



EIAR Volume 8: Planning Stage Plans

Chapter 2: Schedule of Commitments

Kish Offshore Wind Ltd

RWE  **SLR** **GoBe**
APEM Group

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Dublin Array Offshore Wind Farm

Environmental Impact Assessment Report

Volume 8, Chapter 2: Schedule of Commitments

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Acronyms

Term	Definition
Dublin Array	Dublin Array Offshore Wind Farm
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report

1 Introduction

- 1.1.1 Under Article 5(1)(c) of the EIA Directive, the Environmental Impact Assessment Report (EIAR) must include a description of the project features and measures envisaged to avoid, prevent, reduce, and, if possible, offset likely significant adverse effects on the environment.
- 1.1.2 In line with the EPA Guidelines (2022), this EIAR categorises measures into three types:
- ▲ Project Design Features: Measures identified and incorporated during design iterations to avoid and prevent likely significant effects;
 - ▲ Other Avoidance and Preventative Measures: Measures identified during the early development phase, beyond design features, incorporated as constituent elements of the project and referenced in the project description chapter; and
 - ▲ Additional Mitigation: Measures identified after assessing likely significant effects within each EIAR chapter, introduced to mitigate any identified significant adverse effects on the environment, with proposed monitoring arrangements where appropriate.
- 1.1.3 Each EIAR chapter identifies these measures, demonstrating their effectiveness in avoiding or preventing or reducing significant adverse effects on the environment.
- 1.1.4 This chapter of the EIAR represents a compilation of all the measures that have been committed to and identified within the EIAR, for both the offshore assessment chapters detailed within Volume 3 (Table 1) and the onshore assessment chapters detailed within Volume 5 (Table 2).

Table 1 Offshore Schedule of Commitments

Proposed Commitment	Marine Geology, Oceanography and Physical Processes	Marine Water and Sediment Quality	Benthic Subtidal and Intertidal Ecology	Fish and Shellfish Ecology	Marine Mammals	Offshore and Intertidal Ornithology	Bats in the Offshore Environment	Nature Conservation	Commercial Fisheries	Shipping & Navigation	Marine Infrastructure & Other Users	Aviation and Radar	Marine Archaeology	Cultural Heritage Settings Assessment	Seascape, Landscape and Visual	Noise and Vibration (Terrestrial Receptors)	Socio-Economics, Tourism, Recreation and Land Use	Climate change	Major Accidents and Disasters
To avoid the release of bentonite on punch out of the cable landfall the drill head will stop short of punch out, flush bentonite, and then complete the final 10 m		X																	
Procedures for impact piling, will include: Implementation of a 1000m mitigation zone pre-piling Marine Mammal Observer (MMO) watches; pre-piling Passive Acoustic Monitoring (PAM); Soft start procedure; and Breaks in piling procedure				X	X			X											
The Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB).				X	X			X											
Procedures for geophysical surveys using 3D UHRS (sparker) equipment, will include: Implementation of a 1000m mitigation zone; Pre-shooting (in relation to survey start) Marine Mammal Observer (MMO) watches; Delay of operations if marine mammals detected for at least 30 mins; Soft start procedure; Line changes longer than 40 minutes will be stopped with a pre watch of 30 mins, followed by soft start to resume; Breaks in operation of between 5-10 mins will prompt a MMO watch.				X	X														
Procedures for UXO detonation will include: Implementation of a mitigation zone of 1000 m; Pre-detonation MMO and PAM; Soft start charges for high order; Use of bubble curtains for high order; and Post detonation searches				X	X			X											
Installation of cables to an optimum cable burial depth - offshore cables will, where possible, be buried in the seabed to the optimal performance burial depth for the specific ground conditions. Where optimum burial depth cannot be achieved secondary protection measure will be deployed e.g. concrete mattress, rock berm, grout bags or an equivalent in key areas	X	X	X	X				X	X	X	X								
Burial of cables will provide shielding for any electric fields generated in the cables E fields.			X	X					X										
Cable crossings agreements between the Applicant, CWP and EirGrid to include the following general design principals : Vertical separation between cables will be a minimum of 300mm in addition to burial depths of the first cable; The minimum mattress thickness will be 300 mm and constructed of high-density concrete; Pre lay mattress(s) will be installed over the pre-installed (buried) cable perpendicular to the direction of the lay of the crossing cable; Top mattresses or rock armour will be installed (subject to crossing agreement), which will cover approximately 50 m on each side of the first cables; The profile of crossing will not reduce navigable depth by greater than 5% of surrounding charted depths referenced to chart datum; The horizontal crossing angle will be between 60 – 90° but will endeavour to achieve as close to 90° as possible.											X								
Use of trenchless technology at landfall, cables will be installed by trenchless installation technique beneath the intertidal zone and cliffs at landfall. Exit pits will be located within the offshore ECC seaward of the Mean Low Water (MLW) at a point/depth where cable installation vessels can operate. No cable protection will be used inshore of the exit pits. During excavation of the exit pits, material will be stored to minimise loss of sediment as far as is reasonably practicable	X		X					X											
Disposal of spoil from TSHD generated by seabed preparation (for foundations and cables) works to be redeposited in the project area within areas of similar sediment type, and in areas where current speeds are such that dredged material would be redistributed into the sediment transport system.	X			X				X											
Backfill of sediment trenches where IACs are to be installed perpendicular to the Kish and Bray Banks, requiring trenching works across the banks. Whilst the trenches are open, sediment will be stored temporarily alongside the trench and utilised as backfill material. Measures will be taken to ensure sediment is not lost prior to backfilling including minimising the duration of time the material is stored and the distance the deposited material is located from the excavated trench..	X							X											
Scour protection measures, options include rock protection or concentrated mattresses, flow energy dissipation devices, protective aprons or bagged solutions	X	X	X	X				X											
Applicant will implement the following, in line with the Sea Pollution Act 1991 and MARPOL convention and other similar binding rules and obligations imposed on ship owners and operators by inter alia the International Maritime Organisation as relevant: Marine Pollution Contingency Plan to cover accidental spills, potential contaminant release and include key emergency contact details (e.g., the Irish Coast Guard (IRCG) and will comply with the National Maritime Oil/ HNS Spill Contingency Plan (IRCG, 2020). Measures include Storage of all chemicals in secure designated areas with impermeable bunding (up to 110% of the volume); and double skinning of pipes and tanks containing hazardous materials to avoid contamination.		X	X	X	X			X	X	X						X	X		X

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Waste management and disposal arrangements - the developer will dispose of sewage and other waste in a manner which complies with all regulatory requirements, including but not limited to the IMO MARPOL requirements		X	X	X	X			X											
During the lifetime of the project the Applicant and its contractors will comply with all measures outlined in the Marine Biosecurity Plan to include: All vessels of 400 gross tonnage (gt) and above to be in possession of a current international Anti-fouling System (AFS) certificate; Details of all ship hull inspections and biofouling management measures be documented by the Contractor. All vessels to be compliant (where applicable) with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention, developed and adopted by the International Maritime Organisation (IMO)		X	X	X				X											
A code of conduct will be implemented by all vessel operators when encountering marine species. In addition, vessel movements to and from construction sites and ports will, where feasible, follow existing routes. While these measures are primarily targeted towards marine mammals and birds at sea, they would equally reduce the risk of injury and disturbance to marine turtles and other larger mobile receptors, such as basking sharks.				X	X			X											
Provision for reporting and recovery of dropped objects where they pose a potential hazard to other marine users										X									
Navigational safety measures including: Compliance with COLREGS and SOLAS; Marine coordination; Temporary lighting and marking; Operational lighting and marking; Use of guard vessels; Advisory safe passing distances; Charting of infrastructure; Emergency Response Cooperation Planning.					X				X	X	X						X		
Promulgation of Information via Notice to Mariners and other appropriate media including Fisheries Liaison Officer (FLO). Includes circulation relevant Leisure Almanac.										X									
Appropriate health and safety including IMO conventions and Health and Safety Authority (HSA) requirements, and suitable vessel certification in line with MSO requirements										X									
Measures to facilitate co-existence and co-location with the commercial fishing sector through effective consultation and liaison including: Use of a Fisheries Liaison Officer; Fisheries support vessels; Marine coordination team; Marine notices									X										
Marking and lighting offshore infrastructure in accordance with relevant industry guidance and as advised by relevant stakeholders including in accordance with IALA G-1162 (IALA, 2021) and Irish lights requirements. In particular, the use of marine lighting to mark selected peripheral structures. All structures associated with Dublin Array will be adequately marked on nautical and electronic charts.									X	X									
Project design was completed in compliance with the standard MGN 654. Includes the requirement to consult with MSO and Irish Lights in the event that water depths are reduced by more than 5% as a result of cable protection or other infrastructure, to ensure that navigational risk is minimised									X	X									
Agreement of Emergency Response Plans with relevant parties (IRCG) in the form of an Emergency Response Cooperation Plan in IRCG template.										X		X							
Minimum WTG blade clearance of 28m above MHWS, (31.6 LAT) (exceeds minimum of 22m above MHWS which is a requirement of guidance on navigational safety)						X		X		X									
The maximum blade tip height of the WTGs has been restricted to 309.6 m LAT to remain below published IFPs												X							
Commitment to undertake vessel traffic validation by AIS during the construction phase as required under MGN 654 to ensure the NRA for the project is accurate for all phases and that predictions made in the NRA with regards to traffic patterns are accurate										X									
Prior notification through Notice to Aviators (NOTAM) of construction and decommissioning together with the notification and charting of the array area prior to and during the operation and maintenance phase will enable aviators to be aware of the location and development parameters (height, lighting)												X							
The fitment of appropriate aviation lighting will enable the obstruction to be visually acquired and avoided by aircraft												X							
Crane operation will be conducted under a Licence issued by the appropriate authority												X							
Licences will be obtained under the National Monuments Acts 1930-2014 for all relevant geotechnical surveys, archaeological dive surveys, ROV surveys, hand-held metal detection surveys and intertidal surveys. Results will be assessed and reported by a suitably qualified archaeologist.													X	X					

