Design & Access Statement

Ørsted

Owenreagh- Craignagapple Windfarm

August 2023

JUNO | PLANNING & ENVIRONMENTAL LIMITED

Table of Contents

1.0 Introduction

1.1 Purpose of the Design and Access Statement

This Design and Access Statement (DAS) has been prepared in order to accompany a full planning application under The Planning Act (Northern Ireland) 2011 for the proposed repowering of the Owenreagh I & II Windfarms, for Owenreagh/ Craignagapple Wind Farm ("the Development") submitted to the Strategic Planning Directorate of the Department for Infrastructure ("DfI Planning").

Section 40(3) and 86(2) of the Planning Act (Northern Ireland) 2011 ("the Planning Act 2011") requires that certain descriptions of applications for planning permission and all listed building consent applications are to be accompanied by a design and access statement (D&AS). D&AS are required in respect of all 'major' planning applications.

A D&AS is a report which accompanies and supports a planning application and enables the applicant to describe how a proposed development has been designed in order to suit the chosen site and surroundings while also demonstrating that the development can be accessed adequately by users.

This D&AS has been prepared in accordance with the Planning (General Development Procedure) Order (Northern Ireland) 2015 (Planning Order 2015), Article 6, Design and Access Statements. In addition, the structure has been informed by Development Management Practice Note 12: Design and Access Statements, published by the Department of Environment (DOE) for Northern Ireland in April 2015.

This D&AS explains the background to the Development, its nature and surroundings, the detailed design iteration process that has taken place in order to reach the final proposed layout and any site specific access issues. This D&AS should be read in conjunction with the Environmental Statement (ES) prepared for the Development application.

Article 6(3) of the Planning Order prescribes the following:

> *"A design and access statement shall—*
>
> *(a) explain the design principles and concepts that have been applied to the development;*
>
> *(b) demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account;*
>
> *(c) explain the policy or approach adopted as to access, and in particular, how—*
>
> *(i) policies relating to access to, from and within the development have been taken into account,*
>
> *(ii) policies relating to access in the local development plan have been taken into account, and*
>
> *(iii) any specific issues which might affect access to the development for disabled people have been addressed;*
>
> *(d) describe how features which ensure access to the development for disabled people will be maintained;*
>
> *(e) state what, if any, consultation has been undertaken on issues relating to access to the development and what account has been taken of the outcome of any such consultation;*
>
> *(f) explain how any specific issues which might affect access to the development have been addressed; and*
>
> *(g) explain the design principles and concepts that have been applied to take into account environmental sustainability."*

The requirements of Article 6(3) are addressed by the detail of this D&AS, in particular the following sections of this Statement.

- Section 4.0: Design Principles
- Section 5.0: Site Access Arrangements

2.0 Application Background

2.1 Site History

In 1996, planning permission (Ref No.J/93/0826/B) granted for the '*Construction of a wind farm consisting of 16 turbines on 40- metre high towers, access road anemometry mast and associated works".* The application was approved subject to 10 no. planning conditions. The planning approval is not subject to any operational life-span planning conditions and therefore has an 'in-perpetuity consent'. 10 of 16 no. consented turbines were constructed and have been operational since 1997 and are referred to as Owenreagh I wind farm. The constructed turbines were Zond Z40s, with a tip height of 60m and an operational capacity output of 5 MW. Since 1997, two turbines have been decommissioned.

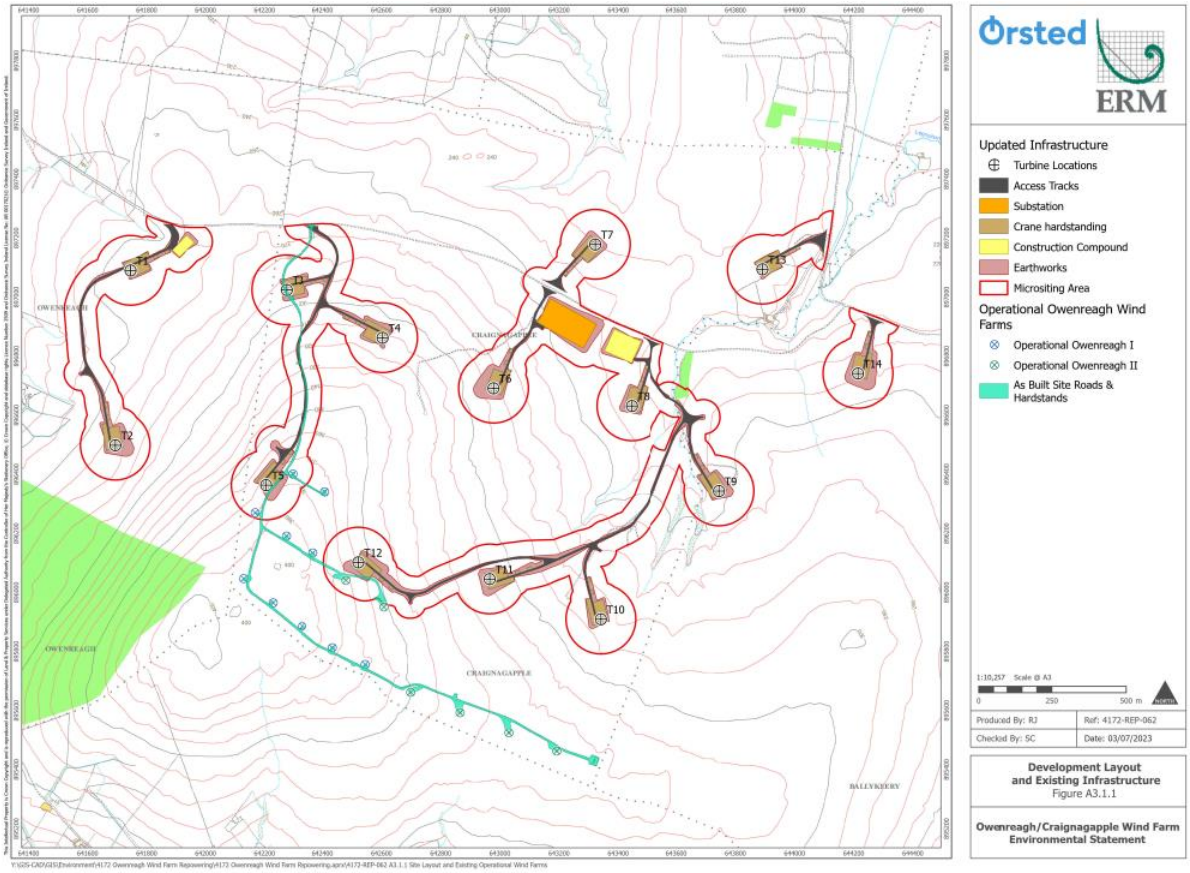
In October 2005, planning permission (Ref No.J/2004/1015/F) was granted for the "*substitution of 6 approved (unconstructed) wind turbines (total height of 60 metres ground to blade tip) with 6 wind turbines with slight specification alterations (total height of 66 metres ground to blade tip) and 475 metres of service roads linking with existing wind farm at Owenreagh Hill with development taking place within existing site boundary".* The application was approved subject to 10 no. planning conditions. The planning approval is not subject to any operational life-span planning conditions and therefore has an 'in-perpetuity consent'. The six Vesta V52 turbines, have been operational since 2008 and are referred to as Owenreagh II wind farm. a tip height of 66m and an operational capacity output of approx. 5.1 MW.

In January 2018, Derry City & Strabane District Council (DC&SDC) granted planning permission (Ref No.J/2010/0481/F) for "*Six wind turbines with an overall height from ground to blade tip of 111m, 33kv substation and compound, construction of internal site tracks and associated works and ancillary works, access points on the Glenmornan Rd and the relocation of the temporary turbine supply compound*". The consented turbines had a 111m tip-height and were approved to operate beside the existing Owenreagh I & II wind farms. Planning permission for Ref No.J/2010/0481/F expired in January 2023. The planning permission was not implemented on site.

To date, the Operational Owenreagh I & II Windfarms has made and continues to make an important contribution to Northern Ireland's Renewable Energy targets and low carbon objectives. The Applicant is seeking to secure and build on this contribution by proposing to 'repower' the Operational Owenreagh I & II wind farms.

Figure 2.1 provides an overview of the existing Owenreagh I & II wind farms, in the context of the Development.

