Addendum to the Environmental Impact Assessment Report

NISA

North Irish Sea Array

Volume 5 - Wider Schemes Chapters

Chapter 30
Noise and Vibration

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30. Noise and Vibration

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 30: Noise and Vibration 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 30 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 an 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 sections relevant to Chapter 30 in the RFI are included below.

RFI Section	RFI	Relevance to Chapter
1 (b)	The scientific information provided as part of the planning application documentation should be based on up-to-date survey reports and data. Accordingly, the applicant is requested to confirm/provide justification/verification that the information submitted in support of the planning application remains relevant and appropriate at the point of submitting further information or to update same as required.	The timeframes associated with the RFI have necessitated a review of the datasets previously used in the 2024 EIAR to ensure any necessary updates to the baseline environment are captured. See Section 30.2.
5	The Marine Institute in their observation raises concerns in relation to the methodology applied in the submitted cumulative effects assessment and the manner in which the information is presented, noting the lack of a standard Irish methodology in relation to CEA. The applicant is advised that guidance exists in the UK, namely Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment - GOV.UK, September 2024 (NSIP, 2024). The applicant is requested to revise the submitted cumulative assessment in line with NSIP (2024) and submit a standalone document to clearly demonstrate the CEA conclusions. In the interests of consistency and transparency, the applicant is requested to complete the assessment in accordance with the templates provided in the NSIP (2024), namely "Appendix 1: Matrix 1 – Identification of 'other development' for CEA" and "Appendix 2: Matrix 1 – Assessment matrix" (see attached Appendix B)…	A revised CEA, which considers the methodology and template provided in the Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment – GOV.UK, September 2024 (NSIP, 2024), has been prepared. The revised CEA is provided in Chapter 38 Cumulative and Inter-Related Effects, Appendix 38.1 – Onshore Long List and Appendix A38.2 Offshore Long List. The update to this chapter in relation to this, is provided in Section 30.9.

RFI Section	RFI	Relevance to Chapter
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…	The Developer has proposed a refinement to the foundation types used for the wind turbine generators (WTGs). Instead of either monopiles or jackets, only jackets will be used. Additionally, instead of installation with pin piles the jackets will be installed with suction buckets. This has resulted in the removal of piling from the construction strategy of the offshore infrastructure (see Chapter 8 for further details). Therefore, the assessment of noise from driven piles is no longer relevant. See Sections 30.2, 30.3 and 30.5.
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.	Updated baseline monitoring and operational noise assessment for future residential receptors within the lands associated with the Flemington Local Area Plan (LAP) has been undertaken. Additional mitigation to reduce the likelihood of potential effects during operation have also been included in response to RFI Section 13 (e). See Sections 30.2, 30.3 and 30.5.
19 (a)	Having regard to the anticipated traffic disruption, the applicant is requested to consider, in consultation with Fingal County Council, mitigation measures to address the predicted length of road closures, including consideration of lane closures with significant traffic management measures, nighttime road closures and measures to reduce road closure timelines such as increased resources…	Following consultation with Fingal County Council (FCC), the Developer has included for potential 24 hour working at select locations along the onshore cable route, subject to further agreement with relevant stakeholders. An assessment of potential construction phase effects arising from this additional night time working has been undertaken. See Sections 30.5 and 30.6.
19 (c)	The applicant is requested to review section 24.3 of Chapter 24 in relation to Baseline Environment to ensure any road network upgrade works, such as the installation of active travel measures/cycle paths at Corduff NS and along the R132 (The Five Roads to Corduff), and at any other location, are reflected accurately in the baseline and subsequent assessment.	Updated traffic count surveys were undertaken in 2025. The results of these surveys are presented in Chapter 24. The updated assessment of construction traffic noise is provided in Section 30.5.
21 (a)	The applicant is requested to submit further details in relation to the applied scope and methodology in relation to operational airborne noise from the proposed WTGs. The applicant is also requested to further consider the issue of mitigation where relevant.	Further detail in relation to the applied scope and methodology of the operational airborne noise assessment for wind turbine generator (WTG) has been provided in Sections 30.2 and 30.5.
21 (b)	The applicant is requested to address observer concerns with regard to impact of airborne noise from WTGs, specifically in relation to verifying the source of the assumed SPL of the WTGs, details in relation to cut-in wind speed, cut-out wind speed and sound power level data.	Further modelling has been undertaken of airborne noise during the operational phase of the proposed development in Sections 30.2 and 30.5

30.1 Introduction

There are no changes to this section. Refer to Section 30.1 of Chapter 30 of the 2024 EIAR.

30.2 Methodology

There are no changes to the introductory text of this section. Refer to Section 30.2 of Chapter 30 of the 2024 EIAR.

30.2.1 Introduction

There are no changes to this section. Refer to Section 30.2.1 of Chapter 30 of the 2024 EIAR.

30.2.2 Study Area

Due to the removal of piling from the construction strategy of the offshore infrastructure (refer to Chapter 8 for further information), the following text from Section 30.2.2 of Chapter 30 of the 2024 EIAR shall be deleted:

"*Potential effects from the construction and operation of offshore infrastructure (specifically the foundation piling for, and the operation of, offshore wind turbine generators (WTG)) on noise-sensitive receptors close to the shoreline are also assessed. For the assessment of these potential effects, the closest noise-sensitive receptors to the WTG – those on Red Island, Skerries, are considered."*

And replaced with the following text:

Potential effects from the construction and operation of offshore infrastructure (specifically ancillary works for the suction bucket jacket (SBJ) foundations such as bolting, welding, etc., and operation of offshore wind turbine generators (WTG)) on noise sensitive receptors close to the shoreline are also assessed. For the assessment of these potential effects, the closest noise sensitive receptors to the WTG – those on Red Island, Skerries – are considered.

There are no further changes to this section. Refer to Section 30.2.2 of Chapter 30 of the 2024 EIAR.

30.2.3 Relevant Guidance and Policy

Additional EirGrid specifications are included in the assessment due to the potential impacts associated with the Flemington LAP (see Section 30.5.2 and 30.5.7) This section shall therefore be updated to include the EirGrid Requirements *110/220/400 kV Substation General Requirements – Ref:XDS-GFS-00-001-R4*. The inclusion of these requirements is to ensure compliance with RFI Section 13 (e) which raises the need to assess potential noise impacts of the grid facility on future Flemington LAP (which had not been adopted at the time of submission) properties.

Therefore, this document has been included as an updated to this section as it places more stringent criteria on the operational noise assessment of the grid facility than that outlined in NG4 and used in Chapter 30 of the 2024 EIAR, applying the same noise thresholds at the property boundary as opposed to the property dwelling. Furthermore, this guidance also applies the same noise thresholds to proposed residential properties as well as existing premises. As such, the operational noise assessment presented in this addendum will also consider the impact of the grid facility on potential residences of the Flemington LAP.

Additionally, further background information has been provided in Section 30.5.7.1 to comply with RFI Section 21 (a). Therefore, two additional guidance sources have been included in Table A30.1.

Finally, in accordance with RFI Section 1 (b), a review of relevant guidance and policy documentation was undertaken.

As a result of the above, Table 30.1 of Chapter 30 of the 2024 EIAR is to be replaced with Table A30.1 below, where the relevant changes have been highlighted in grey.

Table A30.1 Relevant guidance and policy (replaces Table 30.1 in Chapter 30 of the 2024 EIAR)

Name	Publisher	Date	Relevance to assessment
EirGrid - 110/220/400 kV Substation General Requirements - XDS-GFS-00-001-R4	EirGrid	2019	Defines upper noise level thresholds to be applied to the operational noise assessment of the grid facility.
Guidance Note for Noise Assessment of Wind Turbine Operations at EPA Licensed Sites (NG3)	Environmental Protection Agency (EPA)	2011	This guidance has been included in reference to RFI Section 21 (a) to further explain the assessment associated with airborne noise from the WTGs.

Name	Publisher	Date	Relevance to assessment
Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise	Institute of Acoustics	2013	This guidance has been included in reference to RFI Section 21 (a) to further explain the assessment associated with airborne noise from the WTGs.
Guidance Note for Noise: Licence Applications, Survey, and Assessments in Relation to Scheduled Activities (NG4)	EPA Office of Environmental Enforcement	2016	Although activities related to the proposed development do not fall within the NG4 schedule of activities, the noise limit criteria are considered as relevant upper thresholds for EIAR operational noise assessments.
Guidelines on the information to be contained in Environmental Impact Assessment Reports	Environmental Protection Agency	2022	Defines the magnitudes of effect to be used in assessments
Guidelines for Environmental Noise Impact Assessment	Institute of Environmental Management and Assessment	2014	Guidelines address the key principles of noise impact assessment and are applicable to all development proposals where noise effects are likely to occur.
Calculation of Road Traffic Noise (CoRTN)	The Department of Transport	1988	Describes procedures for assessing traffic noise
BS 7445-1:2003 Description and environment of environmental noise – Part 1	British Standards Institute	2003	Defines the parameters, procedures, and instrumentation requirements for noise measurement and analysis.
BS4142:2014+A1:2019 Methods for Rating Industrial Sound Affecting Mixed Residential and Industrial Areas	British Standards Institute	2019	The method used for determining the 'rating level' of a new sound source and the 'background level' at a receptor position can be used to assess the impact of noise on a receptor.
BS 5228:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites (Parts 1 and 2)	British Standards Institute	2014	Provides best practice for noise and vibration control from construction and open sites to nearby noise-sensitive receptors. Part 1 includes sound power levels of common construction equipment and Part 2 includes guidance to the human response to vibration and a library of measured vibration source levels.
TRL Report 429 Groundborne Vibration Caused by Mechanised Construction Works	Transport Research Laboratory	2000	Provides methods for predicting the environmental impact of vibration caused by the operation of mechanised construction plant.
ISO 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors - Part 2: General method of calculation	International Organization for Standardization	1996	Used for noise assessment calculations.
ISO 1996-1:2016 Acoustics - Description, measurement and assessment of environmental noise. Part 1: Basic quantities and assessment procedures	International Organization for Standardization	2016	Used to inform noise measurement methodology

Name	Publisher	Date	Relevance to assessment
ISO 1996-2:2017 - Description, measurement and assessment of environmental noise – Part 2: Determination of sound pressure levels	International Organization for Standardization	2017	Used to inform noise measurement methodology
TII Guidelines for the Treatment of Noise and Vibration in National Road Schemes	Transport Infrastructure Ireland	2004	Used to inform noise assessment methodology, specifically for traffic noise calculations
Good Practice Guide for the Treatment of Noise during the Planning of National Road Schemes	Transport Infrastructure Ireland	2014	Used to inform noise assessment methodology, specifically for traffic noise calculations
WHO Environmental Noise Guidelines for the European Region	World Health Organization	2018	Used to inform noise assessment methodology
IOA ProPG: Planning and Noise. Professional Practice Guidance on Planning and Noise. New Residential Development	Institute of Acoustics	2017	Used to inform noise assessment methodology
Design Manual for Roads and Bridges (DMRB): LA111 Noise and vibration	National Highways, England	2020	Used to inform noise assessment methodology
ISO 9613-2: Acoustics – Attenuation of sound during propagation outdoors – Part 2 – General method of calculation	International Standards Organisation	1996	Used to inform noise assessment methodology
ETSU R-97: The assessment and rating of noise from wind farm	UK Department for Trade & Industry	1997	Used to inform noise assessment methodology
BEK nr 135 of 07/02/2019[1]	Danish Ministry of Environment and Gender Equality	2019	Used to assess noise from wind turbine generators to the nearest sensitive receptors
ISO 389-7:2005 Acoustics – Reference zero for the calibration of audiometric equipment, Part 7: Reference threshold of hearing under free-field and diffuse-field listening conditions	International Organization for Standardization	2005	Used to assess impact of low frequency noise

There are no other changes to this section. Refer to Section 30.2.3 of Chapter 30 of the 2024 EIAR.