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Measures to avoid impact on known archaeological receptors include: Compliance with Underwater Archaeology Unit Guidelines; Implementation of archaeological exclusion zones; Liaison with DHLGH through circulation of full method statement; If required material will be moved or removed from the seabed, a watching brief (undertaken by an appropriately qualified and approved archaeologist)													X	X					
Measures to prevent impact on unknown archaeological receptors include: -Protocol for Archaeological Discovery ; -Geoarchaeological assessment of deposits of archaeological potential, following an approved method statement will be undertaken, results will be assessed and reported by a suitably qualified archaeologist. -If required material will be moved or removed from the seabed, a watching brief (undertaken by an appropriately qualified and approved archaeologist)													X	X					
Pre and post construction monitoring activities will be undertaken, to support these a monitoring plan will be developed, all relevant activities will be licensed under the National Monuments Acts 1930-2014 and the results will be assessed and reported by a suitably qualified archaeologist.													X	X					
Iterative layout design and site selection. The offshore WTGs of Dublin Array will be located a minimum distance of approximately 9 km off the eastern coast of County Dublin and County Wicklow, largely determined by presence of sand banks and shallow waters in this location which present a major technical advantage in terms of the construction of the offshore infrastructure, as set out in Volume 2: Chapter 2.5: Site Selection															X				
Impact piling of a single pile will occur at any one time, i.e. no simultaneous impact piling will occur.				X	X			X											
Observe SAR lanes between discrete rows of wind farm structures of a minimum of 500 m width on a consistent line of orientation										X									
Agreement with Uisce Éireann on separation distances between the Shanganagh Waste Water treatment outfall and Offshore EEC to ensure no direct overlap with existing long sea outfalls											X								
Engagement with Irish Lights on any project vessel activity occurring within 500 m of the centre point of the Kish Tower											X								
Further engagement with telecommunications service providers - Dublin Array will further engage with telecommunications service providers during the detailed design process for the wind farm. Further engagement will be undertaken when confirmed turbine locations and sizes are known and the need for any further protocols is established. Measures may comprise a 2rn protocol agreement.											X								
Implementation of FMMS, including cooperation agreements and associated payments									X										
Implementation of FMMS; gear trials to access practicality of potting activity resumption; monitoring of catch rates within array area									X										
Participate in the Seafood / ORE Working Group, including commitment to joint development and implementation of cumulative mitigation approaches									X										
Consultation direct with recreational race operators to ensure minimal displacement. Entry/exit points to the array area for vessels associated with the construction and decommissioning phases Designated routes to/from array area for vessels associated with the project which avoid crossing main routes at the south west corner of the site. Where practicable, vessels operating on Dynamic Positioning (DP) will be used. If vessels using anchor spreads are required, the anchors (and hence marker buoys) will not be placed in the inshore shipping routes (Routes 3 and 7 percentiles) Mandatory carriage of AIS for all vessels associated with the project										X									
Use of temporary lighting on all structures during construction (noting requirements for decommissioning phase will be discussed with Irish Lights prior to commencement of decommissioning activities). Procedures for management of AtoN to be discussed with Irish Lights. Consultation with Irish Lights with regards to the need for alteration of existing buoyage positions										X									
Array design with consideration to SAR access in consultation with IRCG and RNLI including consideration of MGN 654 Cooperation agreements with IRCG in terms of emergency response procedures and agreement of a SAR checklist.										X									
Discussions with Irish Lights and MSO prior to decommissioning to determine any additional mitigation needed for subsea cables post decommissioning.										X									
Communications Plan with Dublin Port.										X									
Engagement from the Applicant with Irish Lights on any project vessel activity occurring within 500 m of the centre point of the Kish Tower.										X									
Consideration given to consultation with fishing users on cable burial risk assessment										X									

Table 2 Onshore Schedule of Commitments

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
Using trenchless technology (HDD or Direct Pipe) at the Landfall Site to avoid impacts to the sedimentary sea cliffs at this location and minimise impacts on the shingle and gravel shoreline.	X		X								
Using trenchless technology (HDD or similar) to cross rivers along the onshore ECR to reduce impact on the riparian river corridors, with the exception of trenched crossings of the drainage ditches Glenamuck North stream and Jamestown 10 in Sector 7.	x										
Where crossings are necessary these will be crossed by trenchless techniques, with the exception of crossings in Sector 7.	X	X									
For trenchless crossings (TX-02/TX-04/TX-05/TX-06/TX-07), temporary drilling compounds will be established on either side of the watercourse to facilitate the set-up of the necessary plant and equipment. Limited surface excavation works will be required to create the launch and exit pit in the temporary drilling compounds. The excavated drill pit will collect drill mud returns, the pumps will move the fluid from the pit into the recycling plant/tanks.	x	X	X								
Two open cut trench crossings of the small streams south of the Carrickmines Retail Park (Glenamuck North and Jamestown 10 streams). The water flows will be managed through use of a temporary dam to hold back waters with over pumping of the water downstream to enable the construction of the trenchless crossings. The open cut crossings will be subject to agreement with IFI on a method statement and further details of the crossing points	x	X									
The grid connection between the proposed OSS and the existing Carrickmines substation will cross the Carrickmines Stream within existing infill ground sitting above an existing culvert of the stream. An open cut trench method will be used for the installation of the cable in this location.	X	X									
Construction works will be set back from the river and stream channels, except for the two open-cut trenched crossings at Sector 7, and where it is not possible to maintain an adequate set back, suitable measures to prevent run-off from entering the watercourse (such as temporary interceptor drains) will be used to prevent runoff going to the watercourse. Additional control measures such as silt fences will be deployed.	X	X									
Fencing will be erected around the temporary trenchless crossing compound and will not encroach the precautionary zones / RPA of any of the trees comprising Loughlinstown Woods proposed Natural Heritage Area (pNHA).	x										
There will be no demolition of O&M buildings during the nesting bird season (March to September inclusive).	x										
Vegetation which could support nesting birds (e.g. trees, scrub or long grass) will be cleared outside the main bird breeding season (March to August inclusive) to avoid damage to, or destruction of nests.	x										
Suitable fencing will be erected between the boundary of the Locally Important Biodiversity Sites (LIBS) and the boundary of the nearby TCC with signs stating "Sensitive Biodiversity Area" to avoid accidental damage or loss of the habitats attributed to the LIBS.	x										
High value habitats such as woodland, hedgerows, and treelines, will be protected from direct impacts in areas where HDD is proposed rather than trenching, thus avoiding further unnecessary reduction in habitats.	x										
The habitats of highest value for birds have been retained through the route design and any habitats that are directly impacted will regenerate naturally or will be reinstated.	x										
A verification survey for Black guillemot will be conducted at St. Michael's pier in the breeding season immediately prior to the commencement of the construction of the O&M Base to confirm their continued absence. Further mitigation may be required in the event that this species is confirmed breeding in this location.	x										
Shorebird surveys will be conducted following the completion of the proposed development to monitor the shorebird assemblage populations following the completion of the project. This will inform potential future impacts for similar developments.	x										
The habitats of highest value for bats will be retained through the avoidance of these areas in the route selection process for the OES and any habitats that are lost will be replanted, where possible.	x										
Where possible lighting installations will be directed away from trees, known bat roosts and retained habitats for bats (including trees identified as T14 & T15 in Sector 2 along the onshore ECR).	x										
A survey of T14 and T15 trees will be undertaken at an appropriate time in the bat roosting season, at the earliest available opportunity.	x										
A sound barrier will be erected to protect potential roost locations in T14 and T15 from potential effects of noise. This will also benefit the potential bat roosts by preventing accidental illumination of these potential roost sites.	x										
An NPWS derogation licence for the disturbance and potential loss of trees T14 and T15 in Sector 2 will be acquired if a bat roost is identified. Alternative roosting provisions must be in place prior to the loss of these trees (if required).	x										
Enhancement for bat will be achieved through the provision of bat roosting boxes to compensate for any potential harm to T14 and T15. These will be located on suitable retained trees within Eurofound land, in agreement with landowners.	x										
Direct impacts on streams and associated riparian habitat will be avoided as cable installation will predominantly use trenchless technology such as HDD.	x	x									
Two streams in Sector 7 will require open-cut trenching. Where in-stream works for the cable installation are required in Sector 7, the method statement will be agreed in consultation with IFI & in-stream works will be limited to July - September as per IFI's guidance.	x	x									
Habitats likely to support significant numbers or notable invertebrates (comprising unmanaged grasslands, hedgerows, scrub, fragmented areas of woodland and the freshwater habitats), and that will be retained, will be appropriately protected throughout the construction phase.	x										
Habitats will be reinstated following the completion of the construction phase.	x										

