

Volume 2 - Introductory Chapters

Chapter 7

Description of the Proposed Development – Onshore

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7. Description of the Proposed Development – Onshore

North Irish Sea Array Windfarm Ltd (NISA, hereafter referred to as ‘the Developer’) has been considering the Request for Further Information (RFI) issued by An Bord Pleanála (now An Coimisiún Pleanála) as well as the third-party submissions received following public consultation. At An Coimisiún Pleanála’s behest, the Developer has also continued to consult with stakeholders in respect of the 2024 planning application throughout 2024-2026. The Developer has refined elements of the design to respond to the third-party submissions, the continued public and stakeholder consultation and the RFI (further details on the design refinements are provided in Appendix A5.1: Design Refinements). Amendments are therefore required to Chapter 7: Description of the Proposed Development – Onshore of the 2024 Environmental Impact Assessment Report (EIAR). Full details of consultation undertaken can be found in Appendix A1.2 in the Addendum to the EIAR.

For the purposes of clarity, this document shall be read in conjunction with the Chapter 7 submitted as part of the 2024 EIAR.

Any cross reference to a chapter, section, table, image, figure or appendix within this document is to another location within the Addendum to the EIAR unless explicitly stated otherwise. Any cross reference to anything included in the 2024 EIAR will be clearly labelled as such.

Text in bold is only used throughout this document to indicate where changes are required, and why they are required. Text in italics is text from a section of the 2024 EIAR which is deleted, or quotations from other documents (as explicitly stated). Replacement text is in normal font.

Tables and images which have been updated from the 2024 EIAR, or entirely new tables or images, have been included in the Addendum to the EIAR. These can be identified by the “A” prefix in the caption. Any changes within the updated table, in comparison to tables within the 2024 EIAR, are indicated by grey shading in the relevant cell, column or row, as necessary. The exception here is where a table has been replaced in its entirety.

The section relevant to Chapter 7 in the RFI is included below.

RFI Section	RFI	Relevance to Chapter
2 (a)	The Irish Coast Guard (IRCG), through the Department of Transport, has raised concerns in relation to the layout of the proposed development with respect to search-and-rescue (SAR) access. The applicant is requested to consult with the IRCG, in addressing these concerns, and provide further information and clarification on such matters.	The Developer participated in further consultation with the IRCG in 2025 and 2026. Following this consultation, a revised layout has been prepared for Project Option 1 and Project Option 2 which addresses the concerns raised by the IRCG. Further information on this consultation is included in Appendix A1.2.
10 (a)	Having regard to information submitted in the EIAR, the NPWS underwater noise guidelines (NPWS, 2014), the strict protections afforded to marine mammals under the Wildlife Act 1976, as amended, in addition to observations from prescribed bodies and observers, the Board requires a comprehensive suite of noise abatement measures to be proposed and assessed in addition to the existing mitigation measures referenced in the planning application documentation.	As a result of RFI Section 10 (a), the design of the wind turbine generator (WTG) and Offshore Substation Platform (OSP) foundations have changed from monopiles or jackets to suction bucket jacket (SBJ) foundations for the WTGs, and SBJ or jacket foundations with drilled pin piles for the OSP (which are detailed in Appendix A5.1 Design Refinements). The update to this chapter in relation to this, is provided in Section 7.1.

RFI Section	RFI	Relevance to Chapter
13 (e)	The applicant is requested to review the draft [Flemington] LAP (or adopted LAP, where updated at time of this observation) and update the submitted application documentation accordingly, having regard in particular to potential for visual impacts from the substation on the draft LAP lands, potential traffic implications given the proposed access to the LAP lands directly adjoins the proposed access to the substation, and potential noise implications from the substation on the adjoining residential zoned lands.	Minor amendments to the grid facility compounds have been made to reduce potential noise and visual impacts to future residents of the LAP. These are detailed in Section 7.4.
20 (c)	The applicant is requested to clarify what, if anything, will be visible above ground at the landfall site when the development is complete. The applicant is requested to elaborate on proposed groundworks and landscaping works in this area, with specific reference to the areas on proposed cable route map sheet 03 and 04 of 64.	Following completion of the horizontal directional drill and jointing activities, all cabling and jointing infrastructure will be below ground. The only visible structures at the landfall during the operational phase will be two manhole covers for each cable and cable marker posts, which will indicate the location of the underground cables. The update to this chapter in relation to this, is provided in Section 7.3.2.

