



An
Bord
Pleanála

Inspector's Report ABP-310798-21

Development

Proposed development of that portion of an electricity transmission interconnector (Celtic Interconnector) to be constructed onshore in Ireland to the mean high water mark, including a connection to the Irish National Grid, an electricity converter station and all associated and ancillary works.

Location

Townlands of Ballynanelagh, Ballyadam and other various townlands, County Cork.

Planning Authority

Cork County Council

Applicant(s)

EirGrid PLC

Type of Application

Application under provisions of Section 182A of the Planning and Development Act, 2000 (as amended)

Prescribed Bodies

Inland Fisheries
Gas Networks Ireland
Department Agriculture, Food and
Marine
Department of Environment
Department Housing, Local
Government and Heritage – DAU
Geographical Survey Ireland
Transport Infrastructure Ireland
Cork Chamber Commerce
Heritage Council

Observers

Listed in Appendix 1

Date of Site Inspection

03/09/21.

Inspector

Sarah Lynch

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1.0 Site Location and Description

- 1.1. The proposed subsea cable landfalls from France at Claycastle Beach, south of Youghal town centre in County Cork. It is at the high-water mark at this location that the Board's jurisdiction commences. I will describe the site location as it travels from this landfall location at Claycastle Beach to the point of connection to the Irish National Grid.
- 1.2. The location at Claycastle Beach is at the end of the existing boardwalk and close to the car park which is separated from the beach by a pathway. This area includes a number of caravan parks and a leisure centre. From the proposed transition joint bay the HVDC cable travels out of the car park onto the R908 going off the public road and onto adjoining lands prior to the bridge over the now disused railway line. This disused railway line is being developed into the Midleton/Youghal Greenway (23km cycle and walking route along disused railway/track from Youghal to Midleton due for completion c.2023).
- 1.3. The route then joins the main road again close to the junction with the R634 where it continues within the public road to the interchange with the N25 where it follows the single carriageway onto same. The route follows the N25 until, south of the village of Killeagh, the route veers southwest across farmland to the south of the existing urban edge crossing under the River Dissour, across a local road and further farmland before joining the N25 again to the south of Killeagh. Continuing along the N25 and before the village of Castlemartyr the route veers north onto farmland prior to veering west and crossing the Mogeely Road and Kiltha River and then joining the N25 again to the northwest of the village centre continuing along the N25.
- 1.4. To avoid Midleton town centre and the N25 which is subject to a proposed upgrade, the route then veers north across agricultural land and onto a local road at Churchtown continuing along this route and crossing the proposed Midleton/Youghal Greenway. The route continues north crossing a junction onto local road L7629 where the elevation increases continuing on to cross an irregular junction of the R627 onto the L7617. The route continues on this local road and at another junction turns west continuing along this road to a junction at the East Cork Golf Club. From here the route goes south onto the L3610 and then north onto the R626 for a short length until a junction to the left where it continues past a Golf Club and to the location of the

proposed converter station where it veers south from this local road to the east of a large farm complex where it traverses under the existing Midleton – Cork trainline into the IDA lands.

- 1.5. The HVAC cable route from the converter station uses the same access point onto the local road to the north of the rail line and then continues along this local road to the west to the next junction passing the stone buildings of the farm complex and continuing close to the railway bridge but not crossing same. The cable follows the local road north, west and north west crossing a number of junctions until it reaches Knockraha substation in the townland of Ballynanelagh. The existing substation is a large electrical complex situated within agricultural lands. There is an area of the existing complex available to facilitate the proposed development.

2.0 Proposed Development

1. Overview

The overall Celtic Interconnector proposed development comprises an electricity interconnector connecting the existing electricity grids in Ireland and France jointly planned by the Transmission System operators (TSO's) in both jurisdictions, EirGrid and Réseau de Transport d'Electricité (RTE). This is the first such direct electrical link between Ireland and France/European mainland. The proposal would enable the import and export of electricity between the two jurisdictions consisting of a proposed 700 MW connection between Knockraha substation in East Cork and a substation at La Martyre in the Finistère region of France. The interconnector is proposed to comprise both onshore and subsea cables and have a total length of 575km.

Approximately 497km of the route is located within the maritime area across three jurisdictions (Ireland, UK and France) as follows:

Territory	Distance
Irish Territorial Waters	34km
Irish Exclusive Economic Zone (EEZ)	117km
UK Exclusive Economic Zone (EEZ)	211km
French Exclusive Economic Zone (EEZ)	87km

French Territorial Waters	48km
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2. **Elements of the Proposed Development within ABP jurisdiction**

The permanent and temporary elements of the proposed development located within the Board's jurisdiction, from the subsea cable landfall location at Claycastle Beach to the point of connection to the Irish National Grid are as follows:

Landfall Location and Subsea Cable (within ABP jurisdiction) at Claycastle Beach in Youghal

Installation of approximately 74m of submarine cable at Claycastle Beach comprising 2 transition joint bay chambers of approximately 60sq.m and temporary installation of steel piled cofferdams and a causeway for access to facilitate construction all within a combined area of approximately 0.3ha.

High Voltage Direct Current (HVDC) Underground Cable

Installation of High Voltage Direct Current (HVDC) underground cables for approximately 32km connecting the landfall point at Claycastle Beach and the converter station compound at Ballyadam, east of Carrigtwohill. The cable laying also requires associated laydown areas, passing bays, joint bays and link boxes and water, rail and utility crossings using either Horizontal Directional Drilling (HDD) or open cut techniques all within an area of approximately 103ha.

Converter Station & adjoining Substation - *Ballyadam*

An electricity converter station and adjoining ESB substation within two compounds with a combined site area of approximately 3.6ha comprising:

Converter station compound

- Removal of an existing substation building (approx. 72sq.m in area and approx. 4m high) to facilitate the proposed converter station.
- New converter station building (gfa of approx.4,698sq.m and max. height of 25m)
- Control building
- Storage building
- Valve cooler area
- 400kV AIS equipment and transformers

- Harmonic filter compound
- Security hut

ESB substation compound

- Control building, (gfa approx. 336sq.m and max height of 7.2m).
- 400kV AIS equipment (max height of 12.5m).
- Reactive compensation compound

Elements common to both compounds include:

- Lightning protection poles (max. height of 25m).
- Small Interface kiosk.
- 2.6m high property fence and gates and palisade fence/gates.
- Landscaping planting.
- Internal access road of approximately 477m in length and 5m in width.
- Car parking area for up to 18 cars.
- All other associated site development works including surface water and foul drainage required to facilitate the development.

High Voltage Alternating Current (HVAC) Underground Cable

Installation of High Voltage Alternating Current (HVAC) underground cables for approximately 11km in length connecting the proposed converter station compound at Ballyadam to the connection point to the grid (at the existing Knockraha substation), laydown areas, passing bays and joint bays and link boxes and water, rail and utility crossings using either HDD or open cut techniques all within an area of approximately 11ha.