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
Habitats likely to support significant numbers or notable invertebrates (comprising grasslands, hedgerows, scrub, fragmented areas of woodland and the freshwater habitats), and that will be impacted by construction activities, will be allowed to naturally regenerate following the construction phase, where possible. Additional planting using species with known ecological benefits. At the OSS, a Landscaping Plan is proposed which will include tree planting mix covering and a wildflower meadow to the north-east of the site.	x			x							
A planning stage CEMP has been included with the application for development consent and is included in Volume 7, Appendix 8. The purpose of the planning stage CEMP is to set out the measures which will be taken to manage the potential environmental impacts of the onshore construction of Dublin Array and limit the disturbance from onshore construction activities such as site preparation, material delivery and removal, works activities and site reinstatement as far as is reasonably practicable. The CEMP is a planning stage document that, by reference to the assessments reported in the Environmental Impact Assessment Report (EIAR), sets out the key construction stage environmental commitments. The Final Construction Stage CEMP will be sent by the Applicant to the Planning Authority for approval, as a condition of the development consent.	x	x	x			x	x	x			x
Protective fencing will be installed around retained habitats of importance to prevent accidental encroachment, loss or damage to retained habitats during the construction phase.	x			x							
An Ecological Clerk of Works (ECOW) will be employed to oversee construction at key ecological sensitive locations to minimise risks to IEFs.	x	x		x							
Habitats will be reinstated, or allowed to reinstate naturally, following the completion of the construction phase.	x	x		x							
Pre construction verification survey will be undertaken in advance of tree or vegetation clearance to check for the presence of nesting birds, badger setts, hedgehogs, amphibians, or other protected species will be carried out by suitably qualified Ecologist. Additional reasonable avoidance measures will be implemented and appropriate NPWS licences will be acquired in advance where necessary.	X										
Vegetation which could support nesting birds (e.g. trees, scrub or long grass) will be cleared outside the main bird breeding season (March to August inclusive) to avoid damage to, or destruction of nests.	X			x							
The Inland Fisheries Ireland (IFI) Guidelines on the Protection of Fisheries during construction works in or adjacent to waters (2016) will be implemented.	x	x									
Where in-stream works for the cable installation are required in Sector 7, the method statement will be agreed in consultation with IFI & in-stream works will be limited to July - September as per IFI's guidance	x	x									
In-stream works will be timed to avoid critical periods to salmonids (1 October to 31 April).	x	x									
Refuelling of plant and equipment will be at a distance of greater than 50m from a watercourse.	x	x	x								
The construction phase management measures will follow the relevant CIRIA guidelines, CIRIA C648, Control of Water Pollution from Linear Construction Projects.	x	x	x								
Designated location for plant and vehicle washout will be established with adequate storage capacity.	x	x	x								
Washout water will be stored in the washout area before being transported offsite or treated.	x	x	x								
Appropriate sediment control measures will be installed.	x	x	x								
Surface water ingress into open trenches will be limited through measures such as directing surface water drainage away from excavations.	x	x	x								
Fuel and chemical storage will be stored in storage units with 110% bunding storage	x	x	x								
In addition to the CEMP, construction management measures will include the provision of an Emergency Incident Response procedure which will be prepared and deployed in the event of an emergency event.	x	x	x			x					
The CEMP details measures for dust suppression, which will minimise the main adverse effects caused during the construction phase. Such measures will include the following: - During hot, dry weather a water bowser will be used to control dust arising from the access track; - A wheel cleansing will be operated within the site to ensure materials from the construction sites are not transferred onto the highway, - Road cleaning will be undertaken when required to remove any deposits that are carried from the construction locations. It is anticipated that any road cleaning activities would remain local to the site access.	x					x		x			
In advance of construction pre-construction verification faunal surveys will be undertaken to identify the presence of badger setts on the study area.	x										
Excavations will be covered overnight or a ramp provided to prevent the accidental entrapment of badgers.	x										
Where possible and safety considerations allow, fell trees away from badger setts and avoid blocking any badger pathways.	x										
Where possible lighting installations will be directed away from any identified badger setts.	x										
Store chemicals where they cannot be accessed by wildlife.	x										
If required, plant dense native shrubs around setts to provide added protection (e.g., gorse, blackthorn, holly and elder).	x										

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
<p>If any active badger setts are identified:</p> <ul style="list-style-type: none"> - The implementation of a 50 m buffer will be instigated and appropriate mitigation will be advised by the Ecological Clerk of Works. - An NPWS derogation license would be sought from the NPWS for any disturbance. - No heavy machinery will be used within 30 m of the sett entrance or light machinery within 20 m (unless carried out under licence); - Badger setts will be protected from all works through a 50 m buffer during the breeding season (December to June inclusive). - All contractors/operators will be made fully aware of any new badger setts identified. Fell trees away from badger setts and avoid blocking any badger pathways; - Direct any security lighting away from setts. 	x										
Sett 1, located in Sector 2, will be monitored for a period of 5-days (minimum) immediately prior to the construction phase starting to verify and check that it is still disused. If it is found to be active then a derogation licence will be required for disturbance and sett closure due to its proximity to the proposed construction area. If found to be active, sett 1 will require temporary closure using one-way gates to avoid the accidental harm to badgers during the construction phase. Following the implementation of the one-way gates, the sett will be monitored for a minimum period of 21-days, to ensure that all badgers have vacated the sett. The gates will be removed following the completion of all construction activities within 30 m of this sett.	x										
Identified hedgehogs will be moved to a nearby area of similar/suitable retained habitat.	x										
Maintain high standard of house keeping during the construction operations.	x										
Pre-construction verification otter surveys will be conducted no more than 10-12 months in advance of construction commencing. This will ensure that there will be sufficient time to comply with all licensing and additional mitigation requirements (e.g., holt exclusion and/or the creation of artificial holts). Where holts are found to be inactive, they will be destroyed immediately using a mechanical digger, under the supervision of the holder of the NPWS derogation. Where holts are found that are likely to be disturbed, their activity level will be assessed to verify whether they are active or inactive.	x										
Retained habitats of value to otters (e.g., riparian woodlands and riverbanks) will be protected from accidental damage or removal by protected fencing.	x										
General construction-related reasonable avoidance measures to avoid impacts to badgers detailed above will also benefit otters.	x										
HDD or similar trenchless techniques will be implemented at trenchless crossings to avoid impacts to watercourses and associated riparian habitats which may support otters and their holts. Furthermore, the work of multiple HDD crossings simultaneously will be avoided (i.e., work on one HDD crossing at a time) to avoid creating multiple vectors of noise and disturbance and allow otters to naturally migrate away from a disturbance in either direction.	x										
If an otter holt is identified within 150 m of proposed works (NRA, 2008), a NPWS license will be secured to progress with required mitigation measures.	x										
A minimum 150 m buffer zone will be implemented around known otter holts with protectional fencing, where appropriate to protect against the accidental encroachment of construction activities and staff into the location of the holt. Any works encroaching this buffer will require a derogation licence from NPWS.	x										
Exposed ducts and pipes stored onsite will have the ends covered to prevent mammals becoming trapped; excavations will either be covered overnight and a ramp provided to prevent the accidental entrapment of otters.	x										
Where possible lighting installations will be directed away from the water courses and associated riparian habitat.	x										
A planning stage Invasive Species Management procedure (ISMP) is included in Volume 7, Appendix 8 : CEMP. The measures will be undertaken to avoid the uncontrolled spread of IAS that are present within the following areas of the project: <ul style="list-style-type: none"> • The landfall • Sector 1 • Sector 2 • Sector 7 • TCC areas 	x										
A pre-construction verification survey will be undertaken to locate the presence and distribution of IAS within the study area.											
An appropriate buffer will be used to cordon off invasive species outside the works footprint.	x										
Species-specific IAS treatment measures during the construction phase are detailed further in Table 28 of the Biodiversity Chapter and will be followed during construction.											
Remedial actions during the construction phase will be implemented to ensure that the IAS does not regrow.	x										
All construction work will be undertaken in accordance with the CEMP (Volume 7) and relevant good practice guidance, including Construction Industry Research and Information Association (CIRIA) Control of water pollution from construction sites – Guidance for consultants and contractors (C532) (CIRIA, 2001).		x									
No discharge to main river watercourses will occur without permission from EPA (Local Authorities Services National Training Group)		x									