7.1 Overview of the Proposed Development

The only change required to Section 7.1 in Chapter 7 of the 2024 EIAR is in relation to Image 7.1. The image, which presented wind turbine generators (WTGs) with monopiles, has been updated to show the WTGs with jacket substructures and suction bucket foundation and to remove the previous depiction of an ownership boundary, as this aspect is not relevant to the graphical illustration of the proposed development.

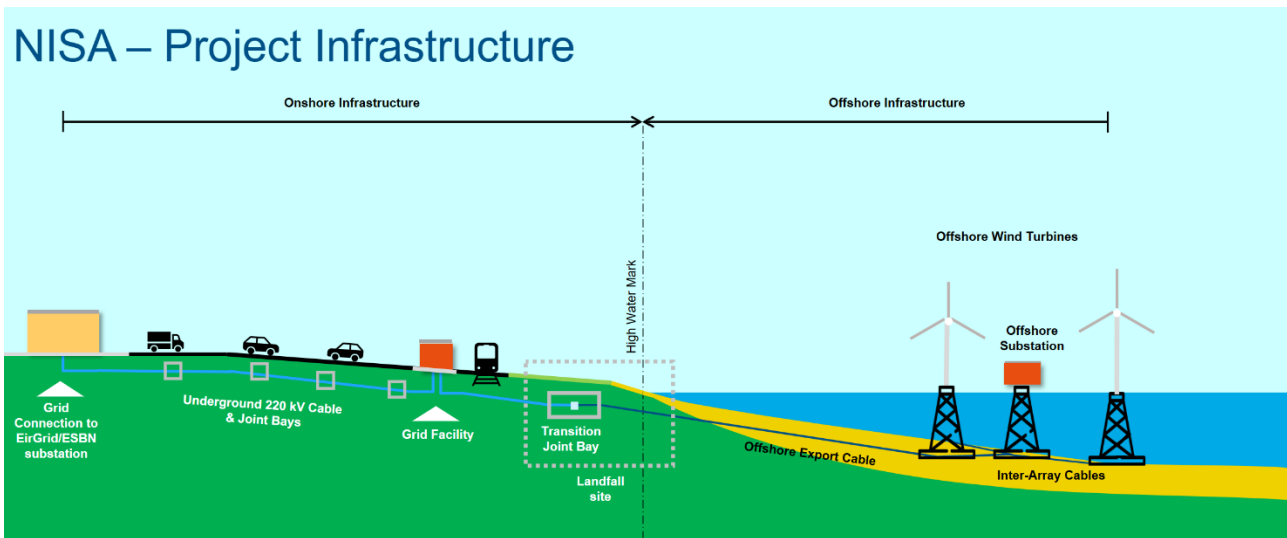


Image A7.1 Infrastructure of the proposed development – not to scale (Source: Arup) (Replacing Image 7.1 of the 2024 EIAR)

There are no other changes to this section. Refer to Section 7.1 in Chapter 7 of the 2024 EIAR.

7.2 Overview of Onshore Infrastructure

7.2.1 Introduction

There are no changes required to this section. Refer to Section 7.2.1 in Chapter 7 of the 2024 EIAR.

7.2.2 Location of onshore infrastructure within the proposed development boundary

There are no changes required to this section. Refer to Section 7.2.2 in Chapter 7 of the 2024 EIAR.

7.2.3 Land Requirements

7.2.3.1 Land Acquisition

There are no changes required to this section. Refer to Section 7.2.3.1 in Chapter 7 of the 2024 EIAR.

7.2.3.2 Cable Route Wayleaves and Construction Corridor

The only change required to this section is to correct a minor error in the 2024 EIAR. In Section 7.2.3.2 of Chapter 7 in the 2024 EIAR, Figure 7.3 was noted to include the cable centreline. This should instead note that the ‘proposed development boundary’ is shown on Figure 7.3 with the cable centreline being shown on the planning drawings.

Therefore, the following sentence from the Section 7.2.3.2 in Chapter 7 of the 2024 shall be deleted:

“The proposed cable centreline is shown on Figure 7.3, and in closer detail on the planning drawings (Appendix 7.1).”