Figure 2.1: Development Layout & Existing Owenreagh I & II Wind Farms



Source: ERM

2.2 Need for the Development

The repowering of a windfarm involves the removal of existing wind turbines from a site and replacing them with new and more efficient turbines. This process normally results in an increased overall site generating capacity and output. Repowering a windfarm site supports an ongoing use of the land at the Operational Owenreagh I & II Windfarms by a renewable asset, which is vital to Northern Ireland maintaining and building upon its renewable energy and climate change targets, as outlined in the Northern Ireland Energy Strategy- The Path to Net Zero.[1]

Repowering also presents an opportunity to sustain and create additional jobs, and to encourage continued investment in the renewable energy industry in Northern Ireland. The repowering of a windfarm differs from that of developing a greenfield site as the area has previously been developed, has demonstrated its suitability for use as a windfarm site, and will continue to be used for the same activity.

The proposed repowering project has the potential to result in an increase in the installed capacity of the Site from 9.1 MW to over 60 MW, approximately six times the existing installed capacity. The proposed larger generator size, coupled with greater wind yields from the use of taller turbines with bigger rotors, and the improved efficiency of the latest turbine models will result in a major increase to total power generated at the Site.

2.3 Overview of the Development

The Development is described in further detail in Chapter 3: Development Description of the Environmental Statement (ES). In summary, the Development will comprise of the following phases:

[1] Department of the Economy (2021) Northern Ireland Energy Strategy- The Path to Net Zero. Available at: https://www.economy-ni.gov.uk/publications/energy-strategy-path-net-zero-energy

- Decommissioning of the Operational Owenreagh I & II Windfarms (initial phase of the Development);
- Construction of the Development (likely to occur in tandem with the above phase);
- Operation of the Development; and
- Decommissioning of the Development (final phase)

The Development will comprise of the following main components:

- Decommissioning and removal of the existing turbines;
- Two temporary construction compound/laydown areas (some areas may be reinstated temporarily if required for future operational and decommissioning purposes);
- Removal and restoration of the existing crane hardstandings, access tracks and any other above-ground infrastructure in accordance with the Outline DCEMP and Draft HMEP;
- Construction and/or upgrading of seven Site access points onto the public highway;
- Construction of approximately 3,947 m of new access tracks;
- Upgrade of approximately 382 m of existing access tracks;
- Construction of turning heads and passing places on the access tracks;
- The erection of up to 14 three bladed horizontal axis wind turbines of up to 156.5 m tip height;
- Construction of temporary and permanent hardstanding areas for each turbine to accommodate turbine component laydown areas, crane hardstanding areas and internal or external transformers and/or switchgear;
- Construction of turbine foundations;
- There are no upgraded water crossings and two new water crossings;
- Installation of buried underground electrical and communication cables;
- Construction of a substation and control building, and associated compound, including windfarm and grid connection operating equipment; and
- Associated ancillary works.

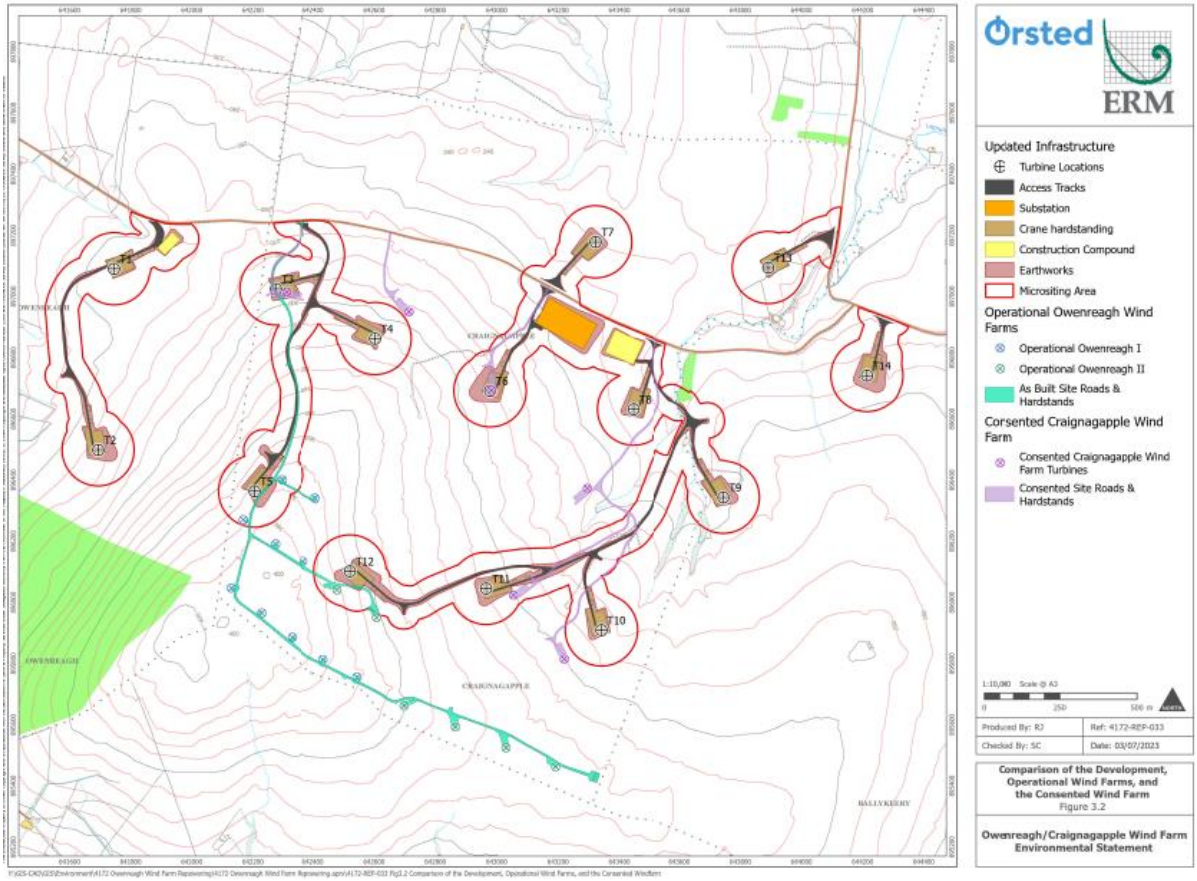
In addition to the elements outlined, the Development also includes a number of temporary minor works along the abnormal transport route and construction route, to facilitate the construction phase of the Development.

3.0 Site Location and Description

3.1 Description of the Site and Surrounding Area

The Site is located within the DC&SDC administrative area. The location of the site is shown in Figure 3.1 of the ES and is situated approximately 5 km east of Strabane and 6km southeast of Artigarvan, in Co.Tyrone. The Operational Owenreagh I & II Windfarms are located within the Site – as detailed in the following section and shown in Figure 3.2 of the ES. A comparison between the Development with the Operational Owenreagh I & II Windfarms and the consented Craignagapple wind farm layouts is shown in Figure 3.1.

Figure 3.1: Comparison between the Development and the Operational Owenreagh I & II Windfarms and the consented Craignagapple wind farm



Source: ERM

The topography of the Development and the immediate surrounding areas comprises undulating upland. The Development itself varies significantly in elevation, with new infrastructure proposed at elevations from 228 m Above Ordnance Datum (AOD; approximately sea level) in the northern portion, to 368 m AOD in the south-western portion. There are several hilltops bordering the Development, but no summits are located within the actual boundaries of the Development. These hilltops include Owenreagh Hill to the south (453 m AOD), Evish Hill to the west (249 m AOD) and Koram Hill to the southwest (372 m AOD).

There are 4 watercourses that run from the Development to the north and west and drain into the Glenmornan River, located approximately 500 m north of the Site. There is also one water body nearby in Moor Lough, which is approximately 1.2 km north-east of the nearest proposed turbine.

Habitats within the Development include improved acid grassland, acid grassland, improved grassland, modified blanket bog and blanket bog. Further details on the habitats within the Development are provided in Chapter 10: Ecology of the project Environmental Statement submitted as part the planning application.

Glenmornan is the closest settlement to the Development, approximately 2.3 km to the north from the nearest proposed turbine. The Development is located entirely within the Sperrin Area of Outstanding Natural Beauty (AONB). There are no ecologically designated sites within the Development. There are no designated heritage features within the Development or within 1 km of any proposed Development infrastructure.

There are other operational wind farms within a 10km vicinity of the Development, including Eglish wind farm and Slieve Kirk windfarm.