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
Suitable fencing will be erected around any areas of Dry calcareous grassland (GS1) this habitat to prevent the accidental access by heavy machinery or storage of construction materials. Necessary losses or damage (e.g., caused by heavy plant used during the construction phase) will be minimised and retained areas will be protected from incidental damage or nutrient increase. Where damage does occur to this habitat, reinstatement planting through a suitable native wildflower seed mix planting, or seedbank collection, storage and replanting, following the completion of the construction phase.	x										
Necessary losses or damage (e.g., caused by heavy plant used during the construction phase) to areas of dry meadow habitat will be minimised and retained areas will be protected from incidental damage or nutrient increase. Areas of this habitat that is to be retained and located adjacent to the proposed development area will be protected through the erection of Heras fencing to prevent the accidental encroachment of works activities into the retained habitat. The habitat will be replanted following the completion of the construction phase; however, this would require time to meet the condition of the habitat that is lost/damaged. A suitable seed mix will be used for replanting to avoid the risk of a less biodiverse grassland being created. Reinstatement planting will be created within the lost grassland habitat (as shown on the OSS Landscaping Plan, Drawing 229100714-MMD-00-XX-DR-C-0250), subject to agreement with DLRC.	x										
Reinstatement planting will provide additional hedgerow relative to the baseline.	x										
Necessary hedgerow losses will be minimised and retained areas will be protected from incidental damage. Retained hedgerows located close to construction activities (e.g., within 10 m) will be appropriately protected during the construction phase through the erection of suitable fencing (e.g., Heras fencing). This will include their RPA, which will protect potential harm from soil compaction by heavy machinery and materials. The full extent of potential losses will be replanted/reinstated, using suitable native woody species. Dead hedging will be implemented where losses to this habitat are necessary. This will involve putting the cut branches and foliage from necessary hedgerow removal back. New hedgerow will be created surrounding the proposed OSS to reinstate for the loss of c. 10 m hedgerow during the construction phase (refer to the Landscaping Plan shown on Drawing 229100714-MMD-00-XX-DR-C-0250), subject to agreement to be agreed in consultation with DLRC.	x										
Necessary losses of mature woodland will be minimised and retained areas will be protected from incidental damage. The full extent of potential losses will be replanted/reinstated with tree planting.	x										
The cliff area will be appropriately protected from accidental damage from construction works with fencing at both the upper and lower levels, where appropriate, to ensure that no heavy machinery or plant can encroach close to the cliffs where accidental erosion or damage may occur.	x										
Construction access to the shoreline will be limited and will only occur within demarcated areas which will be selected in order to minimise direct impacts on this habitat type. Least sensitive areas will be prioritised.	x										
Low levels of artificial lighting will be employed at the O&M Base during the construction phase during the hours of darkness for safety and security reasons. A detailed lighting scheme design will be undertaken as part of the detailed design and motion sensor lights will be used to ensure lighting on site is minimised only to when required.	x										

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
<p>Giant hogweed</p> <p>The following general recommendations for giant hogweed will be adhered to as part of the plan.</p> <ul style="list-style-type: none"> • Giant hogweed contains phototoxic sap which presents a serious health hazard to humans. A risk assessment will be prepared in advance of control measures and all site personnel will be made aware of the risks associated with the plant; • Only competent and qualified personnel will be tasked with controlling giant hogweed, and they must wear personal protective equipment (PPE) including protective clothing, gloves and goggles or glasses; • Where giant hogweed is present on public land, the area will be cordoned off and a sign explaining the risks of giant hogweed will be placed; • Giant hogweed reproduces and spreads through seeds. Therefore, any physical control measures must only be employed before the plant has started to seed to prevent further spread. The plant does not reproduce through vegetative means; and • Equipment, clothing and footwear will be checked following treatment operations and cleared of fruits/seeds as necessary. <p>In addition five options for control of giant hogweed have been proposed. Any one or a combination of these five options will be used to eradicate giant hogweed from the OES and avoid the spread of the species:</p> <ol style="list-style-type: none"> 1. Cut the roots using a sharpened spade. The root will be cut at least 10 cm below soil level, but it may be required to cut further down (i.e. up to 25 cm) if additional soil is covering the plant. The plant will be removed from the soil and either destroyed or left to dry out. Such soil and all vegetative material should not be stock-piled within 10m of any watercourse due to the risk of material being transferred by water. Cutting should take place in early spring and repeated in mid-summer. This method results in immediate death of the plant. However, it is not suitable for small plants and does not deal with the seed bank, therefore monitoring will be required to check for regrowth. 2. Pull the roots by hand. This method will only be used for small plants and seedlings as hand pulling large plants is likely to break the stem and leave the root intact. 3. Stems will be cut using a scythe. This method will be used before the plant has started flowering. Regrowth will occur from the base, so cutting should be repeated two to three times during the growing season. When repeated carefully, this method will deplete nutrient reserves and eradicate the population in several years. 4. Cut the flower heads. This method will be suitable for small plants. Cutting the plants in early to late summer will prevent seed production, but if the plant is cut too early it will stimulate production of secondary stems which can flower later in the season. Plants subject to flower head removal have a high potential to regenerate and produce new flowers, therefore it is recommended to use other means of physical control in the first instance. Flower head removal should only be used as an improvised solution where no other methods of control have been attempted earlier in the season and it is too late to employ these methods. The cut umbels must be collected and destroyed. 5. Use chemical control. The only herbicide recommended for control of giant hogweed is glyphosate. Glyphosate will be applied in early March or early April before the stem has fully elongated, and again in September to kill any regrowth or seedlings. Where sensitive native vegetation is present, herbicide will be injected into the stem as an alternative to spraying the plant. Herbicide application will not kill the seed bank, therefore monitoring and herbicide applications must be repeated annually over three to five years. 	x										
<p>Japanese knotweed</p> <p>Prior to the construction phase/excavations at the Site, the following bio-security measures will be in place at the site:</p> <ul style="list-style-type: none"> • A 7 m exclusion zone, measured horizontally from the nearest visible Japanese knotweed plant, will be established around all areas infested by Japanese knotweed; • Where part of the exclusion zone encroaches onto an active public access, or beyond a site boundary, this section of the exclusion zone will be positioned as close as possible to the boundary; • The exclusion zone will be delineated with a secure temporary construction fence, such as Heras panels or timber post and netting, and be fitted with appropriate warning/advisory signage; • Fencing will remain in place for the duration of construction works, and while the stand is being treated, allowing the rest of the fencing to be constructed. No fencing will be erected within this exclusion until treatment is completed and no new growth is detected; and • Signs will be placed on the fence to advise site personnel that the area contains Japanese knotweed material, and that bio-security measures are actively in force. <p>Following this, all stands of Japanese knotweed will be controlled through a combination of physical and herbicide over a period (typically 3-5 years), until no growth is observed.</p>	x										