And replaced with:

The proposed development boundary is shown on Figure 7.3, and together with the cable centreline is shown in closer detail on the planning drawings (Appendix 7.1).

There are no other changes required to this section. Refer to Section 7.2.3.2 in Chapter 7 of the 2024 EIAR.

7.3 Landfall Site

7.3.1 Landfall Location and Context

There are no changes required to this section. Refer to Section 7.3.1 in Chapter 7 of the 2024 EIAR.

7.3.2 Landfall Infrastructure Overview

The only change required to this section is to clarify what will be visible above ground at the landfall site as per Section 20 (c) of the RFI. However, there are no changes to any of the landfall infrastructure included in the 2024 EIAR. Section 20 (c) of the RFI states:

“The applicant is requested to clarify what, if anything, will be visible above ground at the landfall site when the development is complete. The applicant is requested to elaborate on proposed groundworks and landscaping works in this area, with specific reference to the areas on proposed cable route map sheet 03 and 04 of 64.”

Therefore, the following text shall be included at the end of Section 7.3.2 in Chapter 7 of the 2024 EIAR.

Following construction, the only visible above ground infrastructure will be the permanent access tracks (see Section 7.3.6), marker posts to indicate the location of the cables, and manhole covers associated with transition joint bays, joint bays, link boxes and communication chambers. There will be no other infrastructure visible above ground at the landfall site.

There are no further changes required to this section. Refer to Section 7.3.2 in Chapter 7 of the 2024 EIAR.

7.3.3 Transition Joint Bays

There are no changes required to this section. Refer to Section 7.3.3 in Chapter 7 of the 2024 EIAR.

7.3.4 Onshore Export Cables

There are no changes required to this section. Refer to Section 7.3.4 in Chapter 7 of the 2024 EIAR.

7.3.5 Dublin-Belfast Railway Crossing

There are no changes required to this section. Refer to Section 7.3.5 in Chapter 7 of the 2024 EIAR.

7.3.6 Permanent Access

Upon reviewing the third-party submissions received during the statutory consultation period, the Developer noted a concern from a number of residents in Balbriggan regarding the permanent access required for the landfall site along Bell's Lane. However, it is noted that this concern related to a different track to the south, also called Bell's Lane, which, it is confirmed, will not be used as part of the proposed development for permanent access.

The permanent access track for the landfall site is situated at the northern edge of the proposed development boundary at a junction with the R132. For the purposes of clarity, this lane is now referred to as the 'Landfall Access Road'. The junction with the R132 is indicated with a green star in Image A7.2.



Image A7.2 Location of the Landfall Access Road (Previously referred to as 'Bell's Lane')

Therefore, the following text from Section 7.3.6 of Chapter 7 of the 2024 EIAR shall be deleted:

“Permanent access to the landfall site for maintenance purposes will be from the junction of the R132 and Bell's Lane - where a bituminous bellmouth will be formed to facilitate safe vehicular access along Bell's Lane - then along Bell's Lane to a point just to the east of the Dublin to Belfast railway line.”

And replaced with the following text:

Permanent access to the landfall site for maintenance purposes will be from the junction of the R132 and the Landfall Access Road. The Landfall Access Road is located at the northern extent of the onshore development area at the junction of the R132 indicated on Image A7.2. A bituminous bellmouth will be formed here to facilitate safe vehicular access along the Landfall Access Road - then along the Landfall Access Road to a point just to the east of the Dublin to Belfast railway line.

There are no further changes required to this section. Refer to Section 7.3.6 of Chapter 7 of the 2024 EIAR.

7.4 Grid Facility

Following the submission of the consent application for the proposed development in June 2024, the Flemington Local Area Plan (LAP) was adopted in December 2024. The lands included within the LAP are adjacent to the grid facility boundaries along the southern extents.

Potential impacts from the grid facility on the Flemington LAP were raised in the RFI as noted in the introduction of this Chapter. As a result, the Developer has consulted with Fingal County Council (FCC) to ensure that potential impacts from the proposed development on the LAP, and in particular any future residents of this LAP, are mitigated as much as possible and to ensure any impacts are not significant.