3.2 Site Selection Process

The Site was considered appropriate for the following reasons:

- The Site already contains the Operational Owenreagh I and II Wind Farms which have been operational since 1997 and 2008, respectively. The Site also includes land which was subject to the planning permission for Craignagapple Wind Farm, comprising six turbines with tip height up to 111 m. There is already a meteorological mast and LiDAR measurements which show that there is an excellent, proven wind resource at the Site;
- The existing technology is no longer state-of-the-art, and modern wind turbines are capable of producing more power and increasing the potential energy yield from the Site;
- The repowering of the site (removal of existing Owenreagh I and II turbines and installation of new turbines) allows an existing wind farm to continue operating and contributing towards renewable energy targets albeit with more modern and more efficient turbines. The benefit of this is an increased overall generating capacity and output, contributing to the local economy and Northern Ireland's climate targets;
- Repowering the Operational Owenreagh I and II Wind Farms increases renewable energy generation capacity and re-uses the existing infrastructure wherever possible. This results in a development with a smaller footprint and fewer environmental effects compared to a similar development without existing infrastructure;
- The Applicant has been conducting detailed ecology and ornithology surveys on the site since 2018 and is familiar with the importance of local habitats in this area. Survey information gathered has been used to inform best practice measures to protect existing habitats and species of concern;
- The Applicant has collated an extensive database of information in relation to the Site and its environs through their experience of managing the Operational Owenreagh I and II Wind Farms and gaining consent for Craignagapple Wind Farm. This existing information has been utilised to inform the Development design process; and
- Alongside the generation of renewable energy, agriculture, such as cattle and sheep farming, is the other principal land use, the use of the Site as a wind farm is and will continue to be a compatible use.

4.0 Design Principles

The design and layout of the Development was informed by a range of on-site environmental, and ecological constraints, landscape and visual amenity considerations and turbine efficiency and yield requirements. Further details on the design principles are discussed in this section. As the Development is located within the Sperrin AONB, landscape and visual amenity considerations were critical, and consideration of potential significant effects and impacts on the integrity and special character of the AONB were embedded throughout the design process.

Current best practice guidance provides a framework for the consideration of key design issues, including turbine size, layout composition, windfarm design in relation to landscape character, and designing for multiple wind farms is set out in the following documents:

- The Northern Ireland Environment Agency (2010). Wind Energy Development in Northern Ireland's Landscapes[2];
- Department of the Environment (2015), The Strategic Planning Policy Statement (SPPS)[3]
- Department of the Environment (2009). Planning Policy Statement 18: Renewable Energy[4];

[2] Department of Agriculture, Environment and Rural Affairs (2010). Wind Energy Development in Northern Ireland's Landscapes (Accessed 28/11/2022)
[3] Department of the Environment (2015), The Strategic Planning Policy Statement (SPPS). The Strategic Planning Policy Statement | Department for Infrastructure (infrastructure-ni.gov.uk). (Accessed 14/02/2023).
[4] Department of the Environment (2009). Planning Policy Statement 18: Renewable Energy. (Accessed 28/11/2022)

- Northern Ireland Environment Agency (NIEA) (2010). Wind Energy Development in Northern Ireland's Landscapes: Supplementary Planning Guidance to accompany Planning Policy Statement 18: Renewable Energy[5]; and
- Scottish Natural Heritage (SNH) (2017). Siting and Designing Windfarms in the Landscape[6].

The following principles were adopted by the aforementioned guidance, which, in turn, informed the design iterations to ensure that the final design of the Development was the most suitable for the Site:

- The avoidance of inconsistent turbine spacing leading to relatively large gaps, outliers and excessive turbine overlapping to minimise visual confusion and ensure a balanced/compact array from key views. The distance between turbines is usually a function of rotor diameter and prevailing wind direction;
- Achieving an appropriate scale of turbine, taking account of the landscape context;
- The maintenance of turbine manufacturers recommended spacing between turbines in order to minimise turbulence and turbine fatigue, leading to reductions in energy yield, taking account of the prevailing wind direction for a site;
- Understanding and respecting the ground conditions and topography of the Site, taking account of turbine manufacturers' specifications;
- Maximising the separation from residential dwellings; and
- Respecting other environmental constraints and associated buffers.

The identification of environmental effects is an iterative process, running in tandem with the wind farm design process. An analysis of the key design considerations for each technical discipline is given in Sections 4.1 to 4.1.11 of this Statement. The layout of turbines within the Development has undergone a series of design iterations to avoid or reduce potential adverse effects. This process has resulted in the final layout presented and assessed in the project ES (Figure 3.1 and Figure 4.1) and planning application drawings which represent the optimum fit within technical and environmental parameters considered. In addition to the turbine locations, the other infrastructure elements of the Development, i.e., access roads, substation, temporary compounds and crane hardstanding areas, have been designed to minimise potential adverse environmental and landscape effects. The potential adverse environmental effects of these elements have been minimised through careful design and best practice construction methods.

4.1 Landscape & Visual Amenity Design Considerations

The iterative design process considered the potential landscape and visual effects, with the primary objectives being to (i) keep the proposed turbines contained within the upland landscape and avoid encroachment into the surrounding lowland landscapes and (ii) to minimise potential impacts on the integrity and special qualities of the Sperrin AONB. The successive layouts have been modified to avoid stacking and gapping of the proposed turbines, as seen from the key viewpoints representative of visual receptors in the local area. Landscape and visual considerations have been balanced against other environmental and technical considerations to ensure a holistic approach to design.

4.1.1 Design Viewpoints

Multiple key viewpoints were selected as design viewpoints, against which to test the acceptability of views using wirelines for each turbine layout option. Design viewpoints have been selected based on an understanding of where the Development would be visible from, where static views will be gained, such as popular hilltops, or where there is a particular concentration of residential properties. Design viewpoints were selected and agreed during pre-application discussions with DfI Planning. Further details regarding the selected viewpoints and justification on the viewpoint selection, taking account of the DfI Planning advice, are provided in Chapter 6 of the Environmental Statement: Landscape and Visual Impact Assessment.

4.1.2 Design Principles

The landscape and visual design objectives are as follows:

[5] Northern Ireland Environment Agency's (NIEA) Wind Energy Development in Northern Ireland's Landscapes: Supplementary Planning Guidance (SPG) to accompany Planning Policy Statement 18 Renewable Energy (Accessed 28/11/2022)
[6] Scottish Natural Heritage (2017). Siting and Designing Windfarms in the Landscape (Accessed 28/11/2022)

- To consider the latest wind turbine technology available, larger rotor sizes and turbine hub heights to arrive at a turbine tip height considered appropriate for the Development;
- To create a visually legible design, taking account of other environmental and technical issues and constraints where relevant, and create a simple, positive layout, viewed consistently from different positions;
- To ensure that the views of the Development appear legible, and the turbines relate well to the landform and each other;
- To create a compact scheme which relates to the underlying landform;
- To group turbines to create a balanced and coherent image, avoiding where possible 'stacking' or overlapping of turbine rotors in lines, favouring an evenly spaced and elevated group, that reflects the nature of the undulating landscape; and
- To avoid locating turbines such that they would have an overwhelming or overbearing effect on residential amenity.

The iterative design process has refined the original layout to achieve the optimum design and scale of turbine for the Development, helping avoid and mitigate effects on the landscape and visual receptors wherever possible, including upon the integrity and special qualities of the AONB.

4.1.3 Ecology

In recognition of the high importance afforded to active peatland in the Department of the Environment's *'Planning Policy Statement 18: Renewable Energy'* (2012) and the *'Strategic Planning Policy Statement for Northern Ireland: Planning for Sustainable Development'* (2015), additional assessments were undertaken for any habitats that may qualify as 'active peat', in accordance with NIEA, Natural Heritage, Development Management Team Advice Note (2012) *Active Peatland and PPS18*.

Minimising direct and indirect effects on active peat was a principal design driver for turbine infrastructure locations, as described in Chapter 10: Ecology of the Environmental Statement.

4.1.4 Hydrology and Hydrogeology Considerations

During the EIA and design development process, a desktop and site-based survey was carried out to inspect and identify all water features with the potential to be substantially affected. The aim of the design process was to achieve a layout that avoids effects on hydrological sensitive receptors. The principal receptors were on-site active peat and watercourses, and off-site watercourses including the River Foyle and Tributaries Special Area of Conservation (SAC) and the River Faughan and Tributaries SAC. During design the following hydrological design principles were applied where possible.

- Avoid development in areas of active peat and where development would lead indirectly to effects on active peat (e.g., by changing groundwater levels);
- Minimise watercourse crossings;
- Achieve a separation distance of 50 m between construction activity and watercourses (natural) mapped at a 1:50,000 scale, and a separation distance of 20 m for anthropogenic drains and smaller natural watercourses not featured on published mapping; and
- Utilise existing infrastructure such as access tracks where possible.