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
<p>Montbretia Two options for the treatment of montbretia have been proposed. Either one or a combination of these two options shall be used to eradicate montbretia from the Site and avoid spread of the species: 1.Excavate the entire stand and bury or dispose of to a licenced landfill or incineration facility. This method should be used before the flowering/seeding season to prevent re-infestation from seeds; or 2.Herbicide may be sprayed where the stand is away from native plants and watercourses. Wiping leaves with glyphosate will provide an accurate application to isolated plants and prevent damaging adjacent non-target plants via spray drift. A qualified and experienced contractor will be employed to carry out herbicide treatment, as described for giant hogweed. Any reproductive plant material will be carefully disposed of following NRA (2010) guidelines. Any equipment used will be inspected and thoroughly cleaned, as will the footwear and clothing of operatives removing invasive species material. Any material arising from cleaning of equipment and footwear will be disposed of in a manner which will not cause the spread of invasive species.</p>	x										
<p>Three-cornered garlic Three options are provided below for the removal of this species. Either one of a combination of these three options shall be used to eradicate three-cornered garlic from the Site and avoid spread of the species: 1.Manual removal of bulbs is suitable for isolated plants. The bulbs will be disposed of by crushing or incineration. Removal must be repeated over several years in spring and autumn to ensure a high level of control; or 2.Use herbicide application. Spraying exposed bulbs with herbicide is suitable for larger areas, but it is likely to damage sensitive native fauna. Wiping leaves with glyphosate will provide an accurate application to isolated plants and prevent damaging adjacent non-target plants via spray drift. The most effective time to apply herbicide is at the bulb exhaustion stage, which normally occurs at early flowering. Three of the 11 locations where three-cornered garlic was recorded are near watercourses. As for giant hogweed, a licence is required for herbicide application and there are constraints for use around watercourses. Undertake mowing. This option is suitable where three-cornered garlic is growing on grassland or roadside verges and has not started to flower. The area should be mowed as low as possible before flowering and repeated a few weeks to control regrowth. This method should not be used if the plant has gone to seed because mowing can facilitate the spread and establishment of this species. Any reproductive plant material will be carefully disposed of following NRA (2010) guidelines. Any equipment used will be inspected and thoroughly cleaned, as will the footwear and clothing of operatives removing invasive species material. Any material arising from cleaning of equipment and footwear will be disposed of in a manner which will not cause the spread of invasive species.</p>	x										
<p>The operational lighting scheme for the OSS has not yet been decided. To avoid adverse impacts to nocturnal species, all lighting will be designed to limit light spill and ensure that it is targeted downwards. The use of Lux levels will also be considered. Where possible, all lighting will be directed away from important retained habitats such as river habitats, woodland, scrub, treelines, and hedgerows. Directional lighting will be employed for safety and security only. It is anticipated that there would be no light spill beyond the OSS site boundary and the lighting scheme will follow current guidance to minimise impacts to bat species, (e.g., BCT and Institute for Lighting Professionals (ILP) (2023)).</p>	x										
<p>The installation of the offshore export cable ducts under Shanganagh Cliffs and the beach will be carried out using trenchless techniques. This approach will avoid any excavation of the cliff face thereby protecting the physical integrity of the cliff face to install the offshore export cable ducts. This will avoid any exacerbation of coastal erosion or cliff stability that could be caused by standard open-cut trenching construction methods. Horizontal Directional Drill (HDD) or Direct Pipe Method (DPM) have been identified as the preferred trenchless techniques.</p>	X	x	X								
<p>Trenchless crossing (HDD or similar) will be used for cable installation for the majority of the watercourses along the onshore ECR to avoid adverse impacts on river channels or exacerbation of flood risk. Trenchless technology will be adopted at the following watercourse crossings: • Sector 1: Trenchless crossing of the Shanganagh River (TX-02); • Sector 2: Two trenchless crossings of Kill o’ the Grange Stream (TX-04/TX-05) at Achill Road; • Sector 3: Trenchless crossing of Carrickmines Stream (and N11) at Loughlinstown (TX-06); and • Sector 7: Trenchless crossing of the Laughanstown Stream, which includes the M50 (TX-07).</p>		x	x								
<p>Two open cut trench crossings proposed for the streams south of the Carrickmines Retail Park (Glenamuck North and Jamestown 10 streams). The water flows will be managed through use of a temporary dam to hold back waters with over pumping of the water downstream to enable the construction of the trenchless crossings.</p>		x									
<p>The grid connection between the proposed OSS and the existing Carrickmines substation will cross the Carrickmines Stream within existing infill ground sitting above an existing culvert of the stream. An open cut trench method will be used for the installation of the cable in this location. The water flows will be managed through use of a temporary dam to hold back waters with over pumping of the water downstream to enable the construction of the trenchless crossings.</p>		x									
<p>Construction works will be set back from the river and stream channels, except for the two open-cut trenched crossings at Sector 7, and where it is not possible to maintain an adequate set back to prevent runoff going to the watercourse. Additional control measures such as silt fences will be deployed.</p>		x									

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
During Operation of the OSS, the surface runoff will be controlled to match existing greenfield runoff rates using a flow control device and an attenuation basin will store and attenuate runoff. An attenuation tank will be located below ground and have sufficient capacity to prevent flooding during the critical 1:100-year storm event (1% AEP) including + 20% allowance for climate change. The attenuated runoff will be discharged into the nearby Carrickmines Stream. The GIS building at the OSS will feature a green roof.		x									
The O&M Base has been sited outside of either Flood Zone A or B to avoid areas at risk of flooding.		x									
Finished levels on-site for the O&M Base have been designed such that in the event of the surface water system surcharging, surface water can still escape from the site and away from building structures, into the Irish Sea, by overland flood routing without damaging properties.		x									
A green roof has been included in the design of the O&M Building to improve stormwater management and water quality.		x									
The open cut crossings in Sector 7 will involve the installation of a temporary dam at either side of the cable crossing location to create a dry section of the stream to facilitate a dry working area for installation of the cable ducts. Temporary dam methods such as sandbagging, sheet piling or an aqua dam will be used to construct the temporary dam. To maintain the flow of the stream it is proposed to over-pump from upstream of the dam to downstream of the works area. The trench will be then be excavated in the dry area to the required depth. The ducts will be placed, and a concrete surround poured around the ducts with a steel reinforcement mesh set in the concrete above the ducts. Cement bound granular mixture (CBGM) will then be backfilled on top of the concrete surround to the required depth and the riverbed reinstated above the CBGM. The dam will then be removed and the stream returned to its natural state.		x									
Appropriate temporary drainage measures will be implemented as part of the TCC enabling works to manage surface water run-off and prevent water polluted with sediment and/or other contaminants leaving the site. This will include the implementation of measures such as filter drains, silt fencing, soakaways, infiltration trenches and settlement ponds/tanks. Where required the surface water will be stored and removed off-site by a licensed service provider for treatment at a licensed wastewater facility.		x							x		
Appropriate temporary drainage measures will be implemented as part of the OSS TCC enabling works to manage surface water run-off and prevent water polluted with sediment and/or other contaminants leaving the site. This will include the implementation of measures such as filter drains, silt fencing, soakaways, infiltration trenches and settlement ponds/tanks. Where required the surface water will be stored and removed off-site by a licensed service provider for treatment at a licensed wastewater facility.		x							x		
Within the operational drainage design for the OSS, the storm water components been designed in accordance with and comply with the requirements of the Greater Dublin Regional Code of Practice for Drainage Works. The applicant will apply to the local authority for a Section 4 license to discharge treated storm water runoff from the OSS site.		x									
Within the operational drainage design for the OSS, the discharge from the attenuation tank will go through a flow control chamber including hydrobrake or similar which will limit storm water discharge from the site to the greenfield equivalent rate of 3.3 l/s. The discharge line will also include a bypass oil/fuel separator to remove any hydrocarbons in the discharge waters.		x									
The existing surface water drainage network at the O&M Base will be upgraded in the vicinity of St. Michaels Pier and the proposed hardstanding area. The new operational drainage network will tie into the existing oil interceptor in the harbour which will clean surface water run off of all sediment and of any potentially hazardous material prior to discharging the surface water into tidal waters within the harbour. Details of the proposed drainage system are presented in the Project Description chapter.	x	x									
The construction phase surface water management measures will apply the relevant CIRIA guidelines (CIRIA C648 Control of Water Pollution from Linear Construction Projects) and will include the construction activities and water pollution issues: <ul style="list-style-type: none"> Chemicals, fuel storage and refuelling; Site compounds; Dewatering; Horizontal directional drilling (HDD); Runoff and sediment control; Earthworks; Floodplain works on/in; Topsoil stripping and reinstatement; Watercourse crossing works on/near; Water discharge; and Water treatment. 	x	x	x								
The surface water control measures which will be implemented during the construction phase will be subject to routine visual inspection with appropriate maintenance undertaken as identified and required to ensure that the management measures are effective.		x									
Refuelling will only take place at the main TCC locations (Landfall Site, Clifton Park, Leopardstown) the site of the proposed OSS and the proposed O&M Base and would be undertaken in strict accordance with the Construction Environmental Management Plan (CEMP).		x	x								
Hazardous material, found during the construction phase, will be stored in a safe and secure manner whilst waiting to be removed from site by authorised waste contractor and brought to a licensed facility.			x			x					
Hazardous materials to be used on site will be securely stored with records and labelling/signage indicating contents.			x			x					
Hazardous materials will be secured in suitable storage receptacles and the MSDS records stored and requirements supplied by the manufacturers.			x			x					