Measures to further mitigate operational noise from the grid facility are now proposed. Two options are proposed, one of which includes the addition of a three-sided partial enclosure with a roof for the shunt reactors in both the Bremore substation compound and the compensation compound. Alternatively, lower-noise shunt reactors and shunt reactor coolers may be available which would also achieve the required noise levels. These have been included to mitigate operational noise impacts to potential noise sensitive receptors.

Additionally, the Landscape Plan for the grid facility has been updated to provide additional planting of native woodland along the southern boundary of the site. This is to ensure further screening is in place between the proposed grid facility and the LAP lands as per RFI Section 13 (e).

7.4.1 Grid Facility Site Location and Context

There are no changes required to this section. Refer to Section 7.4.1 in Chapter 7 of the 2024 EIAR.

7.4.2 Grid Facility Infrastructure

There are no changes required to this section. Refer to Section 7.4.2 in Chapter 7 of the 2024 EIAR.

7.4.2.1 Compensation substation

In accordance with RFI Section 13 (e), the Flemington LAP lands are also considered in terms of potential visual effects. Therefore, the substation colour scheme/finish takes into consideration the adoption of the Flemington LAP, to reflect a future scenario that is more urban edge than the current rural hinterland scenario and includes a higher architectural quality of finish.

Therefore, the following text from Section 7.4.2.1 shall be deleted:

“The dimensions of the building will be approximately 49m in length, 18.5m in width and 17m in height plus 3m lightning rods. The external finish of the 220kV GIS building within the compensation substation will be selected insulated metal wall cladding, or similar approved, in a matt dark grey/green colour as described in Volume 5, Chapter 29: Seascape, Landscape and Visual.”

And replaced with the following text:

The dimensions of the building will be approximately 49m in length, 18.5m in width and 17m in height plus 3m lightning rods. The external finish of the 220kV GIS building within the compensation substation will be a geometric use of dark, light and mid tone cement render, or similar approved by EirGrid and Fingal County Council, to break the vertical and horizontal massing of the structures and provide a high architectural quality of finish as described in Volume 5, Chapter 29: Seascape, Landscape and Visual.

The other changes required to this section is to include for possible acoustic enclosures around the shunt reactor and harmonic filters, as well as a correction to the height of the lightning arrestor masts. For clarity, they extend 3m above the parapets of both the compensation substation building and the Bremore substation building. Those situated on ground level extend approximately 17m above the proposed ground level

Therefore, the following text from Section 7.4.2.1 shall be deleted:

“The harmonic filters will be located outdoors within the compensation substation compound. The equipment will be surrounded by a c. 2m high fence to restrict access on one side with 3m high environmental screens on three sides to screen the components.”

And replaced with the following text:

The harmonic filters will be located outdoors within the compensation substation compound. The equipment will be surrounded by a c. 2m high fence to restrict access on one side with 3m high acoustic screens on four sides to screen the components.

The following text shall also be deleted:

“A shunt reactor will be provided to compensate the reactive power from the cables’ and ensure the proposed development will comply with the EirGrid Grid Code requirements. The shunt reactor will be located outdoors within the compensation substation compound.”

And replaced with the following text:

A shunt reactor will be provided to compensate the reactive power from the cables’ and ensure the proposed development will comply with the EirGrid Grid Code requirements. The shunt reactor will be located outdoors within the compensation substation compound within a three-sided partial acoustic enclosure with a roof. Alternatively, a lower-noise shunt reactor and shunt reactor cooler may be available, which will also achieve the noise limits.

The Developer also notes that an update to the height of the lightning arrestor masts is required to avoid any confusion. Therefore, the following text shall be deleted:

“Lightning arrestor masts, maximum 30m high, will be provided in the compound. This will ensure the external electrical equipment will be protected from lightning strikes throughout the lifetime of the proposed development.”

And replaced with the following text:

Lightning arrestor masts will be provided in the compound. The masts will extend approximately 3m above the parapets of the compensation substation and those situated on the ground will extend approximately 17m above the proposed ground level. This will ensure the external electrical equipment will be protected from lightning strikes throughout the lifetime of the proposed development.

There are no further changes required to this section. Refer to Section 7.4.2.1 of Chapter 7 in the 2024 EIAR.

7.4.2.2 Bremore substation

In accordance with RFI Section 13 (e), the substation colour scheme/finish takes into consideration the adoption of the Flemington LAP.