4.1.5 Peat Depth & Stability Considerations

Peat depth and stability have been considered in the site design. Peat, including active peat, has been the key design constraint within the Site. There has been informed consultation with the Northern Ireland Environment Agency (NIEA) and the Geological Service Northern Ireland (GSNI) throughout the design process on matters relating to peat depth and stability considerations. There has been detailed peat probing to measure the depth of peat across the site, with a greater density of probing in areas where infrastructure is planned. The depths found have ranged from 0 m to 4.3 m with almost 75% of the areas probed being less than 1.5 m deep and 90% of the areas being less than 2 m deep.

A peat slide risk assessment (PSRA) has been carried out for the Site and has been discussed with GSNI prior to submitting the planning application. This includes mitigation for any residual slide risk. There is no development infrastructure proposed in areas identified by the PSRA has having a 'high' or 'medium' PSRA ranking.

4.1.6 Ornithology

Potential ornithological constraints to the design of the Development were identified from the baseline surveys and assessment and the objective in the design process was to avoid or minimise these effects:

- Disturbance and displacement to breeding birds; and
- Collision risk during operation.

No specific design constraints for ornithological receptors were required, however potential ornithological impacts were considered during the turbine selection. The Development's Habitat Management & Enhancement Plan makes provision for a range of habitat management mitigation proposals to improve the potential habitat for snipe, breeding waders and red grouse as part of a range of wider habitat management proposals.

4.1.7 Residential Amenity (Noise, Shadow Flicker and Residential Visual Amenity) Considerations

A key factor in the initial selection of the Site was the distance that could be achieved between properties and turbines to minimise potential effects from the Development on the residential amenity of neighbouring properties. The development layout has been informed by noise, shadow flicker and residential visual amenity assessments, to ensure that there will not be any unacceptable adverse environmental effects on the residential amenity of neighbouring residential properties. There are no residential units located within the minimum 500m residential separation buffer.

Chapter 12- Noise of the ES assesses the noise impact of the Development upon neighbouring properties and concludes that there will be no significant noise effects from the Development on neighbouring properties.

ES Technical Appendix A6.2- Residential Visual Amenity Assessment (RVAA) details an assessment for each property or property cluster within specified 2km distance from the proposed wind farm turbines. The RVAA concluded that the Development does not have the potential to give rise to overbearing or over whelming effects on any of the properties in respect of the visual amenity of residents at the property. The RVAA concluded that residential visual amenity of existing and committed residential receptors will not be adversely affected to such a degree that the impact results in a property becoming an unattractive place to live.

The 'Shadow Flicker Assessment' is contained within Chapter 15 of the ES. The ES details the effects of shadow flicker upon sensitive receptors, including residential units, during the operational phase of development. In line with prevailing guidance (PPS18 Best Practice Guidance) and additional UK guidance (Planning Practice for Renewable and Low Carbon Energy) a 'Study Area' of ten times rotor diameter distance (1,360m- ten times the maximum rotor diameter of 136m) and 130 degrees either side north around each proposed turbine location was mapped, and the potential impact upon residential units within the study area assessed. The shadow flicker assessment detailed that the potential for shadow flicker effects on six residential properties within the study can be mitigated and alleviated via standard shadow flicker mitigation measures, that can be secured via planning condition.

4.1.8 Archaeology & Cultural Heritage

A desk-based assessment and archaeological walkover was undertaken as part of the EIA. There are no known designated cultural heritage features within the Site and no significant indirect effects likely upon features in the surrounding historic environment from the Development (see Chapter 7: Archaeology and Cultural Heritage of the Environmental Statement). As such, cultural heritage features were not a design constraint.

4.1.9 Site Accesses

The requirement for seven site access points onto the public road was identified during the design process, in order to minimise potential impacts upon active peat. In this context the project team, in particular the transport consultants engaged with DfI Roads regarding site access considerations. Ensuring safe use of the public road during access and egress was a key issue, in addition to designing site access locations that could achieve the required visibility splays.

4.1.10 Buildability

The Site is largely on sloping ground, and transporting turbine components around the Site requires having no sharp corners or steep slopes for access tracks. Turbine foundations and crane hardstandings need to be on flat ground or made flat by altering the landform. As well as careful siting and routing of access tracks, cut and fill operations are needed to ensure that these slope criteria are

met. To minimise landscape and visual impacts, and the extent of land-take of the Development, the amounts of cut and fill were minimised through careful 3D design.

4.1.11 Summary of Design Criteria

As set out above, the features that influenced design were broadly in order of priority:

- Landscape and related potential effects on recreation and tourism;
- Active peat (direct impacts and indirect impacts via hydrological linkage);
- Ecology Receptors- including hydrological pathways to designated sites;
- Peat slide risk considerations;
- Slope (ensuring buildability and minimising cut and fill requirements);
- Visibility splays for access points onto the public highway; and
- Potential interactions with telecommunications and aviation.

4.2 The Design Iteration Process

The layout of the Development has evolved throughout the EIA process. This iterative approach has allowed the findings of the two-phased pre-application community consultation events, along with the EIA, to guide the evolution of the Development and has allowed the design to be modified to avoid and mitigate against environmental effects where possible.

This was achieved through preliminary assessments of the environmental effects, consideration of the identified spatial constraints combined with consideration of the appearance of the Development from the design viewpoints to take account of landscape and visual considerations. Three design workshops involving the project team were held to inform the design process:

- The first workshop was held after the EIA Scoping Request and pre-design chill, with an overview of onsite constraints and the developable area, based on likely turbine heights and dimensions. This resulted in the layout on which the first round of public consultation (November 2021) was based;
- The second workshop followed receipt of most EIA Scoping consultation responses from Statutory Consultees, the completion of most baseline survey data, phase 2 peat probing, active peat assessment and high-level peat slide risk assessment. This workshop helped inform final design changes based primarily around the site access tracks, the location of active peat on site, and watercourse buffers; and
- The third workshop followed a review of the latest design changes, to ensure infrastructure and access tracks were positioned in such a way that environmental effects were avoided, where possible.

4.2.1 Layout Evolution

There were four principal iterations of the layout of the Development through the design and EIA process. These are set out below, along with the rationale for changes leading to them.

4.2.2 Layout 1- Scoping Layout

Layout 1 was initially informed by landownership boundaries. Constraints were then identified from preliminary site surveys, and desk-study information, primarily from Ordnance Survey of Northern Ireland (OSNI) mapping, and included the following parameters:

- Minimum 66.5 m oversail buffer of the Site Boundary;
- Minimum 50 m buffer of watercourses that could be identified on the 1:50,000 OSNI map;
- Minimum 50 m buffer of public roads, which represented the topple height of the turbines plus 10%;
- An exclusion of areas likely to be active peat;
- Minimum 1000 m buffer for residential properties, to minimise potential noise effects and ensure that turbines are located sufficiently far from properties, so as not to appear dominant in views; and
- Areas were avoided where the topography of the ground represented a slope greater than 20%, which have the potential to give rise to technical constraints for access, and construction on steep slopes.

These constraints were mapped and appropriate turbine technical spacing (5 x 3 rotor diameters between the turbines) was applied to ensure minimum overlap considering the predominant south-

westerly wind direction. This resulted in a 15-turbine layout presented in Layout 1 (see Figure 4.1). This layout was also used to inform the request for a Scoping Opinion. For the purposes of Scoping, 180 m turbine tip heights were initially proposed.

4.2.3 Layout 2 (Design Chill Layout)

Layout 2 resulted from the first design workshop and is shown in Figure 4.1. It aimed to avoid or mitigate by design as many of the environmental sensitivities as possible to achieve an acceptable balance between environmental and technical considerations. This considered the first phase of peat probing, ecology surveys, and the landscape and visual assessment design principles. The following changes were made:

- T2 was moved further to the north-northeast to avoid ecological constraints (i.e. bat roost and linear foraging features)
- T10 was relocated further southwest, to avoid hydrologic constraints (i.e. flush areas); and
- T12 was moved further west, further from T14 to avoid areas of active peat.

This iteration included a revision to the turbine tip height down to 156.5 m. This was in recognition that the Site is on the western edge of the Sperrin's Area of Outstanding Natural Beauty (AONB), responded to the visual relationship of the Development with the surrounding landform and landscape and was informed by pre-application discussions with DfI Planning. This reduced height was set at 156.5m instead of 150 m to allow the blade to be at least 20 m above the ground and reduce risks to lower-flying bats.

