository by proposed turbines T14 and T16, was only viewed from the track north of it, but is also situated within blanket bog and appears likely to also be ***Annex I H3160 Natural dystrophic lakes and ponds***/**FL1 dystrophic lakes**.

North-east of proposed turbine T13, on the other side of the forestry track and hidden by strongly undulating forested terrain, there is a pond that seems to occupy an historic cutting. This is shallow and dominated by *Sphagnum cuspidatum*, with peripheral soft rush, *Sphagnum fallax* and purple moor-grass. It corresponds to **FL2 oligotrophic lakes and ponds**. This example does not appear to be natural and does not exhibit the vegetation of the Annex I oligotrophic standing water types.

3.8.2 Running waters

Streams in the survey area are fairly small with little aquatic/emergent vegetation, and represent small examples of **FW1 eroding/upland rivers**. They lack artificial modifications except at very localised track crossings, and are more or less natural and in good condition apart from a general lack of native trees/shrubs (such as birch and small willows) that would probably exist along them in more natural circumstances. None constitute Annex I habitats.

3.9 Other habitats

Beside the forestry track between proposed turbines T7 and T10 there is a highly disturbed revegetating patch of **ED3 revegetating ground**, associated with a small **ED4 active quarry**.

A house and garden falls within the survey buffer at the extreme western end, where there is also a stretch of the disused section of the old N22 road, and the existing substation lies at the extreme eastern end. Tracks within the survey area are largely typical gravelly forestry tracks. These features are separately mapped on Figure 1.

4. References

AECOM (2024). Cummeennabuddoge Wind Farm. Technical Note – Habitat Review. 26 March 2024.

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European Commission (2013). *Interpretation Manual of European Union Habitats*. European Commission DG Environment.

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Hodgetts, N.G. (1992). *Cladonia: a field guide.* JNCC, Peterborough.

Stace, C. (2019). *New Flora of the British Isles* (4th edition). C&M Floristics, Middlewood Green.

Appendix A Figure

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Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

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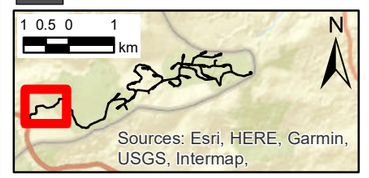
LEGEND

Proposed access shown as black dashed lines. Other proposed infrastructure black and labelled. Proposed cable connection approximately in centre of eastern survey buffer.

- Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- H4030; HH1 dry heath
- H4030/H4010; HH1/HH3 dry heath/wet heath
- H4010; HH3 wet heath
- H7130* (mainly); PB2/PF2 blanket bog/poor fen
- H9180 (partly); WN1/WN2 dry acid/dry basic woodland
- H9180 (partly); WN2 dry basic woodland
- WN2/WN6 dry basic/wet woodland
- WN6 wet woodland
- WD1 broadleaved plantation
- WD4 conifer plantation
- WS1 dense scrub
- WS2 recent (mostly conifer) woodland
- WS5 recently-felled (conifer) plantation
- GA1 agricultural grassland
- GS2 ungrazed dry meadow (coarse neutral grassland)
- GS4 wet grassland
- H3160; FL1 dystrophic water
- House/garden
- Track
- Road



ISSUE PURPOSE

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PROJECT NUMBER

60728407

FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 1 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

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1:5,000 @ A3

0 50 100 200 m

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PROJECT

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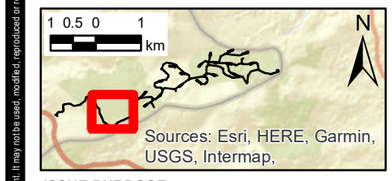
LEGEND

Proposed access shown as black dashed lines. Other proposed infrastructure black and labelled. Proposed cable connection approximately in centre of eastern survey buffer.

- Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- H4010; HH3 wet heath
- H7130; PB2deg degraded blanket bog
- WN6 wet woodland
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- WS5 recently-felled (conifer) plantation
- Track



ISSUE PURPOSE

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60728407

FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 2 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

517000

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T17

T14

T16

Borrow pit

Peat repository

Borrow pit

Construction compound

Met Mast

N

1:5,000 @ A3

0 50 100 200 m

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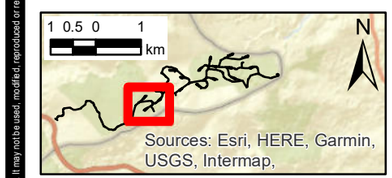
LEGEND

Proposed access shown as black dashed lines. Other proposed infrastructure black and labelled. Proposed cable connection approximately in centre of eastern survey buffer.

Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- H4010; HH3 wet heath
- H4010/H7130; HH3/PB2deg wet heath/degraded blanket bog
- H7130*; PB2 blanket bog
- H7130; PB2deg degraded blanket bog
- H7130; PB4 cutover (blanket) bog
- H7130 (partly); PB4 cutover (blanket) bog
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- WS5 recently-felled (conifer) plantation
- GS3 acid grassland
- ED3/PF2, n/a
- H3160; FL1 dystrophic water (assumed)
- Track



ISSUE PURPOSE

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FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 3 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

518000

519000

583000

T13

Peat repository

Small ravine

N

T12

T15

T11

Borrow pit

T14

1:5,000 @ A3

0 50 100 200 m

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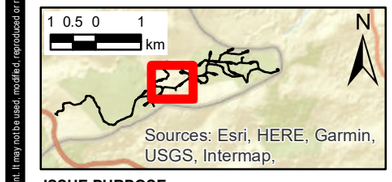
LEGEND

Proposed access shown as black dashed lines. Other proposed infrastructure black and labelled. Proposed cable connection approximately in centre of eastern survey buffer.

Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- HH1/GS3, H4030 (partly)
- H4010; HH3 wet heath
- H4010/H7130; HH3/PB2deg wet heath/degraded blanket bog
- H7130; PB2deg degraded blanket bog
- H7130; PB4 cutover (blanket) bog
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- WS5 recently-felled (conifer) plantation
- GS3 acid grassland
- GS3/PF2 acid grassland/poor fen
- GS4 wet grassland
- Track



ISSUE PURPOSE

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PROJECT NUMBER

60728407

FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 4 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

519000

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T13

Peat repository

T12

T15

T9

Small ravine

N

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LEGEND

Proposed access shown as black dashed lines. Other proposed infrastructure black and labelled. Proposed cable connection approximately in centre of eastern survey buffer.

- Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- HH1/GS3, H4030 (partly)
- H4010; HH3 wet heath
- H4010/H7130; HH3/PB2deg wet heath/degraded blanket bog
- H7130; PB2deg degraded blanket bog
- H7130; PB4 cutover (blanket) bog
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- GS3 acid grassland
- GS3/PF2 acid grassland/poor fen
- GS4 wet grassland
- FL2 oligotrophic water
- Track
- not inspected

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Sources: Esri, HERE, Garmin, USGS, Intermap,

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ISSUE PURPOSE

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PROJECT NUMBER

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FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 5 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

520000

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Construction compound

T10

T7

T4

T6

T9

Borrow pit

Peat repository

N

1:5,000 @ A3

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LEGEND

Proposed access shown as black dashed lines. Other proposed infrastructure black and labelled. Proposed cable connection approximately in centre of eastern survey buffer.

Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- H4010; HH3 wet heath
- H4010/H7130; HH3/PB2deg wet heath/degraded blanket bog
- H7130; PB2deg degraded blanket bog
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- GS3/PF2 acid grassland/poor fen
- GS4 wet grassland
- ED3 revegetating bare ground
- ED4 active quarry
- Track
- not inspected

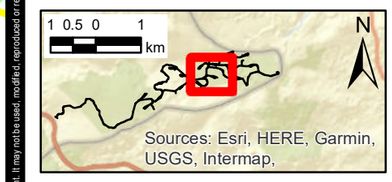

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FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 6 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

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Peat repository

Construction compound

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T4

T10

Borrow pit

Peat repository

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LEGEND

Proposed access shown as black dashed lines. Other proposed infrastructure black and labelled. Proposed cable connection approximately in centre of eastern survey buffer.

- Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- H4010; HH3 wet heath
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- GS4 wet grassland
- ED3 revegetating bare ground
- ED4 active quarry
- Track
- not inspected

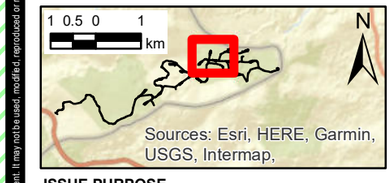

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FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 7 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

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T1

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T4

Peat repository

Peat repository

Borrow pit

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LEGEND

Proposed access shown as black dashed lines. Other proposed infrastructure black and labelled. Proposed cable connection approximately in centre of eastern survey buffer.

Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- H4030; HH1 dry heath
- H4030/H4010; HH1/HH3 dry heath/wet heath
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- GS3/PF2 acid grassland/poor fen
- Track

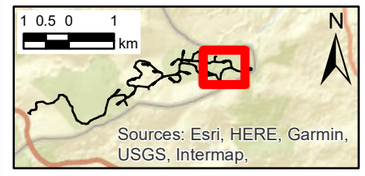

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FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 8 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

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T4

T1

Peat repository

Borrow pit

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LEGEND

Proposed access shown as black dashed lines. Other proposed infrastructure black and labelled. Proposed cable connection approximately in centre of eastern survey buffer.

Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- H4030; HH1 dry heath
- H4010; HH3 wet heath
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- PF2 poor fen (acid flush)
- Track
- not inspected

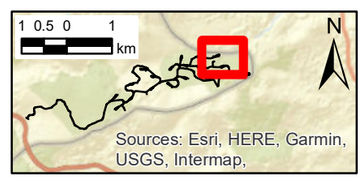

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FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 9 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

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N

Construction compound

Substation

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AECOM

PROJECT

Cummeennabuddoge Wind Farm

CLIENT

FuturEnergy Ireland

CONSULTANT

AECOM Ireland Limited
4th Floor Adelphi Plaza
George's Street Upper
Dun Laoghaire, A96 T927
www.aecom.com

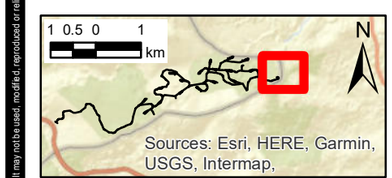
LEGEND

Proposed access shown as black dashed lines. Other proposed infrastructure black and labelled. Proposed cable connection approximately in centre of eastern survey buffer.

Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- H4030; HH1 dry heath
- H4010; HH3 wet heath
- H7130; PB2deg degraded blanket bog
- H7130; PB4 cutover (blanket) bog
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- GS4/PF2 wet grassland/poor fen
- Track



ISSUE PURPOSE

DRAFT

PROJECT NUMBER

60728407

FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 10 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

524000

525000

584000

N

1:5,000 @ A3

0 50 100 200 m

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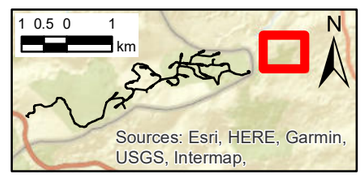
- H4010; HH3 wet heath
- H7130; PB2deg degraded blanket bog
- H7130; PB4 cutover (blanket) bog
- WD1 broadleaved plantation
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- GS3 acid grassland
- GS4 wet grassland
- Track



ISSUE PURPOSE

DRAFT

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60728407

FIGURE TITLE

Annex I habitat map with overlaid infrastructure

FIGURE NUMBER

Figure 1 Sheet 11 of 12

Revision: 0 Drawn: ND Checked: TM Approved: TM Date: 2024-07-31

525000

526000

585000

584000

N

1:5,000 @ A3

0 50 100 200 m

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LEGEND

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- Survey buffer

HABITATS: Annex I = red outline; part Annex I = dashed red outline

- H4010; HH3 wet heath
- H7130; PB4 cutover (blanket) bog
- WD1 broadleaved plantation
- WD4 conifer plantation
- WS2 recent (mostly conifer) woodland
- GA1 agricultural grassland
- GS3 acid grassland
- GS4 wet grassland
- Track
- Existing substation

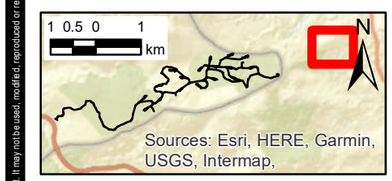

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FIGURE TITLE

Annex I habitat map with overlaid infrastructure

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Figure 1 Sheet 12 of 12