[1] This has been updated to BEK nr 995 of 26/08/2024 but the 2019 version is still used in the modelling software SoundPLAN noise (version 9.1) and considered appropriate for the assessment.

30.2.4 Baseline Noise Survey

To ensure compliance with RFI Section 13 (e), which raises the need to assess potential noise impacts of the grid facility on future Flemington LAP properties, further noise monitoring at the LAP has been carried out. In addition, following stakeholder consultation, further details of the 2022 baseline monitoring have been included in this section.

To clarify, Section 30.2.4 shall be deleted in its entirety and replaced with the following:

In order to characterise the existing acoustic environment at noise-sensitive receptors within the study area, noise monitoring has been undertaken. Noise surveys have been undertaken following the guidance in BS7445-1 and BS4142.

Attended, short-term noise measurements were undertaken between 9 May and 11 May 2022. Taking into account the extent and nature of construction works to be employed, the location of sensitive fauna, and the proximity of noise-sensitive receptors to permanent noise sources, noise monitoring was undertaken in two main areas to inform the construction and operational noise assessments. The two areas are as follows:

- The area surrounding the landfall/grid facility area, with measurements representative of nearby noise-sensitive receptors; and
- The area adjacent to the Malahide Estuary (designated as SPA/SAC), providing measurements representative of the local residential and ecological receptors.

Weather during the attended measurements May 2022 was dry, with wind speed gusts between 4 and 7 m/s, averaging between 1 and 2 m/s.

Additional, long-term noise measurements were undertaken between 26 March and 2 April 2026 in the south corner of the grid facility, based on the proximity of Flemington Local Area Plan (LAP) to the south of the grid facility site.

Weather during the unattended monitoring in March/April 2026 varied from dry to rainy, with average wind speeds of between 2 and 15 m/s. Measurements with adverse weather conditions (i.e., periods of rain or high winds) have been excluded from the assessment.

For noise-sensitive receptors alongside the onshore cable route and for receptors considered in the assessment of noise from the offshore infrastructure, no noise surveys were undertaken as the assessment of construction noise adopts a precautionary assumption for baseline noise levels – that is, an assumption of low existing noise levels – and thus surveyed noise levels were not required.

Further details of the noise-sensitive receptors and representative noise measurements can be found in Section 30.3.2.

A list of the noise monitoring (NM) locations is presented in Table A30.2, and the locations presented in Image A30.1 and Image A30.2

Table A30.2 Noise monitoring locations

Location Number	Description	Coordinates, [ITM Easting, Northing] (m)
NM1	In field in line with the back of adjacent residential receptor	718971, 765006
NM2	Next to local road behind adjacent residential receptor	718869, 765262
NM3	Adjacent to R132 directly outside residential receptor	718833, 765220
NM4	Adjacent to local road and representative of residential receptors further from main road (R132)	718966, 765340
NM5	Adjacent to R132 in line with façade of residential receptor	719056, 765011
NM6	Adjacent to Malahide Estuary, close to the M1	719411, 747454
NM7	Adjacent to Malahide Estuary, close to Swords Sailing and Boating Club	720684, 746960
NM8	South portion of grid facility site adjacent to Flemington LAP	718777, 764813

Image A30.1 Noise monitoring (NM) locations north of Balbriggan around the landfall and grid facility locations with the onshore development area shown in red

Image A30.2 Malahide Estuary noise monitoring (NM) locations with the onshore development area shown in red

Noise measurements were undertaken with the equipment listed in Table A30.3.

Table A30.3 Measurement equipment details

Equipment Manufacturer	Equipment Type	Serial Number	Calibration Date
Bruel & Kjaer	2250 Sound Level Meter	3028791	9-11-2021
Bruel & Kjaer	2250 Light Sound Level Meter	2620746	10-06-2021
Bruel & Kjaer	4231 Calibrator	3011816	9-11-2021
Bruel & Kjaer	2250 South Level Meter	2567756	12-12-2025
Bruel & Kjaer	4952_90 Outdoor microphone kit	2550919	12-12-2025

The sound level meters logged environmental noise measurement parameters including $L_{Aeq,T}$, L_{A90}, and L_{A10} (definitions of these parameters are included in the Glossary of Terms). The parameters and results of the baseline noise measurements are presented in Section 30.3.

Noise surveys were undertaken by Mhairi Riddet and Zak Henderson of Arup, and David Courtney and Alp Tekogul of Enfonic. Mhairi Riddet is a full member of the Institute of Acoustics and has experience with similar environmental surveys. Zak Henderson is an environmental scientist with experience in noise measurements. David Courtney is a full member of the Institute of Acoustics, and Alp Tekogul is a technician member of the Institute of Acoustics, both with experience in similar environmental surveys.

30.2.5 Assessment Methodology

30.2.5.1 Construction

There are no changes to this section. Refer to Section 30.2.5.1 of Chapter 30 of the 2024 EIAR.

30.2.5.2 Construction Noise

There are no changes to this section. Refer to Section 30.2.5.2 of Chapter 30 of the 2024 EIAR.

30.2.5.3 Construction Vibration

There are no changes to this section. Refer to Section 30.2.5.3 of Chapter 30 of the 2024 EIAR.

30.2.5.4 Noise from Offshore Turbine Construction

Due to the removal of piling from the construction strategy of the offshore infrastructure (refer to Chapter 8 for further information), the following text from Section 30.2.5.4 of Chapter 30 of the 2024 EIAR shall be deleted:

"An assessment of the impacts of noise from offshore piling activities on onshore residential receptors has been carried out using the outdoor noise propagation method in ISO 9613-2, which provides a calculation method suitable for such predictions. The method considers geometric spreading, atmospheric (air) absorption and the effect of hard ground/water on noise propagation.

The predicted noise levels have been assessed against the construction noise criteria set out in 30.2.5.2."

And replaced with:

An assessment of the impacts of noise from offshore construction activities for the Wind Turbine Generators (WTG) and Offshore Substation Platform (OSP) to onshore residential receptors has been carried out using the outdoor noise propagation method in ISO 9613-2, which provides a calculation method suitable for such predictions. The method considers geometric spreading, atmospheric (air) absorption, and the effect of hard ground/water on noise propagation.

The predicted noise levels have been assessed against the construction noise criteria set out in Section 30.2.5.2.

There are no further changes to this section. Refer to Section 30.2.5.4 of Chapter 30 of the 2024 EIAR.

30.2.5.5 Construction Traffic Noise.

There are no changes to this section. Refer to Section 30.2.5.5 of Chapter 30 of the 2024 EIAR.

30.2.5.6 Operational Noise from grid facility

As per the update to Section 30.2.3, additional EirGrid specifications are included due to the assessment of potential impacts on the Flemington LAP (see Section 30.5.2 and 30.5.7). This section shall therefore be updated to include the EirGrid Requirements *110/220/400 kV Substation General Requirements – Ref:XDS-GFS-00-001-R4*. The inclusion of these requirements is to ensure compliance with RFI Section 13 (e) which raises the need to assess potential noise impacts of the grid facility on future Flemington LAP properties.

As such, the following paragraph shall be deleted:

"Reference has been made in Table 30.10 to the EPA's Guidance Note for Noise: Licence Applications, Survey, and Assessments in Relation to Scheduled Activities, (NG4) and BS4142:2014+A1:2019 Methods for Rating Industrial Sound Affecting Mixed Residential and Industrial Areas, to assess operational noise from the grid facility to nearby residential receptors."

And replaced with the following:

Reference has been made in Table 30.10 to the EPA's *Guidance Note for Noise: Licence Applications, Survey, and Assessments in Relation to Scheduled Activities,* (NG4) and BS4142:2014+A1:2019 *Methods for Rating Industrial Sound Affecting Mixed Residential and Industrial Areas*, to assess operational noise from the grid facility to the property boundary of nearby residential receptors (in accordance with EirGrid's *110/220/400 kV Substation General Requirements – Ref:XDS-GFS-00-001-R4*).

The following paragraph shall also be deleted:

"The grid facility operational noise levels have been predicted using the 3-dimensional computer modelling software SoundPLAN (version 8.2) at the nearest noise sensitive receptors, which are most likely to be affected by operational noise. Operational noise levels at more distant receptors will be substantially lower such that no negative effect will occur. Details of the noise modelling assumptions and source data are presented in Section 30.5.7.3."

And replaced with the following:

The grid facility operational noise levels have been predicted using the 3-dimensional computer modelling software SoundPLANnoise (version 9.1) at the property boundary of the nearest noise sensitive receptors, which are most likely to be affected by operational noise. Operational noise levels at more distant receptors will be substantially lower such that no negative effect will occur. Details of the noise modelling assumptions and source data are presented in Section 30.5.7.3.

There are no further changes to this section. Refer to Section 30.2.5.6 of Chapter 30 of the 2024 EIAR.

30.2.5.7 Operational noise from offshore wind turbines

In response to RFI Section 21 (a) and 21 (b), Section 30.2.5.7 is updated to provide further detailed and site-specific modelling in relation to operational airborne noise from the proposed WTGs.

Therefore, the following text shall be deleted:

"*An assessment of operational noise from the offshore wind turbines to onshore residential receptors has been carried out using the outdoor noise propagation method ISO 9613-2, which provides a calculation method suitable for such predictions. The method considers geometric spreading, atmospheric (air) absorption and the effect of hard ground/water on noise propagation.*

The calculated noise levels have been assessed against both the thresholds set out in NG4 and against the thresholds set out in ETSU R-97."

And replaced with:

The operational noise levels of the offshore Wind Turbine Generators (WTG) have been predicted using the 3-dimensional computer modelling software SoundPLANnoise (version 9.1) at the nearest onshore receptors. Operational noise at more distant receptors will be lower than the noise at the closest receptor such that no negative effect will occur.

The assessment has been undertaken based on the methodology laid out in *BEK nr 135 of 07/02/2019, Executive Order on Noise from Wind Turbines*, published by the Danish Ministry of the Environment and Gender Equality. The method in BEK nr 135 includes a correction for multiple reflections, which accounts for increased received downwind noise levels at long distances over water.

The calculated noise levels have been assessed against both the thresholds set in NG4 and ETSU R-97.