4.2.4 Layout 3 (Track Layout)

Layout 3 followed a design workshop that was informed by an analysis of active peat survey results and peat depth probing. Layout 3 included setting out locations of the infrastructure, which was principally the access tracks. An initial access track layout (between Layouts 2 and 3) was used as the starting point, and overlain on the map of active peat, as surveyed. The principal aim was to avoid placing infrastructure on areas of active peat whilst ensuring buildability.

This, alongside adherence to other onsite constraints, resulted in the access track and crane hardstanding layout shown for Layout 3 in Figure 4.1, which achieved the following in particular:

- Avoidance of substantial areas of active peat between T7 and T6, with T7 also being moved further north-east to avoid these areas;
- Initial 3D modelling of the access track network, to improve buildability by setting out maximum track gradients and to map areas of landform cut and fill requirements; and
- The re-use of the existing access track, as far as possible, in order to reach T16, minimising the increase in footprint of the Development.

4.2.5 Layout 4 (Final Layout)

The Final Layout was discussed during the second design workshop and confirmed during the third design workshop. The most pronounced design changes occurred between Layout 3 and the final layout to ensure effects on active peat, valued habitats, and watercourses, were minimised. This layout included the renumbering of turbines to facilitate construction and operation, previous turbine number is included in parentheses below, wherever a new turbine number is mentioned. The final layout with the revised numbering is shown in Figure 3.1 and Figure 4.1 of the project ES.

Key changes are summarised as follows:

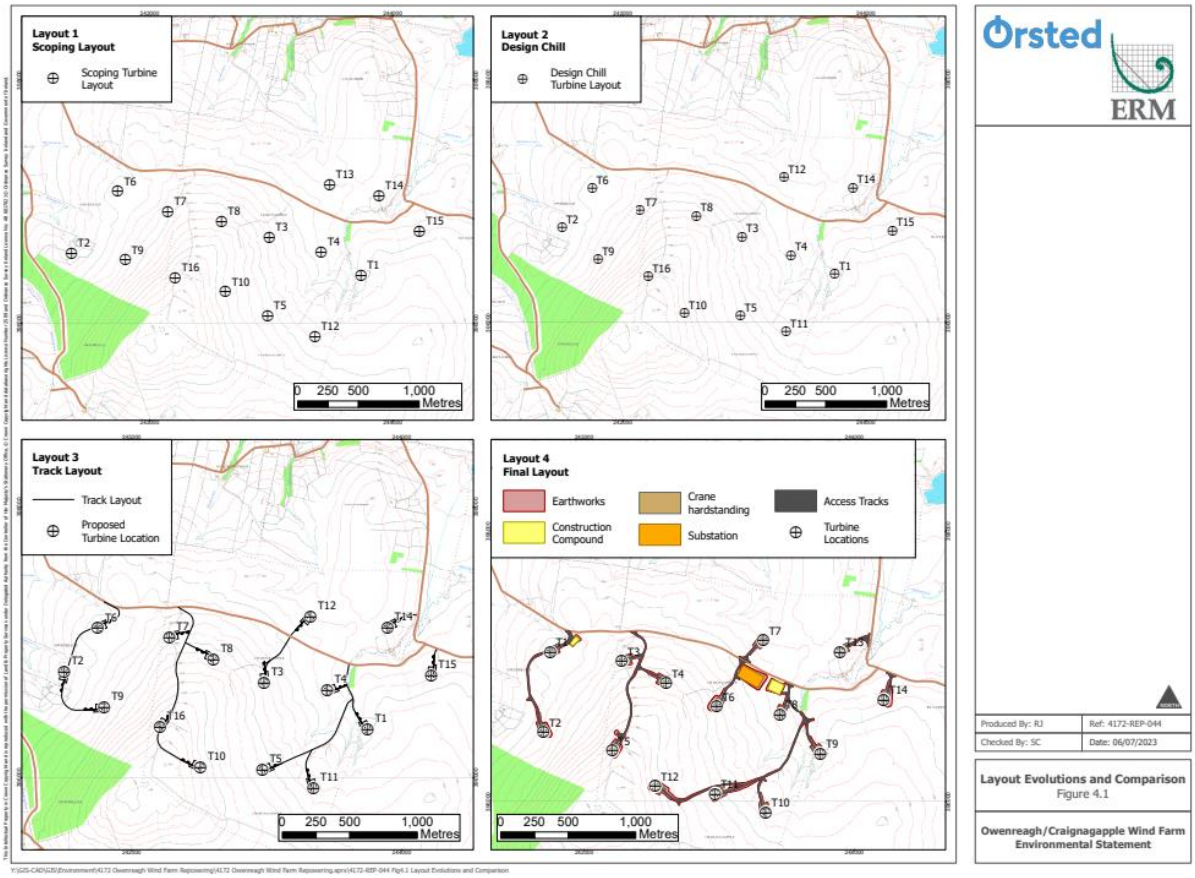
- T2 (T9) was repositioned c. 100 m west to reduce the slope at its location, in turn reducing the peat slide risk and the amount of cut and fill required for its construction;
- The turbine identified as T2 in Layout 3 was removed to minimise the number and length of watercourse crossings. Removal of T2 was also beneficial from an LVIA perspective, as this was the closest turbine to residential properties;
- The access track from T5 (T16) to T12 (T10) was removed to minimise peat slide risk, cut and fill requirements, and to prevent potential impacts to active peat. T12 (T10) is now accessed from the east near T11 (T5) to avoid this;
- The access track to T8 (T4) was moved further west to maximise separation from the nearby watercourse;

- The track between T8 (T4) and T9 (T1) was also modified, with the track now continuing upslope of the watercourse, then crossing to T9 (T1) via a bridge, to minimise work in proximity to the watercourse;
- Site access point locations were reviewed in detail and adjusted to improve visibility splays and ensure that minimum requirements for safety were met; and
- The substation and construction compounds were added, along with turning heads for turbine delivery vehicles during the construction phase. These were located outside areas of active peat, outside watercourse buffers, and such that any long-term landscape and visual effects could be mitigated with suitable planting.

The Final Layout was used at Pre-Application Community Consultation event 2, with attendees being primarily interested in the distance of the closest turbine from their own property and the Development photomontages.

Figure 4.1 overleaf provides an overview of the evolution of the Development from Layout 1 to Layout 4 highlighting the design development from the initial design iteration to the final Development design which is the subject of this planning application.

Figure 4.1: Layout Evolutions and Comparisons



Source: ERM

5.0 Site Access Arrangements

As noted in section 4.1.9, the Development includes provision for seven site access points onto the public road. Six new site entrance junctions are to be constructed as part of the initial decommissioning and construction phase, and one existing junction is to be improved. The location of the ecology receptor of active peat was a key design constraint, which necessitated the requirement of seven access to serve the Development. The are five access points proposed along Glenmornan Rd, one of which is an existing entrance that will be improved. There are two access points proposed along Napple Rd.

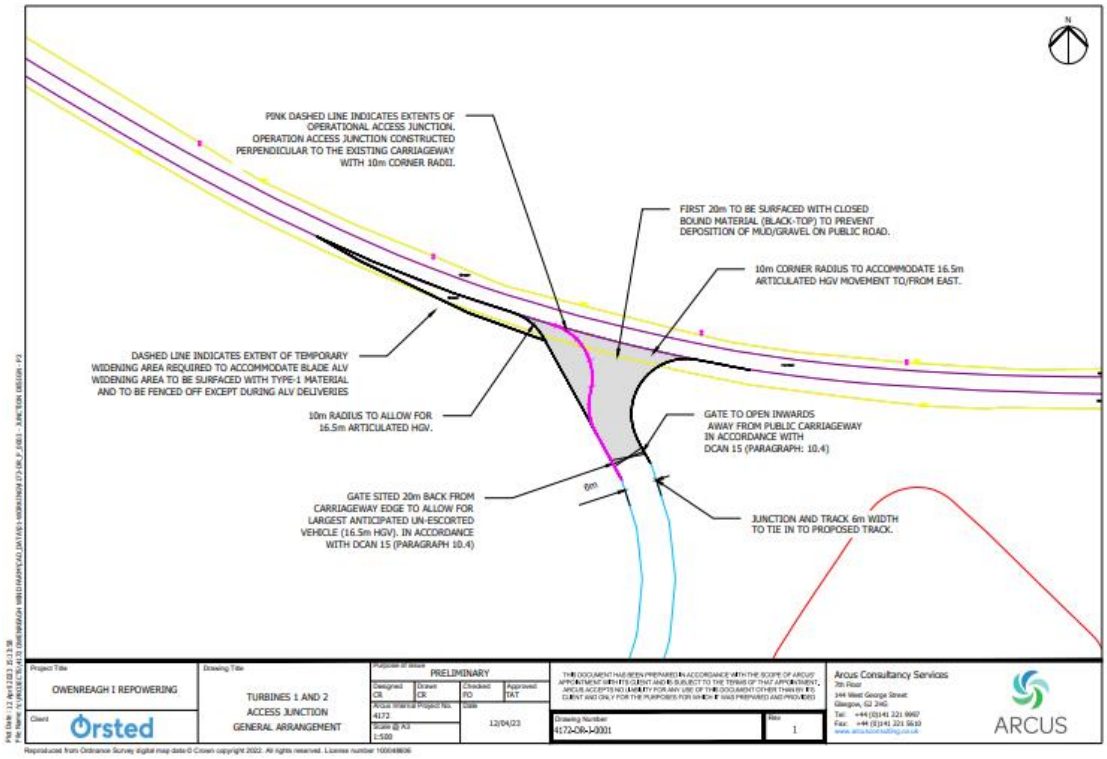
Each of the seven junctions has been designed with a permanent footprint to accommodate the largest general construction vehicle anticipated, which is a 16.5 metre (m) HGV. At most of these junctions, an additional temporary widening area will be required to accommodate Abnormal Load Vehicles delivery during the decommissioning and construction phase.