Connection to the Irish National Grid – Existing Knockraha Substation

Connect to the National Grid at an existing bay within the existing Knockraha substation. The new equipment, (combined area of approx. 1.9ha) accommodated within the existing fence line of Knockraha substation comprising:

- 400kV and 220kV Air Insulated Switchgear (AIS) equipment.
- 400/220kV transformer.
- Lightning protection poles (max height of 20m).
- Small relay room

Associated Elements

- Installation of fibre optic, telecommunication and other associated cabling carried in underground ducts.
- Temporary construction compounds on sites up to approximately 1.5ha, including associated site works and associated ancillary staff facilities and parking.
- Temporary construction laydown areas on sites of approximately 0.6ha each, including associated site works and parking.
- Ancillary above and below ground development including works comprising or relating to permanent and temporary construction and roadworks and excavation and vegetation clearance.

2.2. Planning Authority Reports

1. Planning Reports

Cork County Council

2. Cork County Council have submitted a planning report in respect of the proposed development. The report summarises the details of the proposed development, legislation, national, regional and local policy relevant and a review of the application documents submitted, such details are adequately provided within the body of this report and will therefore not be repeated hereunder. The relevant issues raised by CCC can be summarised as follows:

- Concern is raised in relation to the width of jointing bays on narrower local roads.
- Potential for works at the Ballyadam Converter Station site having an impact on the route corridor of the N25.
- Specific supporting policy for the project is included within the Draft Cork County Development Plan 2022-2028.
- Zoning at Landfall is identified as 'existing built up area'.
- Zoning at Ballyadam Converter Station is 'industry'.
- Principle of development is acceptable.

- No concerns in relation to visual impacts.
- No concerns in relation to archaeology.
- Development will not have any significant effect to human health in relation to EMF.
- No High Status waterbodies along the route.
- No issues relating to flood risk.
- The proposed project does have the potential to significantly negatively impact a number of key ecological receptors including sites and habitats of high ecological value, protected and rare plant species, important assemblages of breeding birds and the Hen Harrier winter roost site at Ballyvergan.
- In accordance with the proposed mitigation, there should be no removal of vegetation within the pNHA during the bird breeding season. Additional controls on timing of works could cause significant disturbance to wintering birds.
- The Council's Ecologist has also specifically noted that the proposed traffic management solutions at Longstown be revised to avoid impacts on an area of woodland and roadside and field boundary impacts need to be carefully considered.
- As set out in the EIAR, bespoke method statements should be prepared for all works at each water crossing and works should only proceed at these with the agreement of Inland Fisheries Ireland.
- The Planning Authority therefore has no objection to the proposed development subject to application of suitable conditions/ resolution of some elements of concern as highlighted.
- Suggested conditions are included as an appendix to the submission.

2.3. Prescribed Bodies

Inland Fisheries Ireland

There are numerous watercourses within the broad footprint of the development. Water crossings across both minor and major watercourses are envisaged. In order to ensure protection of fisheries, IFI have suggested a number of conditions:

- 1) Watercourse crossings should be carried out by non-invasive means such as spanning of directional drilling,
- 2) No drainage or other physical interference with the bed or bank of any watercourse without prior consultation with IFI,
- 3) Suspended solids, hydrocarbon contaminated or other construction runoff to waters must be controlled adequately so that no pollution of surface waters can occur,
- 4) In the event of any watercourse being traversed by open cut a number of criteria should apply including:
 - a. Free passage of fish
 - b. Reinstatement of riverbanks after works
 - c. No works to represent obstacle to fish
 - d. IFI consultation prior to works
 - e. In stream works limited to July-September.

Gas Networks Ireland

There is a high pressure gas transmission pipeline located in the immediate vicinity of the proposed development route. The gas lines are shown on submitted drawings.

It is stated that the applicants are aware of the presence of such lines and have been in consultation with GNI in this regard. Gas lines are present within a 14 metre wayleave which is a registered easement on Land Registry, works cannot be undertaken in these wayleaves without permission from GNI which will not unreasonably be refused.

All works in the vicinity of a gas transmission line must be carried out in accordance with the guidelines set out in the Code of Practice.

A High Voltage Interface Study is required to be carried out prior to construction based on the potential for the proposed high voltage electrical infrastructure to impact on the GNI High pressure transmission pipelines.

Department of Agriculture, Food and Marine

The response received can be summarised as follows:

- Comments relate to commercial fisheries and primarily relate to the marine aspects of the plan.
- Impacts on any commercial sea fishing activities needs to be given consideration.
- Fishing industry should be consulted at all stages of the project.
- Fisheries should be included as a material asset.
- Fisheries liaison officer should be kept informed and is a key link with fishery representatives.
- The proposed cable will only affect bottom spawners and not floating spawners.
- It is of note that some species of skate are critically endangered and the main Herring stocks around Ireland are regarded as depleted and interference with spawning grounds for these stocks during October and November is strongly discouraged.
- Impacts to fisheries appears to be based on AIS data that is 6 years old, justification for the inadequacy of this information is provided and the department is concerned that given the limitations of the data provided some fishing operations have not been identified.
- Concerns are raised in relation to the impacts of rock armour on fishing vessels and the potential for nets to become entangled.
- The department states that where the cable is buried it will not impact fishing activity for most gears with the exception of rock armour locations.

Department of Environment

It is stated that DECC does not want to submit observations with specific regard to the planning application but wishes to reiterate current Government Policy with regard to development of electricity interconnectors and has attached a summary of government electricity interconnector policy.

Department Housing, Local Government and Heritage - DAU

- Department is satisfied with the mitigation and compensation measures proposed to minimise impacts on nature conservation.

- It is suggested that mitigation is enforceable.
- Impacts to nesting birds procedure should be clearly set out and full details of what actions will be taken in the event that NPWS cannot be contacted.
- In the event that NPWS cannot be contacted a detailed plan to manage nesting birds should be submitted.
- Restoration and management conditions should be imposed in relation to the reedbed in the area of Ballyvergan pNHA rather than being subject to later consent.
- A lost opportunity for enhancement exists within the plans, EirGrid are proposing to remove an area of wetland in the Ballyvergan pNHA to facilitate the cable and then back fill. It is proposed by the department to remove this material permanently and to also remove an area of the pNHA which has been infilled in past years and replace with material from the proposed trenches and with material directly adjacent to the works. It is also proposed that borrow pits could be utilised within the area which would be of benefit ecologically within this wetland.
- The department contends that the wetland would benefit from additional pools, scrapes and wet reed.
- These additional areas will need to be monitored.
- Archaeology conditions are recommended and the department concurs with the general recommendations.
- Comments in relation to the offshore element of the proposed development remain as previously stated and are reiterated within the submission made.

1. **Geological Survey Ireland**

There are a variety of Karst features within the development site which is underlain by a regionally important aquifer.

2. **Irish Water**

- The applicant has engaged with Irish Water in relation to the proposed development. Ongoing engagement is required.

- Conditions in relation to installation and engagement are proposed.