Further details regarding the assessment methodology, including sound power levels of WTGs, can be found in Section 30.5.7.1.

There are no further changes to this section. Refer to Section 30.2.5.7 of Chapter 30 of the 2024 EIAR.

30.3 Baseline Environment

30.3.1 Baseline Noise Monitoring Results

To ensure compliance with RFI Section 13 (e) (assessment of potential noise impacts of the grid facility on future Flemington LAP properties) further baseline noise monitoring at the LAP has been carried out and more details of the previous monitoring have been included.

To clarify Section 30.3.1 shall be deleted in its entirety and replaced with the following:

The current baseline noise environment at receptor locations within the surrounding area, based on measured noise data is presented in this section.

Table A30.4 presents a summary of the noise monitoring results from the monitoring. Noise monitoring locations are presented above in Image A30.1 and Image A30.2.

Table A30.4 Baseline noise monitoring results (replaces Table 30.11 in Chapter 30 of the 2024 EIAR)

Location number	Day time 07:00 – 19:00		Evening time 19:00 – 23:00		Night time 23:00 – 07:00	
	$L_{Aeq,30min}$ dB	L_{A90}, dB	$L_{Aeq,30min}$ dB	L_{A90}, dB	$L_{Aeq,15min}$ dB	L_{A90}, dB
NM1	50 – 51	44 – 45	47	43	49	43
NM2	54 – 55	46 – 47	55	46	52	43
NM3	72	46 – 49	72	46	68	46
NM4	50 – 51	43 – 44	54	44	55	45
NM5	60 – 61	47 – 48	60	45	55	43
NM6	66	63	61	57	67	63
NM7	56 – 57	50 – 51	56	47	54	49
NM8*	45	41	42	40	36	34

*Noise levels at NM8 have been determined based on the most commonly occurring noise level during the time period, i.e., the modal average of the data.

Full details of the noise measurements can be found in Appendix A30.1.

30.3.2 Noise Sensitive Receptors

To comply with RFI 13 (e), additional noise sensitive receptors have been included to represent proposed residential properties within the Flemington LAP and all receptors are to be assessed at the property boundary. As such, the following section shall be deleted including Image 30.3 and Table 30.12 of Chapter 30 of the 2024 EIAR:

"*For the area around the grid facility and landfall site, receptors representative of the residences nearest to the proposed development have been defined. These receptors (NSR) are displayed in image 30.4 below and listed in Table 30.12."*

And replaced with the following:

For the area around the grid facility and landfall site, receptors representative of the residences nearest to the proposed development have been defined. These receptors (NSR) are displayed in Image A30.3 below and listed in Table A30.5.

Image A30.3 Noise sensitive receptors (NSRs) in proximity to grid facility and landfall site and the onshore development area shown in red, with approximate footprint of the grid facility shown in dark blue (replaces Table 30.12 in Chapter 30 of the 2024 EIAR)

Table A30.5 Noise sensitive receptors (NSR) in proximity to the grid facility and landfall site (replaces Table 30.12 of the 2024 EIAR)

Receptor no.	Address	Corresponding noise measurement (NM) location
LAP1	Flemington Local Area Plan	NM2
LAP2	Flemington Local Area Plan	NM2

Receptor no.	Address	Corresponding noise measurement (NM) location
LAP3	Flemington Local Area Plan	NM2
LAP4	Flemington Local Area Plan	NM2
NSR1	Sandfield, Bremore, Balbriggan, Co. Dublin	NM4
NSR2	Bremore, Co. Dublin	NM3
NSR3	Bremore, Co. Dublin	NM3
NSR4	Bremore, Co. Dublin	NM3
NSR5	Bremore, Co. Dublin	NM5
NSR6	Molyneaux, Bremore, Balbriggan, Co. Dublin	NM1
NSR7	1A Bremore Cottages, Bremore, Balbriggan, Co. Dublin	NM3
NSR8	Bremore, Co. Dublin	NM2

There are no other changes required to this section. Refer to Section 30.3.2 of Chapter 30 of the 2024 EIAR.

30.4 Characteristics of the Proposed Development

30.4.1 Onshore Infrastructure

There are no changes to this section or to Section 30.4.1.1 to Section 30.4.1.3. Refer to Section 30.4.1 of Chapter 30 of the 2024 EIAR.

30.4.2 Offshore infrastructure

Due to the removal of piling from the construction strategy of the offshore infrastructure (refer to Chapter 8 for further information), the following text from Section 30.4.2 of Chapter 30 of the 2024 EIAR shall be deleted:

"The offshore infrastructure will include between 35 and 49 Wind Turbine Generators (WTGs) on either monopole or jacket foundations, an offshore substation platform (OSP) also on either monopole or jacket foundations, inter-array cables and export cables. The closest WTG will be located approximately 12km from the nearest onshore residential community, namely the houses on the Red Island headland in Skerries.

The WTG and OSP foundations will be installed using either drilling or percussive piling techniques, with WTG foundation installation lasting approximately eight months."

And replaced with:

The offshore infrastructure will include between 35 and 49 Wind Turbine Generators (WTGs) on SBJ foundations, an offshore substation platform (OSP) on either SBJ foundations or jacket foundations with drilled pin piles, inter-array cables, and export cables. The closest WTG will be located approximately 12km from the nearest onshore residential community, namely the houses on the Red Island headland in Skerries.

The WTG and OSP foundations will be installed using specialised SBJ foundation installation techniques or drilled pin piles (for the OSP only) with WTG foundation installation lasting approximately eighteen months.

There are no other changes required to this section. Refer to Section 30.4.2 of Chapter 30 of the 2024 EIAR.

30.4.2.1 Project options

Due to the removal of piling from the construction strategy of the offshore infrastructure (refer to Chapter 8 for further information), the following text from Section 30.4.2.1 of Chapter 30 of the 2024 EIAR shall be deleted:

"The parameters of the two project options that are relevant to the assessment presented in this chapter include piling of foundations during construction and operation of WTG during the operational phase."

And replaced with:

The parameters of the two project options that are relevant to the assessment presented in this chapter include foundation installation during construction, and operation of WTG during the operational phase.

There are no other changes required to this section. Refer to Section 30.4.2.1 of Chapter 30 of the 2024 EIAR.

30.5 Potential Effects

There are no changes to the introductory text of this section. Refer to Section 30.5 of Chapter 30 of the 2024 EIAR.

30.5.1 Do-Nothing Scenario

There are no changes to this section. Refer to Section 30.5.1 of Chapter 30 of the 2024 EIAR.

30.5.2 Construction Phase Noise

30.5.2.1 Offshore Construction Noise

As noted in Section 8.3.4.1 of Chapter 8, driven piles as part of the installation of the offshore WTG foundations are no longer proposed in the construction phase of the proposed development. Therefore, the assessment of noise from driven piles is no longer relevant and the following text shall be deleted from Section 30.5.2.1 of Chapter 30 of the 2024 EIAR:

"Offshore piling works, as part of the installation of the offshore WTG foundations, may take place at any time of the day. Receptors are most sensitive to noise during the night-time and so an assessment of piling noise to onshore receptors has been undertaken during this time period.

A calculation of noise levels from offshore WTG piling activities under metrological conditions favourable to noise propagation has been carried out. The calculation has been carried out for the residential receptors closest to the array area, namely the houses on the Red Island headland in Skerries: the location of the town of Skerries relative to the proposed development is shown on Volume 7, Figure 1.1. The distance from these houses to the nearest proposed turbine location is 12km. The WTG locations are shown on Figures 6.1 and 6.2.

The assessment of offshore piling noise focussed on the closest WTG to the mainland (Red Island headland) as this has the potential to result in the greatest magnitude of impact to onshore receptors. For Project Option 1 the closest WTG is 12km to the mainland at Skerries Island, at the nearest point within the limit of deviation[2] in the WTG layout. For Project Option 2 the closest WTG is 13km to Skerries Island incorporating the limit of deviation. Therefore, a distance of 12km was assessed in relation to airborne noise from piling of foundations which is representative of the maximum effect of both project options.

A piling source level of 139dBA,$L_{Aeq,1s}$ @1m, representative of the loudest 1-second noise level during monopile piling at full hammer energy has been assumed. This source level was derived using the mean of two source levels.

[2] A 500m limit of deviation from the WTG locations in the layouts for Project Option 1 and 2 is included in the assessment is applied to each individual WTG location and OSP location. The limit of deviation has been assessed within this EIAR.

Firstly, a source level of 139dBA for a 5000kJ hammer[3], scaled up to the proposed hammer energy of 5500kJ (the maximum hammer energy of the proposed development), giving a level of 139.4dBA and secondly, a value of 127dBA for a 375kJ hammer[4], scaled up to the proposed hammer energy of 5500kJ, giving a level of 138.6dBA. The mean of these two values (139dBA) has been used in the calculations.

Corrections for geometrical spreading, ground correction and atmospheric (air) absorption were applied in line with the guidance in ISO9613 over the propagation distance of 12km (12km being the closest distance from onshore residential properties to the array area). The ISO9613 standard gives predictions assuming favourable wind conditions to sound propagation i.e. downwind propagation. The ground conditions are assumed to be hard ground (representative of water) and the source and receiver heights are assumed to be 20m and 2m respectively.

The calculation assumes that one complete pile is driven in one night-time (23:00-07:00), comprising 10,548 piling strikes (the number of piling strikes required to install one monopile foundation). Details of the piling construction methodology and assumptions are included in the Offshore Construction Chapter.

The predicted night-time noise level at the nearest receptor on Red Island during the closest piling works to shore is 47dB(A),$L_{Aeq,2300\text{-}0700}$. This is 2dB(A) above the threshold level set out in BS5228:2009+A1:2014 of 45dBA and would result in neutral to slight adverse impacts, which in accordance with the criteria set out in Table 30.6 would not result in any likely significant effects. For piling during the daytime or evening, piling noise levels would be the same but the relevant threshold levels for impacts during these time periods is higher than that for night-time noise and therefore noise impacts would be less likely than during the night-time and so no likely significant effects are predicted during the daytime or evening time periods."

And the following text shall be added:

Construction noise associated with the installation of WTGs and OSP on jacket substructures with suction bucket foundations has been assessed at the nearest onshore receptors.

The main noise sources for the installation of WTGs and OSP on jacket substructures are as follows (sound power levels taken from BS5228-1:2009+A1:2014):

- 6 handheld welders, each with a sound power level of 101 dBL_{Aeq} (reference sound power level from Table C 3-31 in BS5228-1); and
- 6 generators, each with a sound power level of 106 dBL_{Aeq} (reference sound power level from Table C6-41 in BS5228-1).

Based on a separation distance of 12km, the predicted total noise level is 24 dBA at the nearest receptor on Red Island. This is significantly below both day and night construction noise thresholds and therefore, construction noise effects from the installation of WTGs with SBJ foundations are not predicted to have a significant effect on receptors, and construction noise has been screened out for further assessment in this chapter. As the OSP is situated further from Red Island than the nearest WTG, construction noise effects from OSP construction are also screened out for further assessment in this chapter.