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
The land impacted in the construction phase will be reinstated to their previous above-ground land use. The only exception to this is the access track used to access cable joint bays in in green field north of the Beckett Road in Sector 4, east of the M50 and a number of joint bay locations in soft ground.			x								
In order to reduce the risk of localised erosion (and potential dust emissions) during the excavation and infilling, the area of bare or exposed soils and rock will be kept to a minimum, insofar as practicable, by progressive restoration of final and backfilled surfaces. Where required, stockpiled soils (pending re-use) or exposed surfaces (pending further backfilling to final ground level) will be temporarily covered.			x					x			
Any waste material from trench excavation which is not suitable for re-use will be removed and disposed of at a licensed disposal facility in compliance with waste management regulatory requirements.			x								
Trenchless installation techniques involve drilling at a minimum depth of 20 metres below the cliff edge and minimum 10 metres below the cliff base with either end of the drill profile set back sufficient distances (landside approximately 90 metres and seaside a minimum of 600 metres) from the cliff face to maintain the integrity of the cliff morphology within the limits of the longitudinal profile limitations of the technique being employed.			x								
Pre-construction verification vibration monitoring will be undertaken in the vicinity of the cliffs as part of the detailed design to gather background data on vibration levels under normal conditions in advance of commencement of any drilling activity. This data will be examined to establish a suitable vibration limit which will be maintained during drilling to ensure the integrity of the cliffs are maintained. Vibration monitoring points will then be undertaken in the vicinity of the cliffs for the duration of the drilling to inform the drilling management process thereby protecting the integrity of the cliffs.			x								
Refuelling of mobile plant will be undertaken using double skinned bowsers.		x	x								
Potentially polluting, or hazardous substances (or any associated wastes) will be stored within TCCs. Potentially polluting or hazardous materials will be stored under cover, over fuel spill trays / bunded containers within designated storage areas.		x	x								
Good site management practices will be implemented to reduce risks of spills, including regular monitoring and inspection of storage vessels and regular maintenance and servicing of construction plant and equipment.		x	x								
Plant and equipment used in construction will be in good working order and comply with the CEMP.		x	x								
Contingency plans/procedures will be developed to adequately respond to potential spills. Emergency spill equipment will be made appropriately available on site.		x	x								
When an accidental spill results in contamination of soil, the extent of contaminated soil or subsoil will be identified and removed to a waste licenced facility for appropriate disposal.			x								
Drilling mud will be monitored at all stages of the drilling operations to ensure that no loss of fluid occurs down the bore. This monitoring will be undertaken by the drill rig operator and the drill mud engineer on site.		x	x								
Any remaining drilling fluids and cuttings from the mud recycling system will be disposed of in compliance with the Waste Management Act 1996 as amended. The recycling unit will be dismantled and removed.		x	x								
Ensuring that any refuelling of mobile plant undertaken is only undertaken using double skinned bowsers located either within the site of the OSS or the O&M Base.		x	x								
Fuel oils and chemicals will be stored under cover, on trays or in bunded containers in designated storage areas.		x	x								
Good site management practices will be implemented to reduce risks of spills, including regular monitoring and inspection of storage vessels and regular maintenance and servicing of any plant and equipment.		x	x								
Contingency plans/procedures will be developed to adequately respond to potential spills. An emergency spill equipment will be appropriately available on site.		x	x								
When an accidental spill results in contamination of soil, the extent of contaminated soil or subsoil will be identified and removed to a waste licenced facility for appropriate disposal.			x								
Routing of the onshore ECR and site selection of the Landfall Site, OSS and the O&M Base has avoided key areas of sensitivity where possible. The proposed O&M Base and OSS are both located within established commercial areas.						x	x				
Potentially noisy construction equipment and plant will be sited away from noise and/or vibration sensitive receptors, as far as reasonably practicable.						x	x				
There will be a preference for the use of construction plant that would emit lower noise levels (such as plant fitted with effective silencers and noise insulation), as far as reasonably practicable.						x	x				
Where possible, works will limit the use of particularly noisy plant at certain times, i.e. do not use particularly noisy plant at night as far as reasonably practicable.						x	x				
A multi-channel communication strategy will be implemented. This will include advance notification of activities likely to generate perceptible noise or vibration, such as trenchless crossings. Notifications will be delivered through targeted communications for key receptors (e.g. residential dwellings) and accessible methods such as a project website. The strategy will ensure adequate notice periods, regular updates, and open channels for addressing community concerns, thereby establishing trust and reducing the likelihood of complaints.						x	x				

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
<p>Noise generated during the construction of the onshore elements of the project will be managed in accordance with BS 5228:2009+A1:2014 'Code of Practice for Noise and Vibration Control on Construction and Open Sites - Part 1: Noise and Part 2: Vibration. This will ensure that noise levels do not exceed the criteria for a Significant Effect (in EIA terms) at any building authorised or lawfully occupied for residential or accommodation purposes at the date of the granting of planning consent, based on threshold values set out in BS 5228**. To achieve this, measures such as appropriately sized acoustic barriers and/or lower noise construction equipment (as outlined in the EIAR) will be implemented, determined through detailed design and final construction equipment specifications.</p> <p>In the event of an emergency, deviations from these criteria may be necessary.</p> <p>**Threshold values are defined in BS 5228:2009+A1:2014, Code of practice for noise and vibration control on construction and open sites. A Significant Effect (in EIA terms) is considered to occur where noise levels exceed these thresholds by more than 5 dB LAeq,T for a period of 10 or more days in any 15 consecutive days, or for a total number of days exceeding 40 in any 6 consecutive months when measured in accordance with BS 5228."</p>						x	x				
<p>Construction works which will be located at Clifton Park TCC for accommodation of the entry pits for TX-01 and TX02 will be undertaken in accordance with BS 5228:2009+A1:2014 'Code of Practice for Noise and Vibration Control on Construction and Open Sites - Part 1: Noise and Part 2: Vibration.</p>						x	x				
<p>A 4 m high wall will be constructed around the full boundary of the OSS, with 4 m high timber gates at the access points. Although primarily included for other purposes, this continuous barrier offers effective noise reduction by blocking direct line-of-sight propagation to nearby receptors.</p>						x	x				
<p>Additionally, an 8 m high fire wall will be installed around the transformers. While its primary function is fire protection, this structure provides significant noise attenuation for these specific noise sources, further minimising potential impacts on sensitive receptors.</p>						x	x				
<p>The temporary acoustic barrier securing the Landfall Site TCC and other noise attenuation measures will be finished in a light grey (e.g. BS 4800:2011 - 10 A 03 Dawn Grey or similar) to reduce the contrast with the surrounding built elements and the sky.</p>				x							
<p>Prioritise location within road corridors, followed by public green spaces; avoidance of private land, as well as trees/mature vegetation, as far as is practicable.</p>				x							
<p>The OSS buildings will have a exterior colour in a light grey colour (e.g. BS 4800:2011 - 10 A 03 Dawn Grey or similar. This colour is similar to other nearby large buildings (e.g. the Carrickmines Retail Park) and will therefore be in harmony with the local environment. The building will have a green roof, which will further reduce its visibility.</p>				x							
<p>Arboricultural works to be undertaken in accordance with BS3998: 2010 Tree work – Recommendations (BS3998) by suitably qualified and insured contractors.</p>	x			x							
<p>The services of a suitably qualified arboriculturist will be retained for the duration of construction works where there is potential for trees to be affected, to support the implementation of all recommendations made.</p>	x			x							
<p>Prior to the commencement of construction works that could affect trees within a particular location along the ECR, an Arboricultural Method Statement (AMS) will be developed for that location in accordance with BS 5837:2012. Trees in relation to design, demolition and construction – Recommendations.</p> <p>The objective of the AMS will be to inform the construction/ development process and protect retained trees during the construction phase. The AMS will be informed by detailed design and produced by a suitably qualified arboriculturist in liaison with the contractor undertaking the works. The AMS will consider the following key elements as a minimum:</p> <ul style="list-style-type: none"> • Protective Fencing <ul style="list-style-type: none"> - Location and specification of Tree Protection Fencing (in line with BS 5837:2012) - Location and specification of alternative protective fencing, if required - Details of appropriate signage demarcating tree protection areas • Construction Exclusion Zones (CEZ) <ul style="list-style-type: none"> - Location of CEZ including detail of suitable demarcation and restrictions that will be in place within these areas during construction • Temporary Ground Protection <ul style="list-style-type: none"> - Location and detail of temporary ground protection measures to prevent soil compaction around tree roots • New Permanent Surfacing within RPAs <ul style="list-style-type: none"> - Location and detail of any new surfacing within RPAs • Canopy Protection <ul style="list-style-type: none"> - Details of measures to avoid damage to tree canopies including staff awareness and pruning to facilitate access for plant and equipment is required. • Use of Hazardous Materials <ul style="list-style-type: none"> - Measures to prevent accidental release of materials hazardous to tree roots within RPAs 	x			x							
<p>Key persons and contractors who could be working along the onshore ECR in areas where there is potential for impact on trees to occur, will receive training by the appointed arboriculturist (e.g. via a tool box talk) on commencement of the construction works. This training, as a minimum, will cover how trees are potentially damaged (above ground and below ground) and the specific protection measures confirmed within the AMS.</p>	x			x							