3. **Transport Infrastructure Ireland**

- TII recognises the need for the proposed development and acknowledges EirGrid engagement in addressing questions and concerns raised by TII.
- TII seeks to ensure that the provisions of official policy and Government objectives as they relate to the existing and planned national road network are upheld to ensure continuing high standard of safety for road users and to protect investment by government.
- TII welcomes that the cable route from Midleton to Knockraha substation is facilitated on non-national road network thus avoiding critically impacting NDP proposals for upgrade of the substandard dual carriageway between Midleton and Carrigtwohill.
- Conditions are sought in relation to:
 - Construction impacts – two way movement should be facilitated during construction, consultation with Cork CC and TII should occur prior to construction.
 - Impacts on Bridges and Drainage Structures - consultation with Cork CC and TII should occur prior to construction
 - Constraints to Future Development on the N25, national road
 - Application of official policy.
- A licence is required for abnormal loads, consultation with relevant authorities in this regard is required.
- Road raising works should be considered in tandem with the installation of the interconnector and advise that EirGrid may wish to consider this.
- The N25 is a TEN-T route and a critical infrastructure – Improvements from Midleton to Carrigtwohill are identified as a major project within the NDP and Cork CDP. In this regard EirGrid note the route of the cable around villages of Killeagh and Castlemartyr and supports this decision. It is envisaged that these two villages will be bypassed but the route will not be ready for consideration within the timeframe of the interconnector.

- TII request that EirGrid engage with Cork CC to develop a cable installation methodology that would facilitate the future construction of tie ins at Killeagh and Castlemartyr.
- Note Section 28 Ministerial Guidelines 'Spatial Planning and National Roads Guideline for Planning Authorities' states that entrances onto national roads should be avoided. Note the entrance of the Ballyadam converter station accesses the N25 whereby speed limit is 100km. Consideration should be given to construction compounds accessing national road network.
- All works to national road should comply with TII publications.

4. **The Heritage Council**

- The application and assessment should reference TII Landscape Character Assessment (LCA) and Landscape and Visual Impact Assessment of Specified Infrastructure Projects- Overarching Technical Document.
- Reference should also be made to Regional Seascape Character Assessment for Ireland Report.
- A method statement for the works at Ballyvergan Marsh is prepared.
- Reinstatement of hedgerows should occur.
- Works near to riverine, coastal and wetland locations have a high occurrence of archaeological features and mitigation should be a central part of the project.
- Views and prospects of the landfall should be taken into account and care taken at reclaimed lands at Summerfield.
- Environmental Manager is recommended to ensure the EIAR is implemented in its entirety.

2.4. **Third Party Observations**

1. **SSE Renewables**

- The Celtic interconnector is an important piece of infrastructure for Ireland and will assist with the generation of more renewables on the electricity grid assisting Ireland meeting its 2030 climate targets.

- SSE support the proposed development.

2. **Declan and Margaret Kenneally**

- Cable is to be located beside house that is 100 years old and has no foundations.
- There are caves in the vicinity of the works.
- A well and well pump has been impacted on the lands due to the presence of caves.
- Caves have broken up to ground.
- House is the nearest house to N25 due to road widening works.
- Road works resulted in the removal of the front garden to the property.
- Noise pollution is an issue at the property.
- Concerns are raised in relation to the proximity of the dwelling to the 700MW line and the impact of radiation emitting from the line and that there will be health implications arising from the power line.
- Grid connection should be placed along the Greenway route from Middleton to Youghal.

3. **Stephen and Mary O'Brien**

- Power to be produced at Knockraha will increase to 400MW which is substantially larger than what is currently being produced.
- Cables are only 6-10 metres from observers home and emit a constant buzzing noise.
- Concerns are raised by the observer regarding their health and that of their family.
- Clarification is required in relation to tone content and radiated fields surrounding power lines.

4. **Catherine and Dermot O'Driscoll**

The following is a summary of the issues raised by the above observers:

- Increased Breast Cancer Risk and reduction in Immune system to residents – some residents in area have compromised immunity.
- Microtesla value of 40 above the grid cable which reduces down over 10 metres.
- Research shows an increase in getting breast cancer and reduced immunity when exposed to 50-100 microtesla.
- A request was submitted to EirGrid to confirm in writing that impacts to immunity or breast cancer rates would not be impacted as a result of the development. This was not provided.
- Text from the WHO has been cited which has classified radiofrequency electromagnetic fields as possibly carcinogenic to humans.
- Property values will decrease.
- Water mains will be less than 0.3 metres from grid line. EirGrid have responded and stated that they were commencing preliminary engagement with Irish Water but have not discussed impacts to water quality arising from the proposed development.
- Concerns raised in relation to impacts on the root system of residents trees.
- Alternative routes are proposed including, old rail line along Greenway, parallel to gas pipeline to Roxborough.

5. **Fergal Gough**

The respondent states that he is objecting to the converter station at Ballydam on part of the IDA lands. The respondent resides at Hayfield to the west of the proposed converter station. The issues raised can be summarised as follows:

- Proposed works are within the N25 Carrigtwohill to Midleton National Road Scheme Constraints Study.
- A submission to an application for a dwelling along the N25 from TII was considered to be premature pending the upgrade of the N25, the proposed route should be considered in the same way as being premature.

- Reference is made to Draft Cork County Development Plan 2021 South Cork – Part 1 Carrigaline MD7 Cobh MD and the criteria for developing the site at the location of the proposed converter station.
- Reference to Cork County Council Cobh Municipal District Local Area Plan 2017 in which similar criteria is required on the lands of the converter station. It is stated that proposed development is not industrial and is contrary to the local area plan.
- 5 archaeological sites within the CT-103 zoning, an archaeological assessment is required. The respondent is of the view that the proposed development would have a detrimental impact on the recorded monuments.
- Karst features are present adjacent to the IDA site and the groundwater vulnerability under the IDA is classed as Extreme.
- Developments in Karst areas could result in flooding.

6. **Knockraha Area Community Association**

A submission has been made on behalf of the Knockraha community. It is stated that the submission is primarily concerned with the expansion of the Knockraha 220kV substation. The issues raised can be summarised as follows:

Overdevelopment, alteration to existing substation,

- The Knockraha substation will receive 400MW power cumulatively when the proposed development is complete. Concerns are raised in relation to the number of power generation sources connected to one substation and the security and balance of the grid at this location.
- Network Analysis Celtic Interconnector Feasibility Study states that there will be problems if the new line is connected to Knockraha.
- The respondent contends that the routing of additional electricity through Knockraha will result in the site being a single point of failure on the network.
- No justification for upgrading the substation from 220kV.
- Concerns raised that bringing 400kV into substation could result in the re-energising the GridLink project or similar to take 400kV out again.

- Documentation states that a number of options were being considered i.e 2 no. 200kV lines or 1 no. 400kV line, both were to be considered in consultation with landowners and the community. It is stated that such consultation did not occur.
- CEMP does not detail the works duration or how traffic is to be managed.
- No study of traffic movements to substation.
- Lack of details with regard to oil movement and disposal.