During design development, ensuring safe use of the public road during access and egress was a key design issue, in addition to designing site access locations that could achieve the required visibility splays. Detailed drawings of the proposed new and improved site entrances are provided in **Technical** Appendix A13.4 of the Environmental Statement with accompanying visibility splay assessments.

The visibility splay assessments were undertaken to DCAN 15 and were informed by speed survey data collected as part of the baseline traffic data, which is presented in **Technical Appendix A13.2**. In summary, all the proposed new and improved site entrance junctions comply with the DCAN 15 standard for visibility and can therefore operate safely for their intended function.

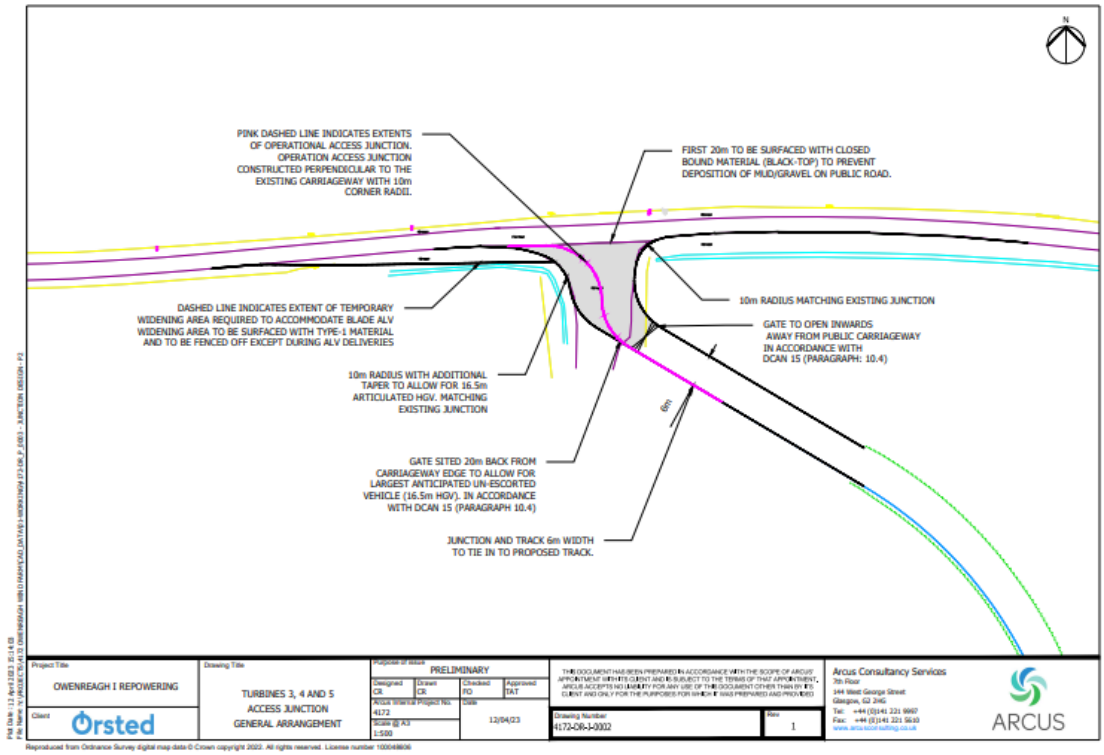
Figures 5.1 to 5.6 detail the proposed site access junctions.

Figure 5.1: Access Junction to Turbine No.1 & No.2 (along Glenmorman Rd)



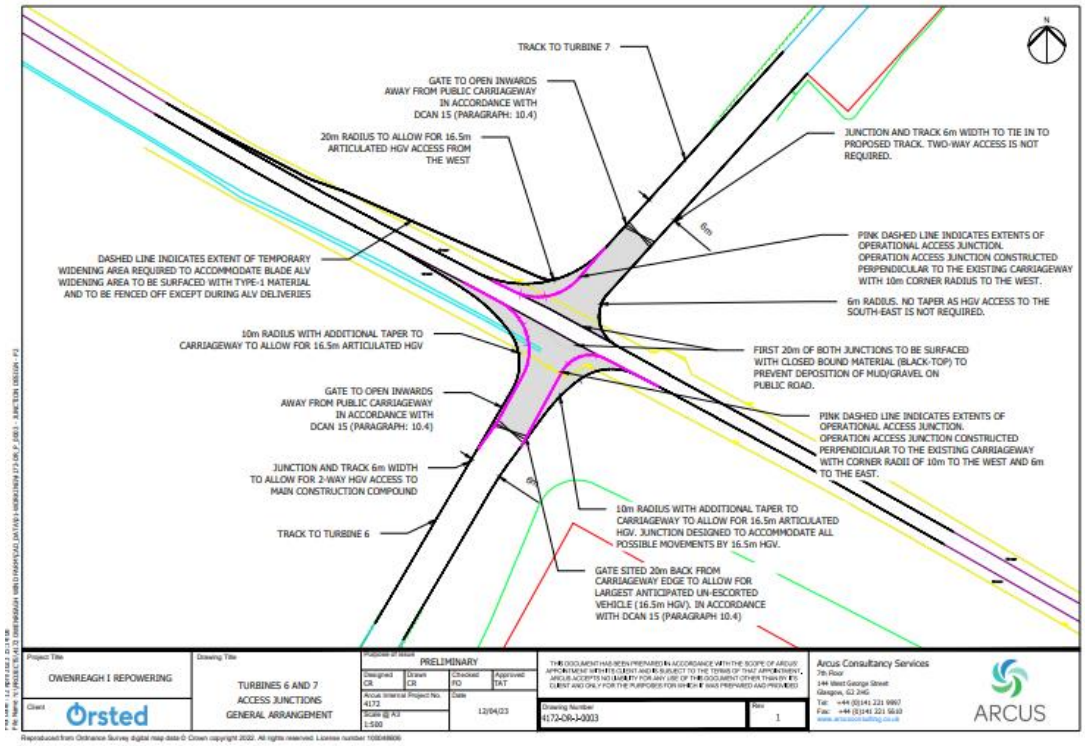
Source: ERM

Figure 5.2: Access Junction to Turbines No.3, No.4, and No.5 (along Glenmornan Rd)