There are no other changes required to this section. Refer to Section 30.5.2.1 of Chapter 30 of the 2024 EIAR.

30.5.2.2 Onshore Construction Activities, Phasing, and Plant

In accordance with RFI Section 19 (a), the Developer has discussed the potential for 24 hour working in select locations with full road closures with Fingal County Council (FCC).

[3] Value of 139dBA from the Awel y Mor Offshore wind farm assessment , para 320 of Vol 3, Chapter 10: Noise & Vibration Assessment report: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010112/EN010112-000211-6.3.10_AyM_ES_Volume3_Chapter10%20_Noise_and_Vibration_Final.pdf

[4] Value of 127dBA from Mason TI, Collett AG, Barham RJ, Miller JH, Gallien D, Khan AA. (2018). Field Observations During Wind Turbine Foundation Installation at the Block Island Wind Farm, Rhode Island Appendix C: Airborne Noise Monitoring Report. Subacoustech Report no. E494R0202. Prepared under BOEM Award Contract No. M15PC00002, Task Order No. M16PD00031.

The inclusion of 24 hour working at these locations will only proceed following further engagement with all relevant stakeholders and local authorities. Therefore, the following text shall be deleted:

"Standard construction hours will be from 07:00 – 19:00, Monday to Saturdays. An indicative programme and phasing are described in the Onshore Construction Strategy Chapter.

It is anticipated that there will be times, due to exceptional circumstances, that construction works will be necessary outside of the standard hours (e.g., for HDD operations). This will be agreed in advance with the relevant local authority and communicated to the affected noise-sensitive receptors with an estimate of timing and duration of the activities."

And replaced with the following:

Standard construction hours will be from 07:00 – 19:00, Monday to Saturdays. An indicative programme and phasing are described in the Onshore Construction Strategy Chapter and the Construction Traffic Management Plan (CTMP) included as Appendix A within Appendix 9.1: Onshore Construction Environmental Management Plan (CEMP).

It is anticipated that there will be times that construction works will be necessary outside of the standard hours (e.g., for HDD operations and construction of the onshore cable route). This will be agreed in advance with the relevant local authorities and stakeholders and communicated to the affected noise-sensitive receptors with an estimate of timing and duration of the activities. The contractor responsible for the works will be expected to implement all reasonable measures to reduce noise as far as possible during out of hours construction works.

There are no other changes required to this section. Refer to Section 30.5.2.2 of Chapter 30 of the 2024 EIAR.

30.5.2.3 Potential construction noise effects – landfall site and grid facility

To comply with RFI 13 (e), additional noise sensitive receptors have been included to represent proposed residential properties under the Flemington LAP. As such the text in this section along with Table 30.15 of Chapter 30 of the 2024 EIAR shall be deleted in its entirety and replaced with the following:

For the construction of the landfall site and grid facility (including site preparation, main construction activities at the grid facility and HDD drilling at the landfall site), predicted noise levels and noise impacts in the absence of mitigation are presented in Table A30.6. The predicted levels have assumed a scenario of all plant listed in Table 30.13 operating simultaneously 50% of the time (refer to Image 30.4 for noise sensitive receptor locations) with the exception of the rock breaker, which has been excluded from the construction noise assessment at the grid facility as it will only be used as part of the onshore cable route excavation (the hydraulic hammer rig is still included for the grid facility in the case that it is required during excavation for foundations). The assumption of all plant operating simultaneously 50% of the time is conservative, as, due to the linear nature of the construction timeline, only a limited number of plant items will be operating at the same time.

Table A30.6 Predicted unmitigated construction noise levels at noise-sensitive receptors near landfall site and grid facility (replaces Table 30.15 in Chapter 30 of the 2024 EIAR)

Noise-sensitive receptor	Distance from receptor to construction works areas [m]	Predicted noise level, $L_{Aeq,1hr}$ [dB]	Exceedance of construction noise level above threshold value in table 30.5 [dB]	EPA EIAR magnitude of impacts
LAP1	30	76	11	Very Significant Impact
LAP2	20	80	15	Very Significant Impact
LAP3	60	70	5	Slight to Moderate Impact
LAP4	170	61	0	Neutral to Slight Impact

Noise-sensitive receptor	Distance from receptor to construction works areas [m]	Predicted noise level, $L_{Aeq,1hr}$ [dB]	Exceedance of construction noise level above threshold value in table 30.5 [dB]	EPA EIAR magnitude of impacts
NSR1	400	54	0	Neutral to Slight Impact
NSR2	100	66	1	Neutral to Slight Impact
NSR3	150	62	0	Neutral to Slight Impact
NSR4	170	61	0	Neutral to Slight Impact
NSR5	70	69	4	Slight to Moderate Impact
NSR6	30	72	7	Moderate to Significant Impact
NSR7	260	58	0	Neutral to Slight Impact
NSR8	190	60	0	Neutral to Slight Impact

In the absence of noise mitigation during the construction phase, LAP3 and NSR5 would be subject to slight to moderate adverse impacts, NSR6 would be subject to moderate to significant magnitude impacts and LAP1 and LAP2 would be subject to very significant impacts.

The duration of the works would be more than 40 days over six consecutive months and so in the absence of mitigation, the noise impacts at NSR5, NSR6, LAP1, LAP2 and LAP3 would constitute a likely significant effect in the absence of mitigation.

30.5.2.4 Potential construction noise effects – onshore cable route

As noted in Section 30.5.2.2, construction works for the onshore cable route may be required to take place during both day and night. The potential impact of these works taking place during the night are to be included in this document. There is no change to the assessment of construction works for the onshore cable route taking place during the day as assessed and shown in Table 30.16 of the 2024 EIAR. Changes to the introductory text and the additional section presenting the night-time assessment to be added are outlined below. There has been no change to the impact.

The following text of Chapter 30 of the 2024 EIAR shall be deleted:

"Construction noise levels have been predicted along the onshore cable route for the different phases of works. These are presented in Table 30.16. The noise levels have been predicted assuming the plant listed in Table 30.14."

And replaced with the following:

Construction noise levels have been predicted along the onshore cable route for the different phases of works. These are presented in Table 30.16 (of the 2024 EIAR) and Table A30.7 and assessed against noise thresholds for day and night respectively. The noise levels have been predicted assuming the plant listed in Table 30.14 of the 2024 EIAR.

Further, the following text, along with Table A30.4, shall be added to Section 30.5.2.4 to now present the assessment of night-time construction operations along the onshore cable route:

Night-time onshore cable route operations

In addition to daytime works, construction activities for the onshore cable route may also be carried out during the night subject to agreement with the local authority. Therefore, the noise levels and noise impacts predicted for each phase of the onshore cable route works (in the absence of noise mitigation) have also been assessed against the night-time threshold and are set out below in Table A30.7.

Table A30.7 Predicted night-time construction noise impacts at noise-sensitive receptors along the onshore cable route

Cable trenching construction phase	Night-time noise level at 20m from works, $L_{Aeq,1hr}$ dB	Level above night time threshold value (45dB) as set out in Table 30.5 of the 2024 EIAR, (dB)	Potential Noise Impacts
Breaking of the existing road surface	73	28	Very Significant
Cable trench excavation	67	22	Very Significant
Cable trench backfilling	67	22	Very Significant
Road resurfacing	68	23	Very Significant
Joint bay construction	74	29	Very Significant
Inline HDD drilling works	72	27	Very Significant
Offline HDD drilling works	72	27	Very Significant

The potential impacts are based on the night-time threshold value for impacts of 45dBA set out in Table 30.5 of the 2024 EIAR. For night-time works, very significant temporary adverse impacts are predicted for each stage of construction.

The impacts set out in Table A30.7 are predicted at all residences alongside and facing onto the onshore cable route.

Construction works associated with the joint bays and HDD locations are predicted to produce temporary, moderate to significant magnitude impacts.

However, as the total duration of the noise impacts will be less than 40 days in any six consecutive months and also less than 10 days in any 15 consecutive days at any one location along the onshore cable route, no likely significant effects are predicted as a result.

There are no other changes required to this section. Refer to Section 30.5.2.4 of Chapter 30 of the 2024 EIAR.

30.5.3 Construction Phase Vibration

There are no changes to this section. Refer to Section 30.5.3 of Chapter 30 of the 2024 EIAR. Therefore, the significance of effect remains unchanged from the 2024 EIAR and there are no likely significant effects predicted from construction phase vibration at the landfall site, grid facility or along the onshore cable route.

30.5.4 Construction Traffic

30.5.4.1 Noise from Construction Traffic Along the Cable Route

Construction traffic noise has been assessed, in line with advice provided in the DMRB (see Table A30.1 for reference), against more recent traffic flow predictions taking account of the updated baseline traffic assessment in Chapter 24: Traffic and Transportation (as per RFI Section 19 (c)).

Therefore, Table 30.18 of Chapter 30 shall be deleted in its entirety and replaced with Table A30.4 to reflect the updated traffic survey data.

Table A30.8 Predicted change in traffic noise level due to construction traffic with and without development (replaces Table 30.18 of Chapter 30 in the 2024 EIAR)

Section	Road	Existing traffic flow, AADT	Existing proportion of heavy vehicles	Traffic flow with addition of construction traffic, AADT	Proportion of heavy vehicles including construction traffic	Change in noise level from additional construction traffic, dB(A)
1	Drogheda Street South	10860	1%	11129	3%	0.1
2	R132 Dublin Street	12877	2%	13075	3%	0.1
3.1	R132 North	11499	3%	11529	3%	0.0
3.2	R132 North	9848	9%	9999	9%	0.1
5	R132 South	10883	10%	10998	10%	0.0
6	R132 Jordanstown Rd	30192	7%	31054	9%	0.1
7	Lissenhall Road Overpass	29903	7%	30772	9%	0.1
8	R132	33857	5%	34567	6%	0.1
9	Spittal Hill	5022	2%	5163	4%	0.1
10.1	Estuary Rd East	6981	1%	7049	2%	0.0
11	Estuary Rd	5618	2%	5656	2%	0.0
12	Swords Rd East	14995	3%	15066	3%	0.0
13	R107 Malahide Rd	10354	2%	10401	3%	0.0
13	R107 Malahide Rd	13083	3%	13209	3%	0.0
14A	R107 Malahide Rd	16687	4%	16813	4%	0.0
14B	R124 Drumnigh Rd	10948	1%	11007	1%	0.0
15	R139	35485	6%	35762	7%	0.0

There are no other changes required to this section. Refer to Section 30.5.4.1 of Chapter 30 of the 2024 EIAR.

30.5.4.2 Noise from Diverted Traffic During Onshore Cable Route Construction

To reflect the updated traffic data analysis (in compliance with RFI Section 19 (c)), the construction traffic noise assessment has been updated to reflect the updated traffic flow predictions.