Visual

- Viewsheds are not sufficient.
- Extension to substation is significant and has a greater impact than stated within the documentation submitted.
- Absence of proposal for additional planting at the entrance to the substation is unacceptable.
- Photomontages did not take account of seasonal differences.
- No. of view points was less than normally required.
- Information on sun location and light level reading is not recorded.
- No record of image sharpening or software rendering.
- Visual impact is very notable from main roadway into Knockraha village, Blooms Grove and all points approaching from Clash in the north.
- Site is visible on skyline from Barnavara Hill approaching into Glanmire and from approaches from Glounthane and Carrigtohill and from Upper Glanmire and the Cork Dublin Motorway.
- Aerial photos do not show extension to substation granted in 2014 and is misleading in relation to the actual size of the site.
- Figure 1. Does not show rail line.

Noise

- Baseline measurement does not refer to the number of transformers which were operational at the time and the sound levels of each operating transformer.

- EPA guidelines – states that surveys should be undertaken during a period which is representative of a worst case scenario.
- The application should set out the tonal noise, sound power and noise characteristics of the proposed four transformers, this is not stated.
- Baseline noise survey is without any conclusion or any interpretation of data for the lay man.
- Noise profiling which details peaks and troughs in relation to usage would be more helpful.

EIA

- No specific EIA report in relation to the 220kV substation.
- The observer considers that under the Aarhus Convention etc an EIA for the development at Knockraha must be prepared and is duly requested by the observer.
- No EIA/EIS has previously been prepared for the substation previously.
- There is considerable local concerns as to the current and potential impact of the substation including the following:
 - ground water damage,
 - creosote contamination,
 - habitats impact,
 - litter,
 - noise,
 - security,
 - visual landscape degradation,
 - surface water run off,
 - industrial materials usage and storage,
 - sewage disposal,

- Article 99(1) of the Planning and Development Regulations is referred to and the requirement to invalidate an application in respect of development of a class which is not accompanied by an EIS.
- The application should therefore be considered invalid.

Noise

- Current substation emits a low tonal humming noise which causes distress to residents.
- A noise profile should be published monthly in relation to the current substation, no further development should occur prior to this being undertaken.
- There has been an ongoing noise issues since planning permission 13/6402. Planning permission 08/7401 is also referred to by the observer, it is stated that noise impacts were identified during the application process of this planning permission and remain unresolved.
- Noise issues are periodic and dependent on a number of factors such as seasonality and usage. The observers request a full noise assessment to be carried out prior to additional development at the site.
- Noise emitted from transformer can be heard in the village.
- Noise value measurement dBA is not suitable for low tonal noise. In addition noise mitigation measures such as noise barriers are not effective at the site.
- Substation should be an EPA licenced facility.
- Cumulative Impact
- Concerns are raised in relation to the cumulative impact of both existing and proposed development in the area, reference is made to solar farm and wind energy projects.
- Concerns are raised in relation to the development of the area for additional industrial uses further eroding the agricultural and rural character of the area.
- Substation has overbearing visual effect on village, it is located on higher ground than the village.

- There are numerous elements of electrical infrastructure within the surrounding landscape.
- Proposed development is contrary to the rural policy of the development plan.
- Landscape is designated as highly sensitive.
- Development does not seek to improve the design of the substation or the quality of life in the surrounding area.
- Further development will hamper future development of heritage and agri-tourism etc and will impinge upon the residents rights to develop their village.
- Permission was refused for a dwelling in the area of the substation as the area is identified as an area under strong urban influence, the proposed substation would bring additional development which is contrary to the plan.

Archaeology

- There are a number of recorded monuments in the area and the proposed development will hamper the development of these historical features.
- Knockraha east bomb factory is located adjacent to the site, this facility was underground and no above ground evidence is present but is stated to be of historical significance to the War of Independence.
- Photos have been included within the observation submitted of drawings and items associated with the bomb factory.
- It is the intention of the observer to develop a historical trail and for the significance of the Knockraha area to become a visitor attraction.
- The independence way website has been launched and there are concerns that the substation extension would endanger the potential of the heritage tourist trail.

Site Contamination

- Western area of site has been used as a storage and waste area; concerns are raised in relation to creosote contamination. It is suggested that this is considered as part of the application.

Planning Documents

- Classification of substation is incorrect stating 'future 400kV' substation.
- Requirement for additional infrastructure adjacent to the substation is stated in submitted planning report, this is not referred to on submitted drawings.
- Reference is made to separate programme of planting, it is submitted that this is incorrect and planting is inadequate.
- Statement that the accommodation of additional flows can be better dealt with at the development site rather than Great Island are incorrect.
- Local road is low capacity and not suitable to cater for traffic associated with the development.
- No TIA has been submitted.
- Traffic management is currently an issue at the facility.
- Discrepancies between current SID drawings and previous planning drawings in relation to boundaries.
- Existing permitted extension appears to be 1000sqm larger than permitted.
- Entrance gate and fence erected without planning permission.
- Additional screening and planting should be included with development and conditioned and should comprise of mature and semi mature planting.
- Storage area should be rewilded to provide buffer.

Construction Compound at Killeena

- Compound should not be allowed as it will establish a precedent for future development.

Security

- Concerns are raised in relation to security arrangements at the substation as it is stated that a number of break ins have occurred in the area.

Timescale of submissions

- Concerns are raised in relation to the lack of expertise available to the community to make a submission and the timeframe which fell over the summer months. The observer states that the community is at a significant disadvantage

with regard to participation in the process and states that the process is contrary to public planning participation process.

Need for the project

- Peak demands in France coincide with peak demands in Ireland, no surplus will be available as the French are unable to service their own needs.
- Concerns are raised in relation to the potential increases in energy costs as a result of the interconnection.
- Full cost benefit analysis should be carried out for the project.
- Importation of nuclear power is contrary to the Cork County and Cork City declaration to be nuclear free in the 1980's.
- Nuclear plant accounts for the same CO₂ as a gas fired plant over its lifetime.
- Nuclear is not a cleaner option.
- Ireland would become an enabler of an ecologically poor nuclear industry.

Health and Wellbeing

- No ELF or EMF data for existing substation is available within the application.
- Concerns are raised in relation to the concentration of high voltage electrical circuits into one area and the overall effects of this specific concentration of radiated fields over time.
- Noise can have an effect on health and wellbeing of people in the area.
- Concerns are raised with regard to psychological health effects from living in close proximity to such a facility.
- No effort within the application to improve on the design or quality of life for residents.
- Application has not demonstrated how it complies with European Communities, Electronic Communications (Authorisation) Regulations 2000 and the ICNRIP Guidelines for public exposure to electromagnetic fields.
- It is stated within the observation submitted that the community is under siege and it is requested that a Moratorium is implemented in relation to

Industrial/Infrastructural/utility development for the Knockraha area within a 10km radius.