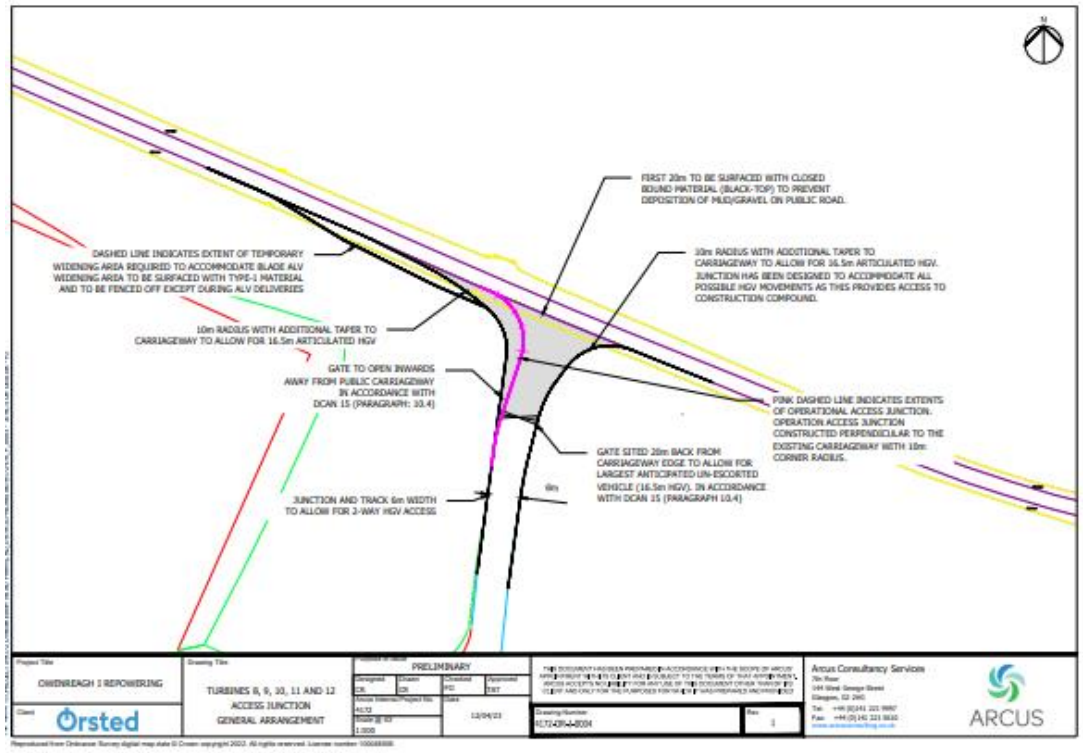
Source: ERM

Figure 5.3: Two Access Junctions to Turbines No.6 and No.7 (along Glenmorman Rd)



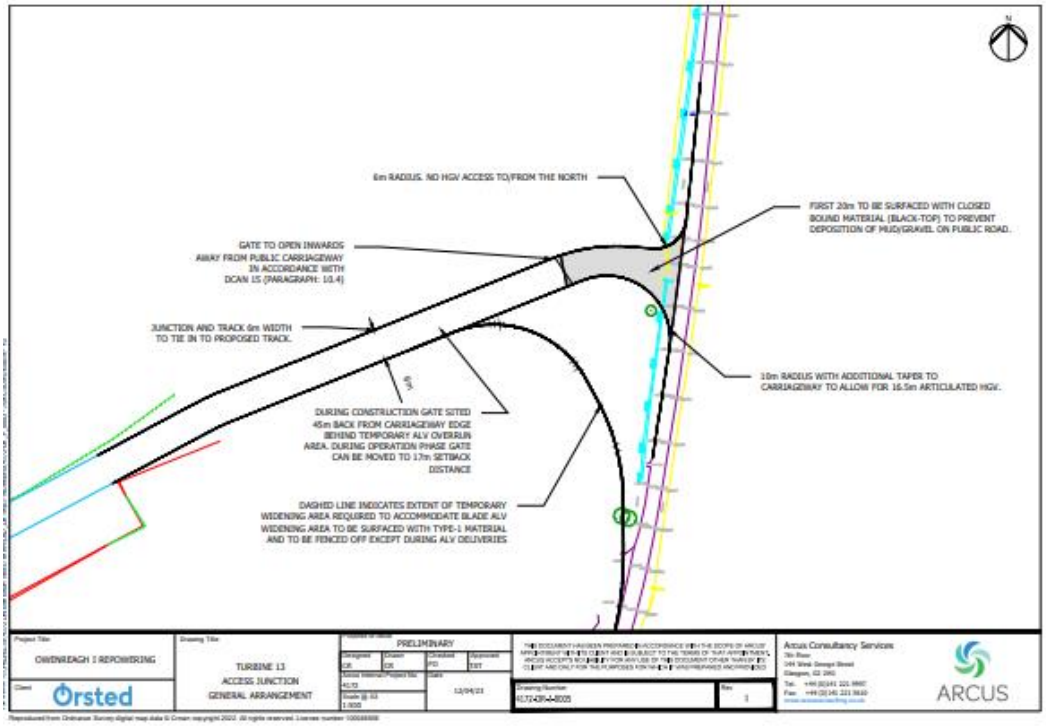
Source: ERM

Figure 5.4: Access Junction to Turbines No.8, No.9, No.10, No.11 and No.12 (along Glenmorman Rd)



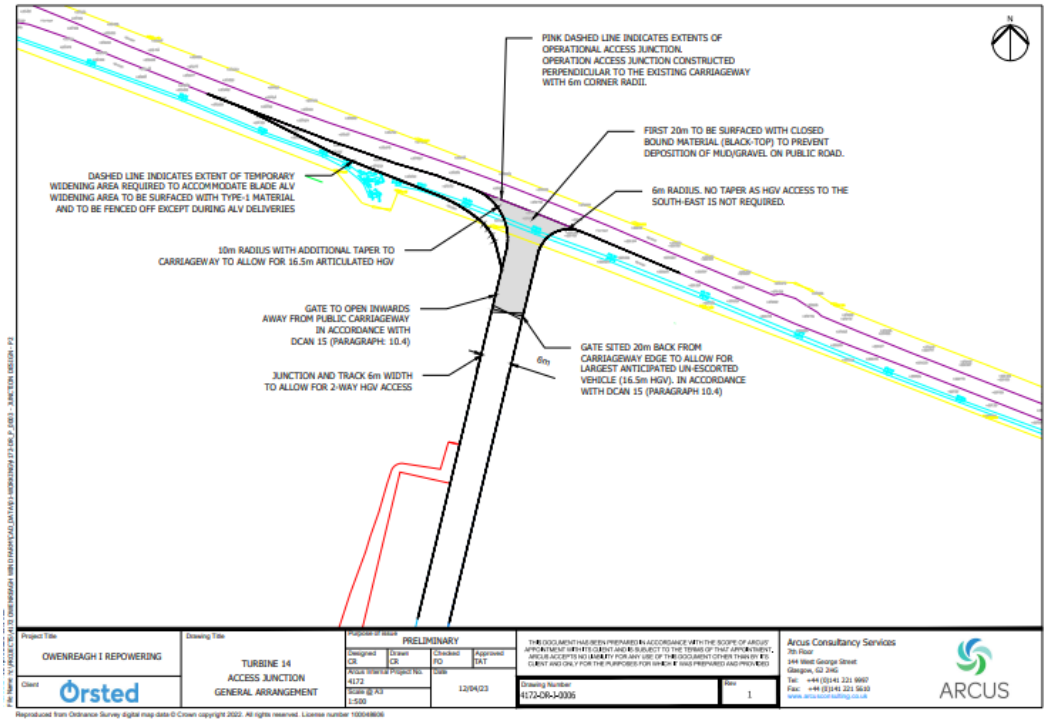
Source: ERM

Figure 5.5: Access Junction to Turbine No.13 (along Napple Rd)



Source: ERM

Figure 5.6: Access Junction to Turbine No.14 (along Napple Rd)



Source: ERM

Chapter 13- Traffic & Transport of the ES provides details on access route options for decommissioning/construction vehicles and provides an estimate of trip generation during this period. The transport assessment includes a routing study to establish the feasibility of the access route for turbine delivery from either Belfast or Larne to the Site entrance. Details of this and assessment of

traffic impacts during the initial decommissioning/construction and operational phases of the Development are provided in Chapter 13: Traffic and Transport. The 14 no.turbines will be accessed via a series of internal access roads. Provision is also made for turbine hardstand areas, and turning circles throughout the development layout.

5.1 How Policies Relating to access to, from and within the Development have been taken into account?

5.1.1 SPPS- Transportation Planning Policy

The SPPS states that in assessing development proposals, planning authorities must apply the Department's published guidance and recommends that planning authorities should require the submission of a Transport Assessment (TA) for proposals that are likely to generate a significant volume of traffic. Chapter 13- 'Traffic & Transport' of the ES assesses the impact of the Development, including the proposed site access arrangements, upon the existing traffic and transport environment. Chapter 13 is supported by the following technical appendices:

- Technical Appendix A13.1: Abnormal Load Route Assessment;
- Technical Appendix A13.2: Traffic Count Data;
- Technical Appendix A13.3: Construction Development Programme; and
- Technical Appendix A13.4: Access Junction Design and Visibility Splay Assessment.