Therefore, Table 30.19 of Chapter 30 of the 2024 EIAR shall be deleted in its entirety and replaced with Table A30.5

Table A30.9 Noise level changes associated with road closures & diversions (replaces Table 30.19 of Chapter 30 of the 2024 EIAR)

Road Section	Road	Current two-way traffic	Additional diverted traffic	Total traffic with diversion in place	Decibel increase in noise from addition of diverted traffic, dB(A)	Duration of road closure and associated diversion
1	R122	16835	8109	24945	1.7	1-2 Weeks
	Harry Reynolds Road	7653	8109	15763	3.1	
5	R132	10883	4150	15033	1.4	2 Weeks
	R125 Castlegrange Road	23978	4150	28128	0.7	
	R125 Rathbeale Road	9857	4150	14007	1.5	
	R108	4886	4150	9036	2.7	
9	Estuary Road	4334	5022	9356	3.3	1-2 Weeks
	Mantua Road	4229	5022	9251	3.4	
	R132	32094	5022	37116	0.6	
10.1	Mantua Road	4229	4334	8563	3.1	2-3 Weeks
	R132	32094	4334	36428	0.6	
	Spittal Hill	5022	4334	9356	2.7	
10.2	Estuary Road	5618	6981	12599	3.5	3-4 Weeks
	R106	15837	6981	22817	1.6	
	R132	32094	6981	39075	0.9	
	Mantua Road	4229	6981	11210	4.2	
12	R106	15837	12896	28732	2.6	3-4 Weeks
	R132	27590	12896	40486	1.7	
	R125	18390	12896	31286	2.3	
	R139	52431	12896	65327	1.0	
	R107	21854	12896	34749	2.0	
13	R106	15837	8596	24432	1.9	3-4 Weeks
	R132	27590	8596	36186	1.2	
	R125	18390	8596	26986	1.7	
	R139	52431	8596	61027	0.7	
14A	R106	15837	13083	28920	2.6	1-2 Weeks
	R132	27590	13083	40673	1.7	
	R125	18390	13083	31473	2.3	
	R139	52431	13083	65514	1.0	
14B.1	R107	15552	8622	24173	1.9	2-3 Weeks
	R123	9787	8622	18409	2.7	

Road Section	Road	Current two-way traffic	Additional diverted traffic	Total traffic with diversion in place	Decibel increase in noise from addition of diverted traffic, dB(A)	Duration of road closure and associated diversion
	R124	10936	8622	19557	2.5	
14B.2	R106	11614	10948	22561	2.9	2-3 Weeks
	R107	8596	10948	19543	3.6	
	R123	9787	10948	20735	3.3	
14B.3	R123	9267	1081	10348	0	1 Week
	Hole in the Wall Road	8202	1081	9283	0	
	Belmayne	7359	1081	8441	0	

Whilst the traffic flows have changed from those presented in Section 30.5.4.2 of Chapter 30 of the 2024 EIAR, there is no change to the noise impacts arising from diverted traffic during the construction of the proposed development, i.e., even though the decibel increase in noise may have changed from the 2024 EIAR, the likelihood of a significant impact has not changed as none of the increases in noise level are above the threshold for significance. Therefore, no likely significant effects are predicted.

There are no further changes to this section. Refer to Section 30.5.4.2 of Chapter 30 of the 2024 EIAR.

30.5.5 Ecological Receptors

There are no changes to this section. Refer to Section 30.5.5 of Chapter 30 of the 2024 EIAR.

30.5.6 Non-residential receptors

There are no changes to this section. Refer to Section 30.5.6 of Chapter 30 of the 2024 EIAR.

30.5.7 Operational Phase

30.5.7.1 Operational WTG noise

In response to RFI Section 21 (a) and 21 (b), Section 30.5.7.1 further modelling in line with the methodology in BEK nr 135 has been undertaken to provide additional information on the operational airborne noise from the proposed WTGs.

Therefore, the following paragraph shall be deleted:

"A noise source sound power level of 115dBAL$_w$ for each WTG – a source level representative of large offshore WTG of the type proposed for the proposed development, with all 49 turbines (the highest number of WTG proposed) assumed to be operating at once."

And replaced with the following text and Table A30.7:

A noise source sound power level of 115dBAL$_w$ for each WTG – a source level representative of large offshore WTG of the type proposed for the proposed development, with all 49 turbines (the highest number of WTG proposed) assumed to be operating at once. This level is based on the manufacturer's data of maximum A-weighted sound power level of a turbine of a similar size to that expected to be used in the proposed development.

For completeness, the octave band sound power levels used are presented in Table A30.10 below. These sound power levels are the highest (maximum) reported levels for the representative turbine, occurring at hub height wind speeds of 11m/s and above. For reference, the representative turbine has a cut-in wind speed of 3 m/s and a cut-out wind speed of 31 m/s.

Table A30.10: Maximum turbine sound power levels in octave bands (63Hz to 8000Hz) for wind speeds 11m/s and above

Octave band sound power levels, L_w, dB								A-weighted sound power level, dBA
63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	
126	121	118	112	106	106	101	90	115

Additionally, the following text shall also be deleted:

"Corrections for geometrical spreading, ground correction and atmospheric (air) absorption were applied in line with the guidance in ISO9613 over the propagation distance of 12km (12km being the closest distance from onshore residential properties to the array area). The ISO9613 standard gives predictions assuming favourable wind conditions to sound propagation i.e. downwind propagation. The ground conditions are assumed to be hard ground (representative of water) and the source and receiver heights are assumed to be 200m and 2m respectively."

And replaced with the following text:

The offshore wind farm has been modelled in 3D in SoundPLANnoise 9.0, which implements the methodology in BEK nr 135.

The following information has been used to input into the model:

- Sound power levels of WTGs (as per Table A30.10);
- Terrain (assumed flat between the WTG and nearest sensitive receptor at Skerries Harbour);
- Ground absorption has been modelled as hard (i.e., the water is assumed to be completely reflective);
- The hub height of the WTGs is 165 m;
- The rotor diameter of the WTGs is 250 m;
- The reference wind speed is 11 m/s; and
- Noise levels are predicted at 2 m above ground level.

Based on these assumptions, noise from WTGs is predicted to be 16 dBL_{Aeq} at Skerries Harbour (the nearest sensitive receptor). This noise level is compliant with the NG4 noise limit of 45 dBA, as well as the ETSU R-97 noise limit of 35 dBA.

A sensitivity check has also been carried out on the operational noise from the OSP, which is in compliance with the NG4 noise limit of 45 dBA and the ETSU R-97 noise limit of 35 dBA at the nearest noise sensitive receptor.

For further context, the following text shall be included at the end of Section 30.5.7.1:

It is acknowledged that it is not certain that the sound power data presented Table A30.10 is warranted data. As per best practice guidance contained within the *Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise:* 2013, published by the Institute of Acoustics (IOA), an allowance for uncertainty of +2dB should be applied to unwarranted WTG sound power levels.

Allowing for the above correction, the predicted noise level from the WTG operations at the nearest onshore residential receptors 18dBL_{Aeq} / 16dBL_{A90}.

These calculated noise levels have been assessed against both the thresholds set out in *Guidance Note for Noise: Licence Applications, Survey, and Assessments in Relation to Scheduled Activities (NG4)*: 2016 published by the Environmental Protection Agency and against the thresholds set out in *Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise:* 2013, published by the Institute of Acoustics (IOA) ETSU R-97, and no mitigation is necessary for compliance with the threshold levels.

Finally, it is acknowledged that because the specific make and model of WTGs which will be installed is not yet known, a representative sound power level has been used as the basis of the EIAR assessment. When the final WTG model has been selected, the sound power levels will be compared to those used in this assessment to confirm compliance with relevant guidelines and legislation.

Whilst these changes reflect a variation in the initial assessment (further modelling and allowing for 2dB uncertainty in WTG sound power levels), the calculated noise levels remain below the threshold levels for potential effects set out in NG4 (45dBL_{Aeq}) and ETSU R-97 (35dBL_{A90}) and therefore the previous assessment outcome that no likely significant effects are predicted as a result of operational WTG noise remains unchanged.

There are no further changes required to this section. Refer to Section 30.5.7.1 of Chapter 30 of the 2024 EIAR.

30.5.7.2 Onshore Cable Route

There are no changes to this section. Refer to Section 30.5.7.2 of Chapter 30 of the 2024 EIAR. Therefore, the previous conclusion that occasional maintenance and testing of the cable will not give rise to any likely significant noise or vibration effects remains unchanged.

30.5.7.3 Grid facility

To comply with RFI 13 (e), additional noise sensitive receptors have been included to represent proposed residential properties under the Flemington LAP. To ensure compliance with EirGrid requirements, all receptors are assessed at the property boundary. With the adoption of the Flemington LAP, more certainty surrounding the location of additional noise sensitive receptors and more detailed information now available on the plant to be installed at the grid facility (through the ongoing design process), minor amendments to Section 30.5.7.3 are now proposed, including additional embedded mitigation to ensure no significant effects will result.

As such, Section 30.5.7.3 of Chapter 30 shall be deleted in its entirety and replaced with the following:

The grid facility, which will be located at the landfall site, will be operational 24 hours a day, 7 days a week. Nearby noise-sensitive receptors have been modelled to the north, east, and south of the site (see Table A30.2).

3D modelling of the noise has been undertaken in SoundPLAN (version 9.1), which uses the ISO 9613-2 Propagation Method for the propagation of outdoor noise.

The following assumptions have been included in the modelling:

- Terrain has been modelled as flat ground;
- Ground absorption areas have been input into the model as follows:
  - Soft ground for fields/agricultural areas
  - Hard ground for roads and concrete hardstands
- The SVC cooler banks have been selected as the low noise option (reducing their source sound power from 90dBA to 70dBA);
- The SVC transformer tank is contained within an enclosure that provides acoustic attenuation (reducing its source sound power from 95dBA to 75dBA); alternatively, lower-noise units which achieves the same reduction in noise level as an enclosure would be used;
- The SVC transformer cooler bank includes a silencer, reducing its source sound power from 87dBA to 77dBA;
- A partial enclosure, 3 sidewalls and roof with a minimum sound insulation performance of Rockwool 30 (Rw30), is assumed on all shunt reactors and shunt reactor coolers. Alternatively lower-noise units with maximum sound power levels for shunt reactors of 78dBA alongside maximum sound power levels for shunt reactor coolers of 76dBA could also be used; and

- A 3-sided noise barrier has been included around the harmonic filter reactors to their south, east, and west sides. The barrier is solid and free from air gaps and is modelled as 1 m above the top of the harmonic filter reactors.
- Diesel generators:
  - Emergency diesel generators are only used in urgent situations (e.g., grid power failures) and only tested for one day in the month, during the daytime period.
  - A solid noise barrier with a minimum height of 1.8 m above the top of the generator surrounds the generator at the Bremore substation (closest to the LAP) on the 2 exposed sides (i.e., blocking line of sight from the generator to the LAP receptors).

The plant modelled at the grid facility is presented in Table A30.11 below. Octave band sound power levels have been presented where they are available, based on previous similar project experience.