Therefore, the following text from Section 7.4.2.2 shall be deleted:

“The dimensions of the building will be approximately 61m in length, 18.5m in width and 17m in height plus 3m lightning rods. The external finish of the GIS building will be selected insulated metal wall cladding, or similar approved, in a matt dark grey/green colour as described in Chapter 29: Seascape, Landscape and Visual.”

And replaced with the following text:

The dimensions of the building will be approximately 61m in length, 18.5m in width and 17m in height plus 3m lightning rods. The external finish of the GIS building will be a geometric use of dark, light and mid tone cement render, or similar approved by EirGrid and Fingal County Council, to break the vertical and horizontal massing of the structures and provide a high architectural quality of finish as described in Volume 5, Chapter 29: Seascape, Landscape and Visual.

As with Section 7.4.2.1, the other changes required to this section are to include the potential acoustic enclosures around the shunt reactors. However, the Developer also seeks to correct an error noted in the 2024 EIAR, in Section 7.4.2.2 of Chapter 7 which indicated that a shunt reactor was included in

the Bremore Substation compound. This section provides a correction to clarify that there are two shunt reactors within the Bremore Substation compound as per Planning Drawing 281240_ARP_ONS_GF_DR_PL_1002 – Grid Facility Proposed Layout Sheet 2.

Therefore, the following text from Section 7.4.2.2 shall be deleted:

“A shunt reactor will be provided for each 220kV onshore cable to ensure the proposed development will comply with the EirGrid Functional Specifications. The shunt reactors will be located outdoors within the Bremore substation compound.”

And replaced with the following text:

Two shunt reactors (one for each 220kV cables within the Bremore substation compound) will be located outdoors within the Bremore substation compound within a three-sided partial acoustic enclosure with a roof provided for each shunt reactor. Alternatively, lower-noise shunt reactors and shunt reactor coolers may be available, which will also achieve the noise limits.

In addition, acoustic enclosures are now included around the diesel generator at Bremore substation in response to RFI Section 13 (e). Additional text regarding the duration of testing scenarios has also been included for clarity. Therefore, the following text shall also be deleted:

“The standby generator will likely be one 2MVA unit housed in a weatherproof enclosure and located upon a concrete bund. Since the latter is a secondary reserve, use will be limited to testing; circa one day per month.”

And replaced with the following text:

The standby generator will likely be one 2MVA unit housed in a weatherproof , acoustic enclosure and located upon a concrete bund. Since the latter is a secondary reserve, use will be limited to testing; circa one hour, one day per month.

There are no further changes required to this section. Refer to Section 7.4.2.2 of Chapter 7 in the 2024 EIAR.

7.4.3 Ancillary Grid Facility Infrastructure

There are no changes required to this section. Refer to Section 7.4.3 in Chapter 7 of the 2024 EIAR.

7.4.3.1 Utilities

The landscape plan (see Section 7.4.4) has been updated to include a filter drains along the southern boundary in place of a stormwater swale. This change was required to facilitate the additional native woodland planting within the grid facility site which was included to address the RFI (Section 13 (e)) which referenced the potential for visual impacts from the substation on the draft LAP lands. These changes are shown on the updated planning drawing 281240_MCR_ONS_GF_DR_YE_1010 Grid facility Landscape Plan included in Appendix A7.1

Therefore, the following text shall be deleted from Section 7.4.3.1 of Chapter 7 in the 2024 EIAR:

“Surface water runoff generated on site will be managed by a new dedicated surface water network. Runoff from impermeable yard areas and site roads will be collected by swales and filter drains before discharging to a series of buried carrier pipes”

And replaced with the following text:

Surface water runoff generated on site will be managed by a new dedicated surface water network. Runoff from impermeable yard areas and site roads will be collected by filter drains before discharging to a series of buried carrier pipes.

There are no further changes required to this section. Refer to Section 7.4.3.1 in Chapter 7 of the 2024 EIAR.

7.4.3.2 Security Fencing & CCTV

As part of the update to the landscape plan (see Section 7.4.4), the palisade fencing surrounding the perimeter of the grid facility site has been replaced with concrete post and rail fencing to further reduce any potential visual impacts to the future residents in the Flemington LAP.