Chapter 13 concludes that subject to (i) embedded design mitigation measures which include the provision of temporary passing bays to facilitate construction traffic and traffic management measures at the splays at the existing Hollyhill Road / Glenmornan Road junction and Gorticrum Road / Glenmornan Road junction, and (ii) identified mitigation measures which will form part of an agreed 'Construction Traffic Management Plan' (CTMP) that the Development, including the site access arrangements, will not result in an adverse impact upon the existing traffic and transport environment**.**

5.1.2 Planning Policy Statement No.3- Access, Movement and Parking (PPS 3)

In respect of PPS3, there is no conflict with the equivalent provisions in the SPPS. Therefore, until DC&SDC adopts its Plan Strategy, PPS3 will apply, together with the SPPS, with no less weight attached to PPS3 policy. Policy AMP 2- Access to Public Roads outlines that planning permission will only be granted for a development proposal involving direct access, or the intensification of the use of an existing access, onto a public road where: such access will not prejudice road safety or significantly inconvenience the flow of traffic. The proposal does not conflict with Policy AMP 3 'Access to Protected Routes'. Policy AMP7 'Car Parking and Servicing Arrangements' details that development proposals will be required to provide adequate provision for car parking and appropriate servicing arrangements.

The site junction arrangements have been designed in line with the requirements of DCAN 15, which meet the policy requirements of Policy AMP 2- Access to Public Roads. **Chapter 13** concludes that subject to the identified mitigation measures, which will form part of an agreed 'Construction Traffic Management Plan' that the Development will not result in an adverse impact upon the existing traffic and transport environment. The use of the seven-site access during the decommissioning/ construction phases will not prejudice road safety or significantly inconvenience the flow of traffic.

The measures associated with the decommissioning/construction phases of the Development have been thoroughly assessed and will not prejudice road safety, road users or inconvenience the traffic flow to an unacceptable level. Additionally, the operational phase of the Development has been assessed and it is concluded that that Development (including new site accesses) will not prejudice road safety, road users, or significantly inconvenience the flow of traffic.

5.1.3 Planning Policy Statement 13- Transportation & Land Use (PPS 13)

The policy provisions of PPS13 are consistent with the policy provision of the transportation policies in the SPPS. Section 5.1.1 of this Statement details the policy assessment in respect of the Development

in terms of the SPPS. This assessment is also applicable to PPS13 and the conclusions are consistent. The Development is consistent with the policy provisions of PPS13.

5.1.4 Internal Access Road Design- Key Policy Drivers

As noted in section 5.0, the location of the ecology receptor of active peat was a key design constraint, which necessitated the requirement of seven access to serve the Development, and the proposed internal access roads. The SPPS and Planning Policy Statement No.18- Renewable Energy details that renewable energy development on active peatland will not be permitted unless there are imperative reasons of overriding public interest as defined under The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995. Therefore, this policy driver directed that the site access and internal access roads were required to avoid areas of active peat. The project ecologists had a key role, identifying areas of 'high constraint' for active peat to be avoided during the design of the turbine and infrastructure layout.

5.2 How Policies Relating to access in the Local Development Plan have been taken into account?

The Strabane Area Plan 1986-2001 ("SAP") is the current statutory Local Development Plan (LDP) for this geographic location within the Council area. The SAP 1986-2001 comprises:

- Part 1- Introduction;
- Part 2- Plan Strategy;
- Part 3- Policy Framework;
- Part 4- Statement of Policies, Proposals and Maps- District Towns;
- Part 5- Statement of Policies, Proposals and Maps- Local Towns;
- Part 6- Statement of Policies, Proposals and Maps- Villages;
- Part 7- Statement of Policies, Proposals and Maps- Hamlets; and
- Part 8- Policy Statements and Maps- Rural Area.

The site is located within the 'green built' area, as designated by the SAP 1986-2001 and also within the Sperrin Area of Outstanding Natural Beauty. Given the vintage of the LDP, the retained policies have limited significance in material planning terms, as they are superseded by the policy provision of the retained Planning Policy Statements and the Strategic Planning Policy Statement, which post-date the publication of the SAP.

5.3 How any specific issues which might affect access to the Development for disabled people have been addressed AND Describe how features which ensure access for disabled people will be maintained?

It is not envisaged that there will be general public access to the Development, during the decommission/ construction phase or the operational phase of the Development. Provision of access for people with a disability to the Development, during the operational phase will be arranged with the windfarm operator as part of the standard wind farm operating protocols. Site compounds and substation buildings will be accessible for people with a disability.

5.4 State what, if consultation has been undertaken on issues relating to the access to the Development and what account has been taken of the outcome of any such consultation.

As this is a 'regionally significant' Development, there has been a range of pre-application community consultations undertaken in respect of the Development. The full details of the pre-application community consultations are detailed in the 'Pre-Application Community Consultation' report (PACC Report) submitted as part of this planning application. The details of the Development layout, including the turbine locations, internal access roads and site access arrangements were shared with the community and stakeholders as part of Pre-Application Community Consultation Event No.2. The Applicant and project team outlined the design drivers which resulted in the requirement for the seven

site accesses and the internal access roads serving the Development. There was no feedback in respect of the site access arrangements and as such there were no subsequent actions required.

5.5 Explain how any specific issues which might affect access to the Development have been addressed?

As previously noted, the seven site access junctions are required to negate potential impacts on sensitive ecological receptors. Noting this requirement, the project team undertook consultations with DfI Roads to discuss the approach to the site access arrangements, both in terms of the number of site accesses and the technical requirements of the junctions. The site junction arrangements have been designed in line with the requirements of DCAN 15, providing site visibility splays required to ensure road safety. The site visibility splays were also informed by speed survey data collected as part of the baseline traffic data.

Chapter 13 of the Environmental Statement concludes that subject to the identified mitigation measures, which will form part of an agreed 'Construction Traffic Management Plan' that the Development will not result in an adverse impact upon the existing traffic and transport environment. The use of the seven-site access during the decommissioning/ construction phases will not prejudice road safety or significantly inconvenience the flow of traffic.

5.5 Explain the Design Principles and concepts that have been applied to take into account environmental sustainability.

The Development is a renewable energy wind farm project with the capacity output of over 60MW. The principles of environmental sustainability are embedded in the Development, that seeks to:

- Contribute to regional and national renewable energy targets outlined in the Northern Ireland Energy Strategy- The Path to Net Zero[7].
- The electricity generated from the Development will contribute towards increased site electricity generation, reduce dependency on fossil fuels lowering carbon dioxide emissions and output, sustain existing development and construction jobs and create opportunities for new supply chain jobs.
- The Development, specifically the HEMP, proposes a range of blanket bog restoration and enhancement measures encompassing well-established techniques and the implementation of several additional pioneering approaches to blanket bog restoration within a further *c.* 17.809 ha of blanket bog habitat within the HMEP landholdings. This combined research approach utilising a combination of well-established and pioneering techniques is intended to provide a valuable resource for the success of future peatland restoration projects within Northern Ireland, the UK and Ireland while contributing towards the strategic objectives and targets set within the Peatland Strategy for Northern Ireland[8].

Section 5.0 of this Statement outlines they key technical drivers that informed the design and layout of the Development. The technical and design drivers included environment constraints, such as ecology, hydrology & hydrogeology and peat stability considerations. The Development has sought to minimise potential environmental impacts on the environment through the careful siting of turbines and associated infrastructure.

[7] Department of the Economy (2021) Northern Ireland Energy Strategy- The Path to Net Zero. Available at: https://www.economy-ni.gov.uk/publications/energy-strategy-path-net-zero-energy

[8] Northern Ireland Peatland Strategy 2021-2040 – Consultation Document. Available Online at: Northern Ireland Peatland Strategy 2021-2040. Consultation Document.pdf (daera-ni.gov.uk)

6.0 Conclusion

This D&AS has been prepared in accordance with the requirements of Planning (General Development Procedure) Order (Northern Ireland) 2015, Section 6, Design and Access Statements. In addition, the structure has been informed by Development Management Practice Note 12: Design and Access Statements, published by the Department of Environment (DOE) for Northern Ireland in April 2015.

This D&AS has established:

- The design principles and rationale that have been applied to the Development, including the various relevant environmental and technical criteria;
- The steps taken to appraise the context of the Site, and how the design of the various relevant environmental and technical criteria, and each design component;
- The relevant planning policies in respect of access; and
- That all relevant issues which might affect access to the Development have been addressed.

The D&AS has thus established that the Applicant can ably demonstrate an integrated approach that will deliver inclusive design, and address the full range of access requirements throughout the design process.