- ESB have not engaged with the local community.
- Request to have current substation ringfenced, landscaped and managed so that it is not detrimental to local community.
- An oral hearing is requested, it is requested that ABP refuses the application.

7. Alan Fitzgerald

- Layby indicated on plans within the area Shanty Path, Roxborough is currently the only access available to the landowners. It is stated that this was communicated to EirGrid prior to the submission of the application, however remains on the plans submitted.
- Ownership is to the middle of the road and consent has not been granted to EirGrid to lay the cable. No CPO process is underway and as such the development is premature.
- The location of all aspects of the development has been determined without the involvement of the public.
- Concerns are raised in relation to the delivery of consultation letters to local residents during lockdown.
- No consideration of alternative routes proposed by the observer appears to have been considered.
- Churchtown has been incorrectly referred to within the application, the observer is located within Churchtown north. It is suggested within the observation that the application is made invalid.
- No consideration of impacts during construction arising from noise vibration and the potential for damage to properties to arise.
- The cable will run along side and cross water mains which is contrary to Irish Waters submission.
- Assumption that EirGrid will operate the cable within permissible EMF levels is not acceptable.

- Adjacent public road is heavily trafficked by agricultural machinery and heavy loads and is in a bad state of repair, the quality of the road surface is an area of concerns with regard to protection from EMF emitted from the cable. The observer is concerned that the local residents will be subjected to increased EMF than is permissible.
- Concerns are raised in relation to the emission of EMF levels and the health implications of exposure to such levels.
- Concerns are also expressed in relation to exposure to radon as a result of the works.
- Lands above the cables will attract high levels of radon gas.
- Radon will accumulate within the water pipes of homes.
- EirGrid have not contacted employers to allow for health and safety assessments to be carried out in relation to increases in EMF in the area.
- HSA recommends no new services such as gas and electricity should be located along or above water services, the proposed cable will run alongside the water mains.
- EirGrid have stated that the alternatives proposed by residents are feasible but maintain their position of the preferred route, this is stated as not being acceptable within the submission.
- Impacts to nesting birds, natural wildlife and visual impact are not specified.
- Concerns are raised with regard to impacts arising from works within roads that have recently been resurfaced.
- Reference is made to the policy position of Cork County Council as set out within the Cork County Development Plan.
- No access to community benefit fund.
- Request for ABP to refuse permission.

8. Ann Moore

- The observer states that no correspondence has been sent to her from EirGrid.

- Concerns are raised about the health of both her family and animals and the impacts of EMF and Radon arising from the development concerns in this regard have been outlined within the above submission and will not be repeated hereunder.
- Roads are not suitable to cater for construction traffic.
- Proposal would directly effect flood relief works and the Owenacurra River.
- Potential impacts to recovering Salmon need to be assessed.
- The towns drinking water could be affected.

9. **Barry Fitzgerald Roxborough Stud Ltd**

The submission received refers to items outlined within the foregoing submissions which are summarised as follows:

- Human and animal health and welfare.
- Environmental concerns in relation to removal of hedgerows.
- Noise, vibration and dust pollution.
- Impact to family farm and home access.
- Devaluation of property.
- Lack of consultation by EirGrid.
- More preferable routes have been overlooked such as Youghal Greenway.

10. **Barry Fitzgerald**

A separate submission has been made by Barry Fitzgerald which outlines the same concerns stated within the foregoing submission.

11. **Caitriona Murphy**

The issues raised by Caitriona Murphy in relation to noise, health, access, vibration, hedgerows and dust are outlined within the foregoing submissions. In addition to the issues raised within the foregoing submissions, it is suggested within this submission that the power lines should be re-routed through farmland.

12. **Denis Kelleher**

Issues raised within this submission in relation to health concerns, EirGrid consultation and route selection are similar to the foregoing submissions and will not be repeated hereunder. Additional areas of concern raised within this submission can be summarised as follows:

- Concerns in relation to road closures and the impacts this will have on access for farming activities such as movement of cattle, milk collection, cutting crops etc.
- Potential for works to damage subsurface services.
- Water has been effected by works in the past leaving livestock with no access to water.

13. **Feargal & Kay Abernethy**

This submission outlines all of the same issues relating to health, infrastructure and mammals as outlined within the foregoing submission, no new issues are referred to within this submission.

14. **Gary & Clare Crowley**

Similar issues are raised within this submission as outlined in the above submission with regard to potential health affects, construction traffic, EirGrid consultation, noise, route selection, farming activities, environmental considerations, additional issues raised can be summarised as follows:

- Layouts are stated as being indicative and will be determined at a later date. This is not acceptable.
- Concerns are raised in relation to the duration of the proposed works.
- No traffic management plan has been submitted.
- Access for emergency vehicles is not referred to.
- Hours of working is not referred to.
- No method of accommodating local traffic has been submitted.
- Residents have recently been impacted by the laying of a waste discharge pipe from new cheese factory in Mogeely. Proposed development will place

intolerable burden on local residents. Works within a 4.5 metre road will require a road closure further impacting residents.

- Trench and cable specification are not provided.
- No information in relation to artificial lighting is provided.
- No indication of volumes of excavated soil is provided or the number of movements related to this.
- No details in relation to ground breaking are provided.
- No indication of electrical grounding or continuity testing.
- No indication of structural protection of dwellings.
- No information on how the cable will be monitored or maintained.

15. **Giancarla and Michael Alen-Buckley**

Reid Associates have prepared a submission on behalf of Giancarla and Michael Alen-Buckley, similar issues are raised within this submission as raised within the above submissions, as such new issues raised can be summarised as follows:

- Celtic interconnector is a hangover from the celtic tiger era of energy infrastructure. It is designed to sustain an uneconomic unsustainable energy infrastructure where waste of 1.9 MW is the norm.
- Failure to consider energy demand management.
- Ireland will be vulnerable to energy price shocks.
- Energy strategy is overly reliant on on/off shore wind and solar and has not reduced carbon emissions.
- Failures in energy strategy need to be addressed, a more sustainable approach needs to be adopted similar to transport development.
- Interconnector is vulnerable to geopolitical security threats.
- Is landfall to IDA park to facilitate additional data centre development.
- Almost a third of energy consumed by households was wasted.

- Carbon emission arising from energy production accounted for 20% of greenhouse gases in 1990 and accounted for 19% in 2014, wind energy is therefore not having an impact.
- On shore wind was assessed against out of date guidelines will off shore be assessed in the same manner.
- An oral hearing is requested due to the complexity of the development, failure to address supply chains and implied support for nuclear energy and fracking. Written submissions are inadequate to address the significant public ramifications and environmental consequences arising from the proposed project.

16. Kieran O'Driscoll

The issues raised within the submission in relation to landowner consent, health, address of development, water mains, EMF exposure and radon and health and safety, alternative routes, access to farm lands, removal of hedgerows and road resurfacing and data centres have been outlined within submissions above and will not be repeated hereunder. The submitter does raise a concern in relation to access to community benefit fund for the benefit of small rural communities.