Therefore, the following text shall be deleted from Section 7.4.3.2 in Chapter 7 of the 2024 EIAR:

“A 2.6m high security palisade fence will be installed around the perimeter of the grid facility compounds and the perimeter of overall site, with perimeter gates for vehicular and pedestrian access.”

And replaced with:

A 2.6m high security palisade fence will be installed around the perimeter of the grid facility compounds. A concrete post and rail fence will be built around the perimeter of the grid facility site boundary. Perimeter gates for vehicular and pedestrian access will also be provided.

There are no further changes required to this section. Refer to Section 7.4.3.2 in Chapter 7 of the 2024 EIAR.

7.4.3.3 External Lighting

There are no changes required to this section. Refer to Section 7.4.3.3 in Chapter 7 of the 2024 EIAR.

7.4.3.4 Permanent Access and Site Surfacing

There are no changes required to this section. Refer to Section 7.4.3.4 in Chapter 7 of the 2024 EIAR.

7.4.4 Landscaping

Following consultation with FCC, the landscape plan has been updated to provide additional screening for the grid facility. As a result, the native woodland planting is extended to cover the entirety of the southern boundary of the grid facility site to further screen the proposed development from the lands associated with the Flemington LAP.

Therefore, the following text shall be deleted from Section 7.4.4 of Chapter 7 of the 2024 EIAR:

“The grid facility will be screened by landscape planting around its perimeter in order to mitigate the visual impact of the new infrastructure: the proposed landscaping and planting is shown on the grid facility landscape plan (planning drawing 281240_MCR_ONS_GF_DR_YE_1010 Grid facility Landscape Plan in Appendix 7.1). The proposed perimeter planting measures around the substation compounds have been designed in conjunction with the project ecologists in order to maximise the benefit of both visual screening and to biodiversity. The planting consists of native woodland and hedgerow species which will be planted as a combination of small whips and advanced nursery stock (3-4m high trees) in order to allow for resilient and dense establishment.”

And replaced with the following text:

The grid facility will be screened by landscape planting around its perimeter in order to mitigate the visual impact of the new infrastructure: the proposed landscaping and planting is shown on the grid facility landscape plan (planning drawing 281240_MCR_ONS_GF_DR_YE_1010 Grid facility Landscape Plan in Appendix A7.1). The proposed perimeter planting measures around the substation compounds have been designed in conjunction with the project ecologists in order to maximise the benefit of both visual screening and to biodiversity. The planting consists of native woodland and hedgerow species which will be planted as a combination of small whips and advanced nursery stock (3-4m high trees) in order to allow for resilient and dense establishment.

There are no further changes required to this section. Refer to Section 7.4.4 in Chapter 7 of the 2024 EIAR.

7.4.5 Operation and Maintenance at Grid Facility

There are no changes required to this section. Refer to Section 7.4.5 in Chapter 7 of the 2024 EIAR.

7.5 Onshore Cable Route

7.5.1 Cable Route Location and Context

There are no changes required to this section. Refer to Section 7.5.1 in Chapter 7 of the 2024 EIAR.

7.5.2 Cable Route Description

There are no changes required to this section, or to the subsections 7.5.2.1 to 7.5.2.17. Refer to Section 7.5.2 in Chapter 7 of the 2024 EIAR.

7.5.3 Onshore Cable Technology

There are no changes required to this section or sub-sections 7.5.3.1 to 7.5.3.5. Refer to Section 7.5.3 in Chapter 7 of the 2024 EIAR.

7.5.4 Cable Crossings

There are no changes required to this section or sub-sections 7.5.4.1 to 7.5.4.5. Refer to Section 7.5.4 in Chapter 7 of the 2024 EIAR.

7.5.5 Connection to the existing Substation at Belcamp

There are no changes required to this section. Refer to Section 7.5.5 in Chapter 7 of the 2024 EIAR.

7.6 Operation and Maintenance

There are no changes required to this section or sub-sections 7.6.1 to 7.6.4. Refer to Section 7.6 in Chapter 7 of the 2024 EIAR.

7.7 Decommissioning

There is no change required to this section. Refer to Section 7.7 of Chapter 7 in the 2024 EIAR.

7.8 References

There is no change required to this section. Refer to Section 7.8 of Chapter 7 in the 2024 EIAR.