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
Regular planning by the construction team and the Arboriculturist will be undertaken in advance of scheduled works to review the programme of work and to ensure damage by machinery is avoided to the RPAs the stems and branches of trees to be retained along the ECR.	x			x							
<p>The appointed arboriculturist will be present and monitor any excavation works where roots within the precautionary zone/RPA of trees could be affected along the ECR. The monitoring will seek to determine the amount and size of tree roots present and the extent of severance within the area excavated.</p> <p>An assessment will be made of the future viability of any trees that would incur damage to roots. Tree health, viability and stability will be dependent on the volume of root that would be removed, tree species and local context.</p> <p>Depending on the findings the following approaches will be taken:</p> <ul style="list-style-type: none"> Trees considered unviable in the future: Where a tree's health/vitality is considered to be severely impacted arising from tree root damage and/or the tree is likely to become a health and safety hazard, due to reduced anchorage, it will be recorded and removed within 4 – 6 weeks of the excavation works taking place. The number of trees requiring removal will be reported to the local authority, prior to the works taking place. Replacement planting will be undertaken, in accordance with the DLRCC Tree Strategy 2024-2030. The number, species and location for replacement trees will be agreed with DLRCC. Trees considered viable in the future: The trees that are considered to be able to withstand the amount of tree roots lost, without significant impact on their health/vitality and / or stability will be retained. A monitoring and management plan for each retained tree will be prepared appropriate to the amount of tree roots lost. Measures included in the plan may include soil improvement to foster regrowth of roots, tree pruning to counter balance the loss of roots and long-term monitoring for signs of declining health or stability. 	x			x							
Under supervision from the arboriculturist, any severed roots will be pruned back with a clean cut and any exposed roots will be wrapped to prevent them from drying out. The wrapping will stay in place whilst the roots are exposed. Suitable material will be placed around the roots when the trench is back-filled. These works will be undertaken in line with section 7.2 of BS 5837:2012 (Avoiding physical damage to the roots during demolition or construction).	x			x							
<p>The layout of the Clifton Park TCC, and the trenchless crossing compounds will be designed in liaison with the appointed arboriculturist. Where feasible the layout of the TCC will aim to avoid the precautionary zones/RPAs and canopy spread of adjoining trees. The following measures will be applied, as appropriate:</p> <ul style="list-style-type: none"> Tree Protection Fencing: Where TCCs are located adjacent or in very close proximity to precautionary zones / RPAs, the TCC fencing (including noise barrier fencing), can be used in-lieu of tree protection fencing (as specified in BS5837:2012). Where this is used, appropriate signage identifying an exclusion zone for tree protection purposes will be displayed. Additional fencing may be required, as directed by the appointed arboriculturist. Ground Protection Measures: Where encroachment into the precautionary zones / RPAs is unavoidable, alternative protection arrangements such as ground protection (sufficient to protect the structure of the soil from compaction) may be required. This will be designed in accordance with the requirements of section 6.2.3 of BS5837:2012. Canopy Protection Measures: Above ground equipment (such as containers, drill rigs and noise attenuation fencing), should be arranged to avoid damage to the canopies of existing trees. Where this is not possible, pruning to facilitate access for plant and equipment may be required as advised by the appointed arboriculturist. 	x			x							
<p>Clifton Park TCC (Sector 1): The following potential considerations will be addressed by measures in the AMS which will be informed by detailed design:</p> <ul style="list-style-type: none"> The eastern boundary of the Clifton Park TCC is in close proximity to an established tree line which is located along the DART railway line. The current plan indicates that part of the TCC is likely to be within the precautionary zone / RPA of the trees. The AMS will specify suitable ground protection measures prior to any plant or machinery operating in this area. Any variation in the TCC location will require consideration of the precautionary zone / RPA of the trees along Shanganagh River. 											
<p>The TCC surrounding the trenchless crossing entry pit within Eurofound grounds: The TCC at Eurofound which will facilitate the trenchless crossing to undertake the N11 crossing is located in proximity to several large high-quality trees. The following potential considerations will be addressed by measures in the AMS which will be informed by detailed design:</p> <ul style="list-style-type: none"> Ground compaction from the operation / storage of plant and machinery within the compound and along the access route into it. The AMS will specify suitable ground protection measures prior to any plant or machinery operating in this area Encroachment into the precautionary zone / RPA of some trees, due to the excavations at the HDD entry pit. The HDD bore itself is unlikely to impact on tree roots, as it will be buried more than 60 cm below ground within a short distance of the entry pit. The AMS will specify suitable root protection measures, should these be required. Above ground impact on the tree canopies, in particular due to the proposed noise attenuation fencing along the northern, western and eastern boundary of this TCC. The fencing can function as a protective barrier around the RPAs of trees if sited carefully). Suitable canopy protection measures will be confirmed within the AMS. 	x			x							
Replacement planting will be undertaken in line with Table 6-2 of Appendix 6.5.7-2 Tree Survey Report											