17. Churchtown North Residents Association

Similar to the submissions outlined above, issues in relation to landowner consent, public consultation, alternatives, impacts to habitats and species and human health are outlined within the above submissions and will not be repeated hereunder. New issues within the submission received are summarised as follows:

- Developer has failed to identify the location of the mean high water mark at Claycastle beach and has not defined the legal boundaries between the public foreshore, private foreshore and the functional area of the LA, providing an incomplete red line boundary. Development within private foreshore at Claycastle.
- Consultation on entire project has not occurred.
- No notification for Irish citizens of consultations in other member states.

- Irish public have not been involved at the earliest stages when key locations were decided.
- French documents are not translated, thus preventing an understanding of the entire project.
- The proposed project is not environmentally justified.
- An alternative is battery storage in Ireland.
- No proper environmental consideration of alternative routes proposed by community group.
- IDA lands comprise contaminated lands.
- No details of piled foundations, impacts to groundwater and stability of the site have been provided.
- Information in relation to hydrogeology is not sufficient for assessment of impacts.
- Major accident has not been considered.
- Contravention of LAP and CDP.
- Impacts to marine life arising from cable has not been considered appropriately.
- Ex-situ effects have in relation to migratory birds has not been examined.
- Assessment of habitats and species in Irish waters is premature pending the designation of Marine Protected Areas.
- Extent of tree removal is not indicated.
- Impacts on fresh water pearl mussel and salmon are not properly addressed.
- Impacts to East Ballyvergan_10 or Dungourney have not been considered.
- Submitter requests an oral hearing to be carried out.

18. Mark Douglas

No new issues are raised within this submission. Issues raised within the submission in relation to landowner consent, health, address of development, water mains, EMF exposure and radon and health and safety, alternative routes, access to farm lands, removal of hedgerows and road resurfacing, access to community benefit fund and

data centres have been outlined within submissions above and will not be repeated hereunder.

19. **Mary O'Neill and Others**

- The submitters water pump is beside the road and does not want the cable beside it.
- Road is unstable and heavily trafficked.
- What is a safe distance from a cable.
- Concerns regarding devaluation of property, levels of radiation and health.

20. **Maurice and Ann Ahern**

Issues raised within the submission in relation to landowner consent, health, proximity water mains, EMF exposure and health and safety, alternative routes, impacts to biodiversity and access to the community benefit fund have been outlined within submissions above and will not be repeated hereunder. The submitter raises a new issues relating to the routing of the cable under a proposed flood relief area and a potential conflict of interest with regard to an employee of EirGrid whom worked for ABP in the past.

21. **Michael Coleman**

J.F William & Co. Solicitors have prepared a submission on behalf of Michael Coleman which can be summarised as follows:

- Proposed route will sever the observers lands and no consultation has been afforded to the landowner in this regard.
- Concerns are raised in relation to the observers farming activities and impacts to live stock.
- Segregation of lands will increase the observers responsibilities and duties of care immeasurably.
- Proposal will have an impact on the quality and character of the observers farmland.

22. **Noelle Murphy - L6989 Residents Association Knockraha Co. Cork**

The issues raised within the submission can be summarised as follows:

- Issues are raised in relation to compliance with conditions of a previous permission relating to the extension of an ESB substation, Cork County Council planning ref:13/6402.
- Observer states that information submitted with application was cumbersome to use and no assistance was forthcoming from EirGrid.
- Details are provided in relation to the alleged breaches of conditions are included within the submission.
- The submitters request that conditions directing traffic to access the Knockraha site from Pigeon Hill junction between L-2966 and L-6989.
- A proper traffic management plan should be put in place with a penalty clause included.
- Landscaping relating to a previous application has not been adequately provided thus concerns are raised in relation to the cumulative effect of the proposed development in this regard.
- Concerns are raised in relation to existing noise levels and additional noise generated from the proposed development.
- Remaining issues in relation are requested to be adequately dealt with by EirGrid during the next phase of development.

23. Paul Burke

The submitter raises concerns relating to the impacts of EMF exposure to the health and well being of his family and refers to a number of studies and WHO information within the submission. The submitter is concerned that the lack of causality links with regard to health effects is due to lack of evidence which offers little comfort to him or his family.

24. Simone O'Flynn

No new issues are raised within this submission. Issues raised within the submission in relation to landowner consent, health, address of development, water mains, EMF exposure and radon and health and safety, alternative routes, access to farm lands, removal of hedgerows and road resurfacing, access to community benefit fund,

flooding and data centres have been outlined within submissions above and will not be repeated hereunder.

25. Tom Fitzgerald

No new issues are raised within this submission with the exception of impacts to the welfare of the observer's horses with regard to EMF. Issues raised within the submission in relation to landowner consent, health, address of development, water mains, EMF exposure and radon and health and safety, alternative routes, access to farm lands, removal of hedgerows and road resurfacing, access to community benefit fund, flooding and data centres have been outlined within submissions above and will not be repeated hereunder.

26. Tom Fitzgerald Roxborough Stables

The issues raised within this submission have been outlined within above under the submission made by Barry Fitzgerald Roxborough Stud Ltd and as such will not be repeated hereunder.

27. Cork Chamber of Commerce

A letter of support for the proposed development has been submitted by the Cork Chamber of Commerce. It is stated that the interconnector is key to increasing Ireland's national resilience and is key to the country's transition to renewable energy.

It is further stated that Cork is a growing hub of economic activity and will accommodate 23% of the state's overall population growth over the next 20 years. The proposed interconnector is identified as a key enabler of future economic growth and diversified energy supply and is welcomed by the chamber.

2.5. Applicant's response to submissions

- 2.6. EirGrid have prepared a response to the submissions above which is summarised hereunder. It is stated at the outset of the response that in order to avoid undue repetition, responses to reoccurring submissions will be addressed once within the response. The format of the response submitted addresses each submission individually and therefore issues raised multiple times will only be responded to under one submission.

1. **Response to Inland Fisheries submission**

EirGrid confirms that they will abide by any condition to agree methodologies for surface water crossings with the relevant authority.

2. **Response to Gas Networks Ireland**

The existing transmission gas pipelines are identified within the EIAR. The existence of these lines was a consideration in the design of the proposed development. EirGrid will consult with GNI on matters of construction and operation.

3. **Response to GSI**

It is noted that baseline data was obtained from GSI. EirGrid notes the consideration of GSI that there are no anticipated impacts on County Geological Sites. Protection of groundwater was a key consideration in the design, routing and siting of the proposed development, including drainage design at the proposed converter station at Ballyadam. As stated within Section 7 of the EIAR, 'impacts on surface water drainage and water supply and waste water discharge networks are anticipated to be localised and brief to temporary in duration and of imperceptible to moderate significance, adverse impacts during the operation phase are expected to be imperceptible. All works will be subject to the CEMP. GSI datasets are referenced within the EIAR.