Table A30.11 Operational noise source sound power levels for modelling (replaces Table 30.20 of Chapter 30 of the 2024 EIAR)

Equipment	Operational Scenario	No. units on site	Height of source above ground, m	% on time	L_w per unit, dBA	Octave band centre frequency, Hz							
						63	125	250	500	1k	2k	4k	8k
Shunt reactors (oil filled shunt reactor and D01 220kV shunt reactor)	Normal and Emergency	3	1	100	92	72	107	83	83	85	57	57	59
Shunt reactor coolers (previously included with the oil filled shunt reactors)	Normal and Emergency	3	1	100	84	54	99	65	75	77	49	49	51
Harmonic filter reactors (reactor L1 for filter bank)	Normal and Emergency	6	1	100	79	82	43	79	44	76	74	17	13
Mechanically switched reactors (130MVAr mechanical switched reactor)	Normal and Emergency	6	1	100	79	67	84	81	80	62	57	61	53
SVC Phase reactors (SVC phase reactor)	Normal and Emergency	3	2	100	76	64	81	78	77	59	54	58	50
SVC transformer cooler bank (with silencer) (SVC transformer cooler bank with silencer)	Normal and Emergency	1	1	100	77	83	69	76	76	71	69	59	49
SVC building air conditioning units	Normal and Emergency	2	0.4	100	72	77	73	72	69	65	62	64	62
SVC Transformer tank (in enclosure) (220/58kV 450MVA SVC transformer in enclosure)	Normal and Emergency	1	1	100	75	70	90	72	69	53	50	44	41
SVC Coolers (low noise units) (SVC plus low noise cooler unit)	Normal and Emergency	2	1	100	70	67	72	69	69	65	62	53	43
Diesel generator BS5228-1 Table C 4-76	Emergency only	2	0.2	100	89	108	102	85	82	81	76	73	65

Predicted noise levels associated with the operation of the proposed development according to the above methodology are presented in Table A30.12, Table A30.13, and Table A30.14.

Octave band data has been used in the noise modelling in order to assess tonal noise at nearby sensitive receptors at the LAP, given their proximity to the grid facility infrastructure. The data used in this assessment has been taken from projects with substation equipment of a similar size and with a similar purpose and is therefore considered representative of the noise levels of equipment that will be installed. An assessment of the predicted noise at low frequencies (63 Hz and 125 Hz) is presented below and shows that tonal noise from the grid facility is predicted to be below both the threshold of hearing (according to ISO 389-7) as well as the measured ambient noise level. However, as a conservative approach, the tonal correction of 5 dBA (as per NG4 and EirGrid documents referenced in Table A30.1) has been added to the broadband predicted noise levels as discussed further below.

The predicted rating noise levels have been compared to the relevant NG4 and EirGrid noise limits as well as the existing background noise levels at each receptor.

Table A30.12 Predicted operational noise levels - normal operational scenario (replaces Table 30.21 of Chapter 30 of the 2024 EIAR)

Noise Sensitive Receptor	Existing night time background noise level*, L_{90}, dBA	Predicted operational noise level, $L_{eq,T}$, dBA	BS4142 correction, dBA	Predicted rating level, $L_{r,Tr}$, dBA	Exceeds NG4 and EirGrid limit of 45dBA?**	Excess of rating level over background (BS41242)
LAP1	34	28	5	33	No	0
LAP2	34	29	5	34	No	0
LAP3	34	31	5	36	No	2
LAP4	34	28	5	33	No	0
NSR1	45	25	5	30	No	0
NSR2	46	31	5	36	No	0
NSR3	46	31	5	36	No	0
NSR4	46	32	5	37	No	0
NSR5	43	31	5	36	No	0
NSR6	43	31	5	36	No	0
NSR7	46	20	5	25	No	0
NSR8	43	23	5	28	No	0

*Modal value is used for the LAP background noise level (for long term noise monitoring) and average value is used for short term measurements for NSR1 to NSR8
**NG4 limit for night-time operation is 45 dBA

No exceedance in the noise limit is predicted under normal operating conditions and no likely significant effect predicted.

As discussed in Section 30.2.5.6, the limit for emergency situations is higher than that for normal operations as diesel generators would be active during these situations. This is reflected in the assessment in Table A30.13 below.

Table A30.13 Predicted operational noise levels - emergency operational scenario (replaces Table 30.22 of Chapter 30 of the 2024 EIAR)

Noise Sensitive Receptor	Existing night time background noise level*, L_{90}, dBA	Predicted operational noise level, $L_{eq,T}$, dBA	BS4142 correction, dBA	Predicted rating level, $L_{r,Tr}$, dBA	Exceeds NG4 and EirGrid limit of 55dBA?**	Excess of rating level over background (BS41242)
LAP1	34	30	5	35	No	1
LAP2	34	35	5	40	No	6
LAP3	34	43	5	48	No	14

Noise Sensitive Receptor	Existing night time background noise level*, L_{90}, dBA	Predicted operational noise level, $L_{eq,T}$, dBA	BS4142 correction, dBA	Predicted rating level, $L_{r,Tr}$, dBA	Exceeds NG4 and EirGrid limit of 55dBA?**	Excess of rating level over background (BS41242)
LAP4	34	37	5	42	No	8
NSR1	45	27	5	32	No	0
NSR2	46	32	5	37	No	0
NSR3	46	33	5	38	No	0
NSR4	46	34	5	39	No	0
NSR5	43	35	5	40	No	0
NSR6	43	36	5	41	No	0
NSR7	46	24	5	29	No	0
NSR8	43	30	5	35	No	0

*Modal value is used for the LAP background noise level (for long term noise monitoring) and average value is used for short term measurements for NSR1 to NSR8
*Limit for emergency operations = NG4 limit + 10 dBA = 55 dBA

No exceedance of the NG4 limit is predicted in the emergency situation.

There is an excess noise level of 14 dBA (above the measured background noise level) at receptor LAP3, which would indicate a significant negative impact on overall noise levels at that receptor, an excess of 6 dBA at LAP2 and an excess of 8 dBA at LAP4, which would indicate a moderate to significant negative impact, and an exceedance of 1 dBA at LAP1, which would indicate a neutral to slight negative impact. It should be noted, however, that this noise level is only predicted for emergency situations, and will be temporary and therefore no permanent or long-term significant effect is predicted.

Emergency diesel generator testing is limited to the daytime period, so the excess of the predicted rating level over the measured background level is assessed against the measured day time background noise level in Table A30.14.

Table A30.14 Predicted operational noise levels - emergency testing operational scenario (replaces Table 30.23 of Chapter 30 of the 2024 EIAR)

Noise Sensitive Receptor	Existing day time background noise level*, L_{90}, dBA	Predicted operational noise level, $L_{eq,T}$, dBA	BS4142 correction, dBA	Predicted rating level, $L_{r,Tr}$, dBA	Exceeds NG4 and EirGrid limit of 55dBA?**	Excess of rating level over background (BS41242)
LAP1	41	30	5	35	No	0
LAP2	41	35	5	40	No	0
LAP3	41	43	5	48	No	7
LAP4	41	37	5	42	No	1
NSR1	44	27	5	32	No	0
NSR2	49	32	5	37	No	0
NSR3	49	33	5	38	No	0
NSR4	49	34	5	39	No	0
NSR5	48	35	5	40	No	0
NSR6	45	36	5	41	No	0
NSR7	49	24	5	29	No	0
NSR8	47	30	5	35	No	0

*Modal value is used for the LAP background noise level (for long term noise monitoring) and average value is used for short term measurements for NSR1 to NSR8
*Day time NG4 limit = 55 dBA

No exceedance of the NG4 limit (55dbBA) is predicted, however an excess of 7 dBA above existing daytime background noise levels at receptor LAP3 is predicted (48 dBA), which would constitute a moderate to significant negative effect on the overall noise environment at this receptor. An excess of 1 dBA above the existing daytime background noise level at receptor LAP4 is predicted (42 dBA), which would constitute an imperceptible negative effect on the overall noise environment at this receptor.

Note that the background noise levels for the LAP receptors presented in Table A30.14 are the average modal values during long term noise monitoring (i.e., the values that occur the most often in the measurements). The daytime background noise levels range from 34 to 51 dBL_{A90}, and the fluctuation in daytime noise is likely to make the impact less noticeable. In addition, background noise levels for the LAP receptors are based on current site conditions (i.e. agricultural land). Once developed, it is likely that the daytime background level will increase with residential development activities and traffic within the LAP.

The emergency generators are tested monthly for 1 hour, and any exceedance over existing noise levels will be for a short time period, and therefore no permanent significant effect is predicted.

The overall effect from operational noise at the grid facility is identified as long-term, negative, and not significant.

Low Frequency and Tonal Noise

Noise from electrical substations can be tonal and have a significant low frequency component, especially around 100 Hz. In order to assess the low frequency and tonal components of the predicted noise from the grid facility, octave band data based on information from similar projects has been included in the noise model. This data has been taken from projects with similar sized equipment as at the grid facility substations.

The predicted low frequency noise at LAP2 has been graphed alongside the measured noise level at NM8 (near LAP2, LAP3 and LAP4), and the threshold of hearing. The graphs are shown in Image A30.4 and Image A30.5 for the 63 and 125 Hz octave bands.

The threshold of hearing for the graphs presented below is the reference threshold of hearing taken from ISO 389-7, which is defined as:

"the sound pressure level of a pure tone or one-third octave band of noise corresponding to the median value of the binaural thresholds of hearing of ontologically normal persons within the age limits from 18 years to 25 years inclusive."

i.e., this is the sound pressure level below which a person with normal hearing would not be likely to perceive a sound.