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
Replacement planting will be located in open green space that is under the control of DLRCC and will be agreed with DLRCC in advance of tree removal alongside the quantity, location, tree size and species to be used. . The aim will be for replacement planting to be undertaken in the first planting season following the removal of each of the groups of trees upon completion of construction. The same details for tree planting which will be undertaken to replace existing trees at Eurofound and detail of the quantity, location, tree size and species to be used will be agreed with Eurofound in advance of any tree removal. New planting will consider the existing species mix present within the survey area in relation to both arboricultural and ecological considerations. New planting offers an opportunity to increase the species and age class diversity for a given area which can boost the resilience of the local tree stock in relation to pests, disease and climate change as well as providing a greater range of amenity and other benefits. New trees will be planted in accordance with the minimum distances from new structures, services and surfacing set out in Table A.1 of BS 5837:2012. Tree stock selection, planting methods and planned maintenance will follow guidance as set out in BS 8545:2014 Trees: from nursery to independence in the landscape.	x			x							
The Onshore ECR is located within public roads insofar as is practicable/feasible, which ensures that development will be undertaken within previously developed ground where possible. Development will be undertaken entirely within the application site boundary, thereby ensuring that any sensitive cultural heritage receptors in proximity to the Onshore ECR will be avoided and any significant effects prevented.											x
Archaeology and cultural heritage will include details on archaeological mitigation and Written Scheme of Investigations (WSIs) following discussions with the relevant body/organisation(s). This will be supervised by a qualified and appropriately licensed archaeologist.											x
Construction Hours Restrictions (to the hours of 07:00 and 19:00 Monday to Friday and 08:00 to 14:00 Saturday).						x	x				
Adequate security to prevent, where practicable, access to working areas during construction works.						x					
Ensuring that construction works will be carried out in accordance with all applicable Health and Safety Legislation, including the Safety, Health and Welfare at Work (Construction) Regulations 2013.						x					
Provision of temporary alternative paths where Public Right of Ways (PRoWs) are impacted from the development activities.						x				x	
Vehicle cleaning – a wheel and body wash would be operated within the site to ensure materials from the construction sites are not transferred onto the highway, and road cleaning would take place when required to remove any deposits that are carried from the construction locations. It is anticipated that any road cleaning activities would remain local to the site access.						x		x		x	
Use of trenchless crossing techniques will ensure the following assets can remain operational during construction of the onshore elements of Dublin Array: <ul style="list-style-type: none"> Dublin/Wexford railway in Sector 1. R119 Shanganagh Road in Sector 1 (TX-03). N11 road in Sector 2-3 (TX-06). M50 in Sector 4 (TX-07). Glenamuck District Distributor Road in Sector 6-7 (TX-08). 									x	x	
The onshore ECR will be installed on a rolling basis. Full reinstatement will occur on a rolling basis. Areas of Amenity land will be restored to maintain the current aesthetic appeal and usability of the area for the community, and use matching materials and finishes. Habitats will be reinstated, or allowed to reinstate naturally, following the completion of the construction phase.									x		
A PAS128:2022 compliant utility survey will be undertaken. If the pre-construction utility survey check work identifies existing utilities crossing the site, these will be located on site using an appropriate technique and equipment, such as Cable Avoidance Tool (CAT)/Ground Penetrating Radar (GPR) equipment, and the location clearly set out prior to any site clearance and excavations, so they can be safely exposed and positively identified, worked around or diverted.									x		
Where works are required alongside or crossing a known utility infrastructure, precautions will be implemented by the appointed contractor to protect the infrastructure from damage, in accordance with the requirements of the utility companies, where practicable.									x		
Installation of site fencing, in accordance with ecological, arboricultural and noise requirements, to demark construction site and safeguarding members of the public safety. Traffic management measures, safe pedestrian access together with necessary signage will be provided.									x		
Utility diversions and installation of temporary site drainage where required.									x		
Protection measures during construction will include warning signs and markings indicating the location of utility infrastructure, safe digging techniques in the vicinity of known utilities, and in certain circumstances where possible, isolation of the section of infrastructure during works in the immediate vicinity.									x		
To facilitate construction of the onshore ECR within public land, a road opening licence will be required from DLRCC under Section 13 of the Roads Act 1993. A Traffic Management Plan (TMP) will be approved by DLRCC in advance of works commencing on site. The TMP will outline the location of traffic management signage, together with the location of any necessary road closures and the routing of appropriate diversions. Where diversions are required, these will be approved by DLRCC in advance of the preparation of the TMP.									x	x	

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
Welfare facilities at construction sites will be provided with portable toilets which will be maintained by an approved contractor, and the waste will be disposed of to a licensed facility.										x	
Due to the presence of the existing 110 kV Overhead Line (OHL) at the site of the proposed OSS a temporary safety exclusion zone will be installed around the OHL during construction. The exclusion zone will be set back 10 m from the edge of the OHL and will be demarcated, with appropriate warning signage. A crossing point with height restrictions will also be installed to allow crossing of the exclusion zone. Where works are required inside the exclusion zone, the works will be risk assessed, and appropriate mitigation measures will be implemented as set out in the risk assessment and method statement for the construction activity at detailed design.										x	
Trenchless techniques will be used at the following road and transport infrastructure crossings to ensure that they remain open during the Dublin Array onshore infrastructure construction phase: <ul style="list-style-type: none"> (TX-01) - underneath the Dublin/Wexford railway line; (TX-03) - underneath the R119 Shanganagh Road/Killiney Hill Road Roundabout; (TX-06) underneath the N11 at Loughlinstown; (TX-07) – underneath the M50; and (TX-08) – underneath the Glenamuck District Distributor Road (road currently in construction). 									x	x	
During the construction phase, access to the proposed Landfall TCC will be taken via a proposed temporary access track. The proposed temporary access track has been designed to ensure that the heavy construction traffic will avoid around 300 m of the residential properties on Shanganagh Cliffs.											
Only roads where the width of the carriageway is unlikely to permit one lane to be kept open will be temporarily closed to install the cable. These closures will be partial only, with access in both directions being ensured through the use of traffic management measures.											
Links where traffic management measures will be necessary are identified below. Where no traffic management is necessary these are included for information only.											
A Construction Traffic Management Plan (CTMP) will be developed for the construction phase. The CTMP sets out mitigation measures that would be suitable to apply during the construction phase prior to the commencement of the construction and during the construction phase. A draft CTMP has been appended to the CEMP.											
At Link 14 (Shanganagh Cliffs) specific measures will be deployed. Provision of information to local residents and users of amenities will ensure they are fully aware of the construction works to alleviate stress and anxiety. Details to be shared will include the purpose of the works, duration and any specific traffic management measures that will be deployed. Dublin Array will work with key stakeholders to agree the method of engagement with these residents and users of amenities. The terms of this engagement will be set out in the final CTMP for the onshore infrastructure.											
A draft Construction Traffic Management Plan (CTMP) has been appended to the CEMP. The CTMP sets out mitigation measures that would be suitable to apply during the construction phase prior to the commencement of the construction and during the construction phase.						x			x	x	
Abnormal load delivery management - prior to the movement of abnormal loads, public awareness is required to allow residents to plan and time their journeys to avoid disruption. The haulage contractor shall remain responsible for obtaining all necessary permits from the relevant authorities along the access route. The movement of abnormal loads would be timed to avoid periods of heavy traffic flow to minimise disruption to the public. The appropriate permits will be secured, and escorts appointed, for the AILs required for the OSS only.										x	
Contractors – all contractors will have relevant experience working on underground high voltage cables and OSS construction projects. A Project Supervisor Construction Stage (PSCS) and Environmental Clerk of Works will be appointed;										x	
Signage – Warning signs will be provided throughout the construction locations. Any on-street signs will be in accordance with requirements of the ‘Traffic Signs Manual’ and in consultation with the Roads Authority.										x	
Construction site traffic - traffic visiting the construction sites (TCCs, OSS and O&M Base) will be required to report to the gatehouse/reception to obtain clear instructions. Inductions would be completed, vehicle permits would be issued, and the site rules and emergency procedure would be explained. Heavy site traffic would be equipped with audible reversing warning with additional visual aids e.g., reversing cameras, mirrors utilised on all plant. Drivers would ensure that all loads with loose materials are covered fully to limit the loss of material in transit.										x	
On site safety - personnel entering the working area would wear hi-visibility vest or jacket, head protection, safety footwear, eye protection and gloves at all times when out with the vehicle. All workers will be made aware that they have a responsibility for the safety of themselves and others. In the event of an emergency, right of way to all emergency services would be given at all times. Emergency services and control of access would be carried out in compliance with the site emergency procedures.										x	
Parking - parking areas located at the site construction compound would have safe and secure barriers to segregate all personnel from site plant and vehicle routes. No parking whatsoever would be allowed on public roads; all cars that are directed to the site parking area would be required to reverse park to comply with the Contractors requirements.										x	
Vehicle cleaning – a wheel and body wash would be operated within the site to ensure materials from the construction sites are not transferred onto the highway, and road cleaning would take place when required to remove any deposits that are carried from the construction locations. It is anticipated that any road cleaning activities would remain local to the site access.										x	

Proposed Commitment	Biodiversity	Water	LSG	Landscape	Arch	Health	Noise	Air	Material Assets	Traffic	Archaeology
During the construction phase, a project website will be regularly updated with project news to provide the latest information to the community. In relation to the traffic movements associated with the site, the website will be kept up to date.										x	
A Travel Plan will be prepared prior to the start of construction works and will include a range of demand management measures including a target car share ratio.										x	



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