4. **Response to Dept Agriculture, Food and Marine**

EirGrid notes that the jurisdiction of the Board extends to the mean High Water Mark rather than the marine environment. The development below the HWM is currently the subject of a foreshore licence application to the Foreshore Unit of the Department of Housing, Local Government and Heritage. EirGrid is satisfied that the onshore development has been robustly assessed in terms of cumulative impact in relation to the offshore element of the project.

The need for a Fisheries Liaison Officer for the project is noted and is relevant to the offshore element of the development. Nonetheless it is stated that EirGrid will appoint such an officer to the project.

5. **Response to Dept of Environment, Climate and Communications**

EirGrid notes Government Policy

6. **Response to Dermot and Catherine O'Driscoll**

Reference to health impacts such as breast cancer are misleading. EirGrid notes that no qualification or expertise is expressed or confirmed in the submission to substantiate the observers' arguments. EirGrids brochure on EMF, the provisions of Chapter 4 of the EIAR and other studies of EMF referenced in the submission as well as the response to submissions has been prepared by highly experienced expert specialists in the area of EMF.

Reference to a single paper from the National Library of Medicine where there are more than 33 million citations for biomedical literature is not a certification of the study's quality, accuracy or relevance to a scientific inquiry. EirGrid express concerns with the observers citation of a single study and the absence of any expert qualification to interpret same. EirGrid also respectfully submits that in no way do the references cited in the Observers' submission refute the description of EMF research in the EirGrid EMF brochure (nor indeed the U.S. Environmental Protection Agency's (EPA) website, nor multiple other national and international scientific and health agencies).

EirGrid also notes that the articles cited in the Observers' submission have been reviewed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP), the International Agency for Research on Cancer (IARC), and the World Health Organization (WHO), who are the leading international authorities in this matter.

Of note, by 2007 the WHO had determined that there was not an association between magnetic fields and breast cancer in human epidemiology studies – this is referenced in the Evidence Based Environmental Studies: EMF report comprising Appendix 4.4 of Chapter 4 of Volume 3C2 of the EIAR accompanying the application.

EirGrid also notes that, in their submission, the Observers have mistakenly compared calculated values of the magnetic field from Direct Current (DC) cables with Alternating Current (AC) magnetic fields. The frequencies of DC and AC fields are different, and the results of studies at these two frequencies are not comparable.

The DC magnetic field that will be measured above a buried DC cable carrying 500 megawatts of electricity is 44 microtesla (μT) and at 10 metres (m) will diminish to 0.6 μT . These values are similar to those presented in the application in which the Celtic HVDC cable in the area of the Observers' property carrying 700 megawatts will emit a magnetic field of 15.34 μT , which will add to the earth's natural geomagnetic DC

field of about 49 μT . The total field will be less than the arithmetic sum of 15.34 μT and 49 μT because where vectors from the cable are aligned in a direction opposite to those of the earth's magnetic field, the magnetic field is partially cancelled.

The Observers also reference an IARC report that classified radiofrequency fields (as principally produced during the use of mobile phones) as a possible human carcinogen. The proposed cables will not generate radiofrequency fields and so this report is not relevant.

EirGrid advises the Board that, in order to further assist public understanding of this matter, it facilitated a 2 hour EMF webinar hosted by expert scientists, which was publicly accessible, including to all Observers to this SID application process.

EirGrid state that the proximity of water supply infrastructure with underground cable infrastructure is commonplace in Ireland and across the world, particularly where shared road space occurs. It is established practice that any interaction between the two infrastructure types occurs by agreement between an infrastructure developer and Irish Water. EirGrid notes that engagement has occurred between EirGrid and Irish Water, with further agreement on the specific details of construction intended to occur post-consent.

With regard to tree route, it is stated that significant care and concern has been undertaken in the routing of the proposed development, particularly in the wider Churchtown North and Roxborough area, to avoid impact upon mature trees; in particular this includes a portion of the underground cable being laid off-road on the western side of the local road known as the "Shanty Path" to avoid a line of mature trees – ref. Drg. Nos. 229100428-MMD-00-XX-DR-E-1114 (Site Location Plan Sheet 14 of 30) and 229100428-MMD-00-XX-DR-E-1115 (Site Location Plan Sheet 15 of 30).

With regard to alternative route options proposed by the observer, EirGrid has confirmed during pre-application engagement with the Churchtown North/Roxborough community that such routes are potentially feasible. However, for a variety of reasons, these potential options do not perform as well as the proposed development, with greater potential impact, and are therefore not identified as the Best Performing Option for the proposed development. This matter has been carefully considered, in response to a request from the community during pre-application engagement and is captured in the "Route Options Review in the Vicinity of

Churchtown March 2021” which comprises Appendix 1.10 of Chapter 1. It is concluded that the proposed HVDC cable route in the Churchtown North and Roxborough area is the best performing option across the various criteria considered in some detail.

7. Response to Declan and Margaret Kenneally

With regard to concerns relating to the integrity of the observers dwelling and water supply EirGrid states that the proposed cable laying is primarily a shallow trench operation which will occur within the existing road corridor. It is also a routine civil engineering activity undertaken by electricity infrastructure developers – and indeed other infrastructure and utilities providers across Ireland and the world - without any envisaged complexity in the vicinity of the Observers’ property. As such, EirGrid respectfully submits that there will be no likely significant impact upon the integrity of the Observers’ property or water supply.

Reference to historic road works and damage caused to house is not deemed relevant to the proposed development.

Similar issues raised in relation to EMF and alternative route, see response above.

8. Mary O’Neill and Sons

Similar issues raised to in relation to EMF, water supply and alternative route, EirGrid requests the Board to consider the previous responses to these issues.

In response to concerns regarding the potential for the development to devalue property EirGrid is not aware of underground cables having any impact on property values and has not experienced this to be the case in other projects for underground cables.

9. Response to TII

The submission notes that the proposed HVDC cable has been routed to avoid that portion of the N25 west of Midleton, which is planned for significant upgrading in accordance with National policy. This was a key consideration of alternative routing options for the HVDC cable. The avoidance of the use of the National Road between Midleton and Carrigtwohill ensures that both infrastructure schemes of National importance can occur without any likely significant conflict.

EirGrid accepts that there may arise specific and detailed issues of a technical or engineering nature in respect of the laying of cables within the National Road. In this regard, EirGrid is in agreement with TII that these are matters that are best addressed as part of post-consent engagement between the developer, TII and CCC regarding the detailed design of the development; this includes specific details of cable trenching, and matters of traffic management.

The vehicular access to the Ballyadam IDA park currently exists and is therefore not proposed as part of the application.