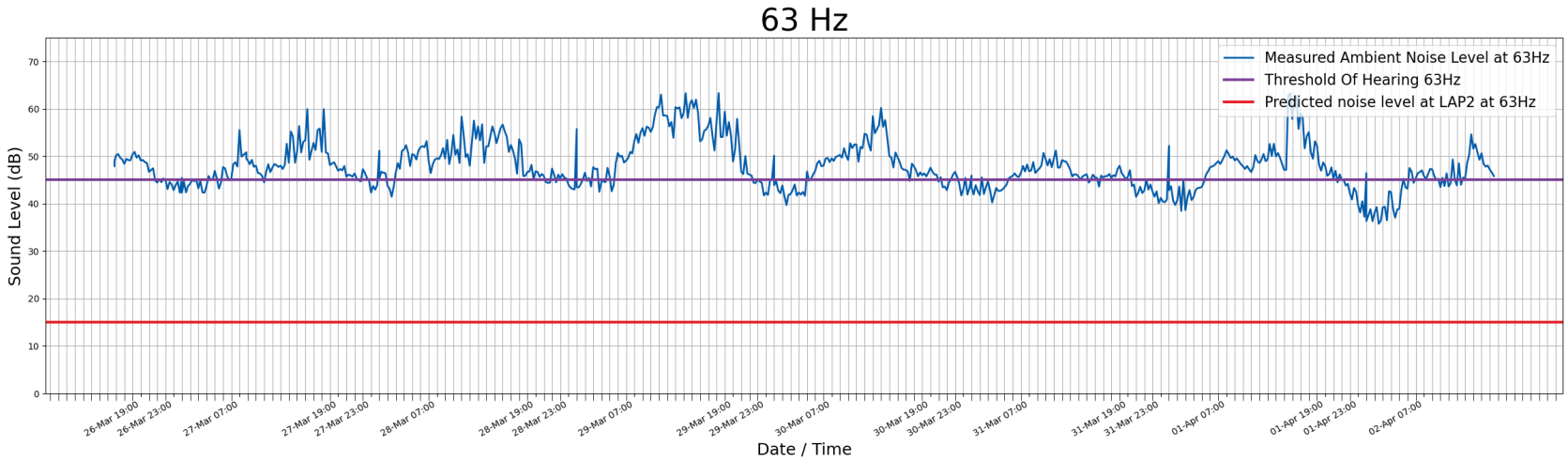

Image A30.4 Graph showing measured noise level at NM8, threshold of hearing, and predicted noise level at LAP2 for the 63Hz octave band

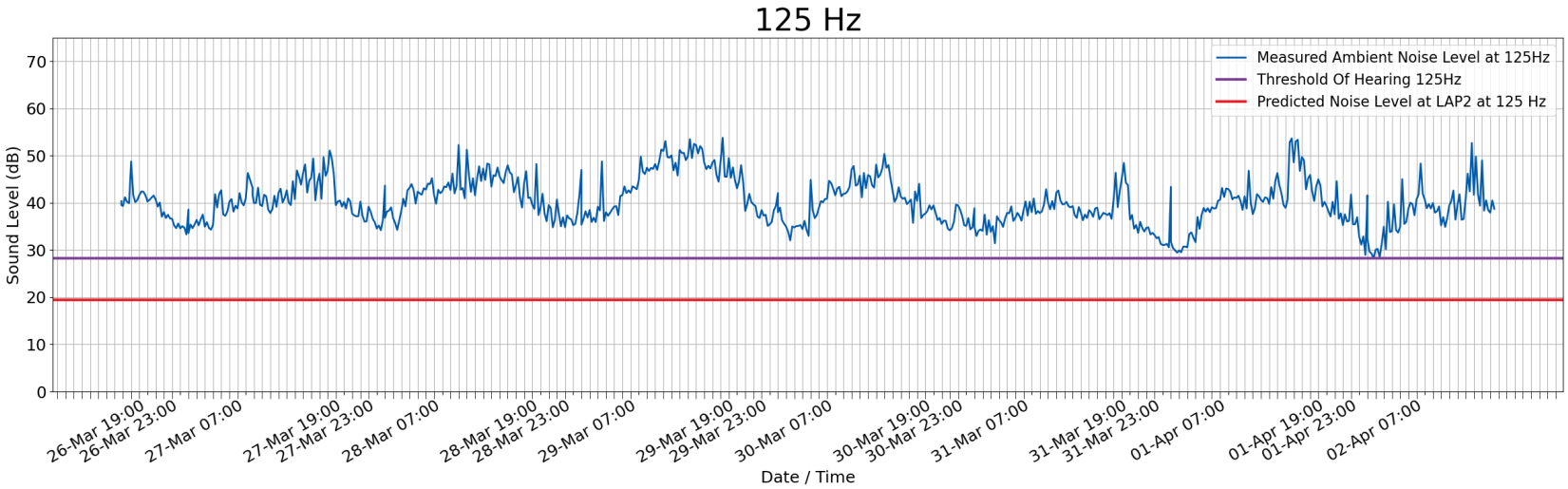

Image A30.5 Graph showing measured noise level at NM8, threshold of hearing, and predicted noise level at LAP2 for the 125Hz octave band

As can be seen from the graphs, the predicted overall noise at the LAP is below both the measured noise level on site, as well as the threshold of hearing. Providing that the equipment selected for the grid facility has noise levels that are equal to or less than the octave band data provided in Table A30.11, no impact from tonal or low frequency noise is predicted.

It is acknowledged that transformers can have a peak in 100Hz frequency; however, analysis at 100Hz with ⅓ octave band data has not been completed as the data is not available given the exact models and manufacturers of the equipment is not known at this stage in the design. Once detailed design is completed this will be assessed and any exceedances will be appropriately mitigated. The assessment outcome is unlikely to change as the results above show the predicted noise levels are well below the threshold of hearing at low frequencies. As an additional precaution, the 5 dBA tonality correction has been added to the predicted broadband noise levels in Table A30.12 to Table A30.14 above.

30.5.7.4 Belcamp substation

There are no changes to this section. Refer to Section 30.5.7.4 of Chapter 30 of the 2024 EIAR. Therefore, the previous conclusion that no additional operational noise will be generated at Belcamp substation as a result of the proposed development and therefore no noise impacts will result to nearby receptors remains unchanged.

30.5.8 Decommissioning

There are no changes to this section. Refer to Section 30.5.8 of Chapter 30 of the 2024 EIAR. Therefore, the previous conclusion that there will be no likely significant effects arising from the decommissioning of the proposed development remains unchanged.

30.6 Mitigation and Monitoring Measures

There are no changes to the introductory text to this section. Refer to Section 30.6 of Chapter 30 of the 2024 EIAR.

30.6.1 Construction Phase

There are no changes to the introductory text to this section. Refer to Section 30.6.1 of Chapter 30 of the 2024 EIAR.

30.6.1.1 Temporary Noise Barriers

Due to inclusion of the possibility of 24-hour works (as per RFI Section 19 (a)) and the updated construction assessment of the onshore cable route, the following text shall be deleted:

"The onshore cable route works will progress relatively quickly and will be primarily carried out on roads where the works need to be kept to a minimum of working width to minimise the need for road closures. Therefore, no noise barriers have been assumed for the onshore cable route works other than at the following specific locations:

Temporary noise barriers will be provided between the onshore cable route construction working area and the following four schools:

- *Corduff National School: a primary school on the R132 in Corduff*
- *St Nicholas of Myra National School, Kinsealy on the R107 Malahide Road*
- *St Molagas National School on the R132 Dublin Road, Balbriggan, and*
- *Malahide/Portmarnock Educate Together National School on the R107"*

And be replaced by the following:

The onshore cable route works will progress relatively quickly and will be primarily carried out on roads where the works need to be kept to a minimum working width to minimise the need for road closures.

However, if night-time works are required, noise barriers will be provided where these works take place. Elsewhere, for daytime works only, no noise barriers have been assumed for the onshore cable route works other than at specific locations identified below.

Temporary noise barriers will be provided between the onshore cable route construction working area and the following four schools:

- Corduff National School: a primary school on the R132 in Corduff;
- St Nicholas of Myra National School, Kinsealy on the R107 Malahide Road;
- St Molagas National School on the R132 Dublin Road, Balbriggan; and
- Malahide/Portmarnock Educate Together National School on the R107.

There are no other changes required to this section. Refer to Section 30.6.1.1 of Chapter 30 of the 2024 EIAR.

30.6.1.2 Good Industry Practice

There are no changes to this section. Refer to Section 30.6.1.2 of Chapter 30 of the 2024 EIAR.

30.6.1.3 Communications

There are no changes to this section. Refer to Section 30.6.1.3 of Chapter 30 of the 2024 EIAR.

30.6.1.4 Noise and Vibration Monitoring

There are no changes to this section. Refer to Section 30.6.1.4 of Chapter 30 of the 2024 EIAR.

30.6.2 Operational Phase

Updates to the operational assessment of the grid facility (Section 30.5.7.3) require the following text to deleted:

"For the operation of the grid facility, the following operating parameters have been assumed:

- *A static VAR compensator (SVC) cooler have been selected as the low noise option*
- *The SVC transformer and shunt reactors will be within an enclosure that provides acoustic attenuation; alternatively, lower-noise units which achieve the same reduction in noise level as an enclosure would be used."*

And replaced with the following:

For the operation of the grid facility, the following operating parameters have been assumed:

- The SVC cooler banks have been selected as the low noise option (reducing their source sound power from 90dBA to 70dBA);
- The SVC transformer tank is contained within an enclosure that provides acoustic attenuation (reducing its source sound power from 95dBA to 75dBA). Alternatively, lower-noise units which achieve the same reduction in noise level as an enclosure would be used;
- The SVC transformer cooler bank includes a silencer, reducing its source sound power from 87dBA to 77dBA;
- A partial enclosure, 3 sidewalls and roof with a minimum sound insulation performance of Rw30, is assumed on all shunt reactors and shunt reactor coolers. Alternatively lower-noise units with maximum sound power levels for shunt reactors of 78dBA alongside maximum sound power levels for shunt reactor coolers of 76dBA could also be used; and
- A 3-sided noise barrier has been included around the harmonic filter reactors to their south, east, and west sides. The barrier is solid and free from air gaps, and is modelled as 1 m above the top of the harmonic filter reactors; and

- A solid noise barrier with a minimum height of 1.8 m above the top of the generator at the Bremore substation (closest to the LAP) on the 2 exposed sides (i.e., blocking line of sight from the generator to the LAP receptors).

There are no other changes required to this section. Refer to Section 30.6.2 of Chapter 30 of the 2024 EIAR.

30.6.3 Decommissioning

There are no changes to this section. Refer to Section 30.6.3 of Chapter 30 of the 2024 EIAR.

30.7 Residual Effects

30.7.1 Construction Phase

The following section has been updated to reflect the new receptors for construction works at the grid facility along with the possible need for night-time works in the construction of the onshore cable route. As such, the following text should be deleted along with Table 30.24 of Chapter 30 of the 2024 EIAR:

"A summary of the residual effects of construction noise on residential receptors for each of the construction stages considered is presented in Table 30.24 and Table 30.25."

And replaced with the following:

A summary of the residual noise effects of construction noise on residential receptors for the construction of the grid facility is presented in Table A30.15

Table A30.15 Summary of residual effects at residential receptors from daytime construction noise – landfall site and grid facility (replaces Table 30.24 of Chapter 30 of the 2024 EIAR)

Assessment Topic/Receptor	Predicted Noise Level (Pre Mitigation), L_{Aeq} [dB]	Potential Effect (Pre Mitigation)	Predicted Noise Level (Post Mitigation), L_{Aeq} [dB]	Predicted Effect (Post Mitigation)
LAP1	76	Very significant magnitude of noise impact. Temporary, but a likely significant effect	66	No significant effect
LAP2	80	Very significant magnitude of noise impact. Temporary, but a likely significant effect	70	Slight to moderate magnitude of noise impact. Temporary, but a likely significant effect
LAP3	70	Slight to moderate magnitude of noise impact. Temporary, but a likely significant effect	60	No significant effect
LAP4	61	No significant effect	51	No significant effect
NSR1	54	No significant effect	44	No significant effect
NSR2	66	No significant effect	56	No significant effect
NSR3	62	No significant effect	52	No significant effect
NSR4	61	No significant effect	51	No significant effect
NSR5	69	Slight to moderate magnitude of noise impact. Temporary, but a likely significant effect	59	No significant effect
NSR6	72	Moderate to significant magnitude of noise impact. Temporary, but a likely significant effect	62	No significant effect

Assessment Topic/Receptor	Predicted Noise Level (Pre Mitigation), L_{Aeq} [dB]	Potential Effect (Pre Mitigation)	Predicted Noise Level (Post Mitigation), L_{Aeq} [dB]	Predicted Effect (Post Mitigation)
NSR7	58	No significant effect	48	No significant effect
NSR8	60	No significant effect	50	No significant effect

No change has been made to the residual effects of day time construction noise from the onshore cable route at receptors. However, due to the potential for night-time construction of the onshore cable route, the following text should be included at the end of Section 30.7.1, along with Table A30.13:

For the case where possible night-time works are to be carried out in the construction of the onshore cable route, Table A30.16 presents a summary of the residual effects.

Table A30.16 Summary of residual effects from night-time construction noise at residential noise-sensitive receptors – onshore cable route (replaces Table 30.25 of Chapter 30 of the 2024 EIAR)

Assessment Topic/Receptor	Predicted Noise Level (Pre Mitigation), L_{Aeq} [dB]	Potential Effect (Pre Mitigation)	Predicted Noise Level (Post Mitigation), L_{Aeq} [dB]	Predicted Effect (Post Mitigation)
HDD works	72	Very significant magnitude of noise impacts. Temporary. No likely significant effects due to short duration	62	Very significant magnitude of noise impacts. Temporary. No likely significant effects due to short duration
Onshore cable route: Joint bay works	74	Very significant magnitude of noise impacts. Temporary. No likely significant effects due to short duration	64	Very significant magnitude of noise impacts. Temporary. No likely significant effects due to short duration
Onshore cable route: breaking of existing road surface	73	Very significant magnitude of noise impacts. Temporary. No likely significant effects due to short duration	63	Very significant magnitude of noise impacts. Temporary. No likely significant effects due to short duration
Onshore cable route: cable trench excavation and backfilling	67	Very significant magnitude of noise impacts. Temporary. No likely significant effects due to short duration	57	Very significant magnitude of noise impacts. Temporary. No likely significant effects due to short duration
Onshore cable route: road resurfacing	68	Very significant magnitude of noise impacts. Temporary. No likely significant effects due to short duration	58	Very significant magnitude of noise impacts. Temporary. No likely significant effects due to short duration

In addition, the following text shall be deleted:

"Construction noise at four schools along the onshore cable route will be mitigated with noise barriers during construction works:

- *Corduff National School: a primary school on the R132 in Corduff*
- *St Nicholas of Myra National School, Kinsealy on the R107 Malahide Road*
- *St Molagas National School on the R132 Dublin Road, Balbriggan, and*
- *Malahide/Portmarnock Educate Together National School on the R107*

The mitigation will limit construction noise levels to 63dBA, 57dBA and 58dBA for breaking out of the existing road surfaces, trench excavation and backfilling, and road resurfacing works respectively. No likely significant effects are predicted.

Due to the low level of predicted vibration levels, no likely significant effects are predicted for construction vibration.

No likely significant effects are predicted to onshore noise-sensitive receptors due to offshore piling works."

And replaced by the following:

Construction noise at four schools along the onshore cable route will be mitigated with noise barriers during daytime construction works:

- Corduff National School: a primary school on the R132 in Corduff
- St Nicholas of Myra National School, Kinsealy on the R107 Malahide Road
- St Molagas National School on the R132 Dublin Road, Balbriggan, and
- Malahide/Portmarnock Educate Together National School on the R107

In addition to these locations, noise barriers will also be implemented where night-time works are required.

The mitigation will limit construction noise levels to 63dBA, 57dBA, 58dBA, 64dBA and 62dBA for breaking out of the existing road surfaces, trench excavation and backfilling, road resurfacing works, joint bay works and HDD respectively. No likely significant effects are predicted.

Due to the low level of predicted vibration levels, no likely significant effects are predicted for construction vibration.

No likely significant effects are predicted to onshore noise-sensitive receptors due to offshore construction works associated with the WTGs on SBJs.

There are no other changes required to this section. Refer to Section 30.7.1 of Chapter 30 of the 2024 EIAR.

30.7.1.1 Night-time HDD operations

There are no changes to this section. Refer to Section 30.7.1.1 of Chapter 30 of the 2024 EIAR.

Therefore, the significance of effect remains unchanged from the 2024 EIAR and no likely significant effects are predicted from HDD operations outside of daytime working hours.

30.7.2 Operational Phase

30.7.2.1 Grid Facility

In line with the updated operational noise assessment of the grid facility, the residual effects presented in Section 30.7.2.1 of Chapter 30 of the 2024 EIAR require an update.

As such, the following text along with Table 30.27 of Chapter 30 of the 2024 EIAR shall be deleted:

"The normal operating scenario has been assessed against the nighttime noise limit as well as the existing background noise level at nearby noise-sensitive receptors. No likely significant effect are predicted from this scenario."

And replaced with the following:

The normal operating scenario has been assessed against the night-time noise limit as well as the existing background noise level at nearby noise-sensitive receptors. No likely significant effects are predicted from this scenario.

Table A30.17 Summary of residual effects from the operational phase noise – normal operating scenario (replaces Table 30.27 of Chapter 30 of the 2024 EIAR)

Assessment Topic/Receptor	Potential Effect (Pre-Mitigation)	Predicted Effect (Post-Mitigation)
LAP1	No significant effect	No significant effect
LAP2	No significant effect	No significant effect
LAP3	No significant effect	No significant effect
LAP4	No significant effect	No significant effect
NSR1	No significant effect	No significant effect
NSR2	No significant effect	No significant effect
NSR3	No significant effect	No significant effect
NSR4	No significant effect	No significant effect
NSR5	No significant effect	No significant effect
NSR6	No significant effect	No significant effect
NSR7	No significant effect	No significant effect
NSR8	No significant effect	No significant effect

The following text along with Table 30.28 of Chapter 30 of the 2024 EIAR shall be deleted:

"The emergency operating scenario has been assessed against the night-time noise limit (plus emergency allowance) and existing background noise level at nearby noise-sensitive receptors. No likely significant effect are predicted from this scenario."

And replaced with the following:

The emergency operating scenario has been assessed against the night-time noise limit (plus emergency allowance) and existing background noise level at nearby noise-sensitive receptors. No likely significant effects are predicted from this scenario.

Table A30.18 Summary of residual effects from the operational phase noise – emergency operating scenario (replaces Table 30.28 of Chapter 30 of the 2024 EIAR)

Assessment Topic/Receptor	Potential Effect (Pre-Mitigation)	Predicted Effect (Post-Mitigation)
LAP1	No significant effect	No significant effect
LAP2	No significant effect	No significant effect
LAP3	No significant effect	No significant effect
LAP4	No significant effect	No significant effect
NSR1	No significant effect	No significant effect
NSR2	No significant effect	No significant effect
NSR3	No significant effect	No significant effect
NSR4	No significant effect	No significant effect
NSR5	No significant effect	No significant effect
NSR6	No significant effect	No significant effect
NSR7	No significant effect	No significant effect
NSR8	No significant effect	No significant effect

The following text along with Table 30.29 of Chapter 30 of the 2024 EIAR shall be deleted:

"The emergency testing operating scenario has been assessed against the daytime noise limit and existing background noise level at nearby noise-sensitive receptors. No likely significant effect are predicted from this scenario."

And replaced with the following:

The emergency testing operating scenario has been assessed against the daytime noise limit and existing background noise level at nearby noise-sensitive receptors No likely significant effects are predicted from this scenario.

Table A30.19 Summary of residual effects from the operational phase noise – emergency testing operating scenario (replaces Table 30.29 of Chapter 30 of the 2024 EIAR)

Assessment Topic/Receptor	Potential Effect (Pre-Mitigation)	Predicted Effect (Post-Mitigation)
LAP1	No significant effect	No significant effect
LAP2	No significant effect	No significant effect
LAP3	No significant effect	No significant effect
LAP4	No significant effect	No significant effect
NSR1	No significant effect	No significant effect
NSR2	No significant effect	No significant effect
NSR3	No significant effect	No significant effect
NSR4	No significant effect	No significant effect
NSR5	No significant effect	No significant effect
NSR6	No significant effect	No significant effect
NSR7	No significant effect	No significant effect
NSR8	No significant effect	No significant effect

There are no other changes required to this section. Refer to Section 30.7.2.1 of Chapter 30 of the 2024 EIAR.

30.7.2.2 Operational noise from WTGs

There are no changes to this section. Refer to Section 30.7.2.2 of Chapter 30 of the 2024 EIAR. Therefore, the previous conclusion that no likely significant effects are predicted from the offshore WTGs remains unchanged.

30.7.3 Decommissioning

There are no changes to this section. Refer to Section 30.7.3 of Chapter 30 of the 2024 EIAR. Therefore, the previous conclusion that there will be no likely significant effects arising from the decommissioning of the proposed development remains unchanged.

30.8 Transboundary Effects

There are no changes to this section. Refer to Section 30.8 of Chapter 30 of the 2024 EIAR.

30.9 Cumulative Effects

The Cumulative Effects Assessment (CEA) is presented in Volume 6, Chapter 38: Cumulative and Inter-Related Effects. In response to RFI Section 5, the CEA has been updated to align with the UK Guidance document *Nationally Strategic Infrastructure Projects (NSIP) Advice on Cumulative Effects Assessment*. However, it should be noted that the overall conclusions of the CEA from a noise and vibration perspective remain unchanged from the 2024 EIAR (as stated below).

Therefore, the entirety of Section 30.9 of Chapter 21 of the 2024 EIAR shall be deleted and replaced with the text herein:

A long list of "other existing and/or approved developments" which were deemed to be potentially relevant for inclusion in the cumulative impact assessment was compiled (refer to Volume 6, Chapter 38: Cumulative and Inter-related Effects (hereafter referred to as 'Chapter 38')). A screening exercise of the "long list" was carried out in order to determine whether each of those "other existing and/or approved developments" has the potential to give rise to likely significant cumulative effects with the proposed development from a noise and vibration perspective. Many of the "other existing and/or approved developments" were screened out for a number of reasons including their location, scale and nature of the project. Those projects which were "screened in" were carried forward for assessment. The results of the assessment are presented in Section 38.2.3.21 of Chapter 38.

The assessment concluded that there are no likely significant direct or indirect cumulative noise and vibration effects predicted during the construction, operation, or decommissioning phases of the proposed development.

30.10 References

The only change to this section is to include the EirGrid requirements (Section 30.2.3), and the additional guidance documents referenced in Section 30.5.7.1. Therefore, the following references shall be included in Section 30.10 of Chapter 30 of the 2024 EIAR:

EirGrid (2019) *110/220/400 kV Substation General Requirements – Ref:XDS-GFS-00-001-R4*

EPA (2011) *Guidance Note for Noise Assessment of Wind Turbine Operations at EPA Licensed Sites (NG3)*

Institute of Acoustics (2013) *Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise*

There are no other changes required to this section. Refer to Section 30.10 of Chapter 30 of the 2024 EIAR.