10. Response to Michael Coleman (c/o J.F. Williams & Co. Solicitors)

Observer is a landowner on the proposed off-road section of the HVDC cable route at Killeagh. EirGrid considers the statement that it has *“failed to engage with our client in any meaningful way in relation to the proposed route...”* to be incorrect; there has been regular and ongoing engagement between the Observer and EirGrid’s appointed Agricultural Liaison Officer (ALO) with regard to the planned use of his landholding to accommodate the proposed cable. Final project details have been sent to the landowners effected and consultation is ongoing. The laying of an underground cable within these lands will not dissect or otherwise sever the overall landholding - in a way that a road scheme might do. Access across the working strip for movement of livestock and other farm practices will always be facilitated by the developer, who will have a dedicated ALO for all dealings with landowners during the construction period.

The submission concludes that the proposed development “will have a severe negative and permanent impact on the quality and character of our client’s farmlands”. No evidence has been provided to support this statement. It is EirGrid’s opinion that this will not be the case, given the nature of the proposed development as an underground cable, and given the long-established construction methodology for laying cables in farmland.

11. The Heritage Council

EirGrid notes the comments made and is agreeable to conditions should the Board be minded to grant permission.

12. Irish Water

The submission notes that ongoing engagement is necessary in this regard, and this is acknowledged and welcomed by EirGrid. EirGrid is in agreement with Irish Water that this should occur by way of condition(s) of Approval relating to post-consent agreement of matters of detailed design and methodology; however, it is again noted that such details derive from this proposed development, and the parameters assessed in the EIAR and NIS, which will facilitate an adequate and robust EIA and AA by the Board.

13. Maurice and Ann Ahern

The observer Ann Ahern is a local councillor, consultation occurred with Cork County Councillors from November 2017 to March 2021. Volume 2B sets out the extensive public, stakeholder and landowner consultation undertaken in respect of the project over its development. To allege that engagement was poor is misleading, the project received a European award for its approach to, execution of, and commitment to stakeholder consultation and engagement.

As a consequence of curtailing face to face engagement, a number of unregistered addresses did not receive a letter updating them on the project. This was rectified. Where consent is not forthcoming to accommodate a passing bay, temporary road closures and traffic management will be required. As outlined above alternatives have been robustly assessed within the EIAR. Hedgerows will be replanted with native species and bolstered with additional planting, improving baseline conditions for biodiversity.

Flooding is adequately addressed in Chapter 7 of the EIAR, Section 7.6.2.4 concludes that the overall flood risk for the receiving environment of the proposed HVDC cable can be adequately managed during the construction phase, and is negligible during operation of the proposed development. EirGrid confirms that the proposed development will have no impact upon water supply to Midleton.

EirGrid refers above to the submission of Irish Water (No. 12) who are satisfied that all such matters relating to the interface of the proposed development with existing water supply infrastructure can occur by way of post-consent agreement.

With regard to increased risk of leukaemia in children, c) exposure levels to local residents and person exercising near the cable, d) a need for additional studies, and

e) a lack of independent medical reports on the topic. Much of these concerns are premised on mistakenly comparing calculated values of the magnetic field from the HVDC cables with HVAC magnetic fields. The frequencies of DC and AC fields are different and the results of studies at these two frequencies are not comparable.

EirGrid would also note that the statistical association between HVAC magnetic field values above 0.3 to 0.4 μT and childhood leukaemia in epidemiology studies published in 1999 and 2000 and summarized in meta-and pooled analyses by IARC (2002) and WHO (2007) were estimates of time-averaged exposure to magnetic fields over a 24- or 48-hour period. In no way can these be considered the same as the spot exposure one might encounter for a very short time from the use of an appliance or walking above an underground power line.

The applicant contends that considerable expert knowledge about fields from HVAC and HVDC transmission infrastructure in underground and overhead configurations is therefore available from operating experience in Ireland and many other countries. Studies have been carried across the world for over 40 years with particular focus on childhood leukaemia and no causal relationship has been demonstrated.

The submission refers to a Community Benefit Scheme being implemented for the proposed development. This is being progressed in the context of a Community Forum that has been set up for the project, and which by December 2021 has met once to establish membership of the forum and twice more as an established group. This is an ongoing independently-chaired forum that will be in place during the consenting, construction and operational phases of development. It is premature of the Observers to conclude that the community benefit arising from this project is not capable of reaching communities in proximity to the project – that is the focus of the Community Forum. A clear objective of those members of the forum who are participating is to assure the best outcomes are achieved for all communities impacted by the project.

The submission alleges a conflict of interest, with an employee of EirGrid, whereby the employee previously worked in An Bord Pleanála. EirGrid is satisfied that no such conflict arises and recognises the independence of the Board as statutory decision maker for Strategic Infrastructure Development proposals.

14. **Fergal and Kay Abernethy**

Response to public engagement and EMF are as above, however the applicant further states that with regard to EMF the condition of the road above the cables will have no effect on the magnetic field from the cables or water quality in water mains. With regard to public engagement and consideration of alternative, it is stated that alternatives were being considered regularly and as a direct result of engagement with residents.

With regard to radon it is stated that underground cables do not affect exposure to radon in the water (or in the air). Water quality is determined by the source of the water and the physical condition of water mains and other piping. Radon gas is neither attracted to the magnetic fields from the underground cables nor does it somehow seep into water mains—radon enters water supplies at the source of the water not during its distribution in watermains and connected pipes.

With regard to the potential alternatives, EirGrid agrees that there are potential alternative routes, and has never suggested otherwise; however, the proposed development is considered to comprise the Best Performing Option against a variety of criteria, as set out in the Route Options Review, and in general in Chapter 1 (Alternatives Considered) of Volume 3C2 of the EIAR.

15. Development Applications Unit (DAU)

EirGrid confirms that in no way does it intend to suggest that mitigation measures are optional; rather, it is considered a best approach to agree any specific details of the stated mitigation with the relevant authority on a location-specific basis. Conditions are proposed with regard to LED lighting at the Converter Station and in relation to hedge reinstatement.

EirGrid submits that the EIAR demonstrates a suite of measures not just to avoid or reduce biodiversity impacts, but also to enhance and/or compensate for impacts. Work stoppages during bird breeding season only relate to works at river crossings and is agreeable to manage this issue by way of condition.

With regard to works at Ballyvergan Marsh it is stated that technical considerations on cable performance must be considered in parallel with nature enhancement objectives, and backfill material will be required in the trench below, beside and above the finished duct at Ballyvergan Marsh to meet cable performance specifications. EirGrid is willing to collaborate on this as far as practicable. Indeed, EirGrid welcomes the fact that the Department is also willing to collaborate in the development of

mitigation and enhancement measures. However, EirGrid again notes that a full suite of detailed mitigation measures have been proposed in the EIAR and NIS.

Underwater archaeology relates to the Foreshore Licence.

EirGrid is satisfied that an appropriate cumulative impact of this and all topics between the offshore and onshore elements of the overall proposed Celtic Interconnector project has been undertaken and included in the various application particulars submitted to the relevant consenting authorities, including the Board.

16. Conor Healy / Cork Chamber

The submission stresses the regional importance of the benefits arising from the proposed development. In particular it identifies the project as “a key enabler of future economic growth and a diversified energy supply”. EirGrid considers this to be of significance to the Board in its determination as to whether the proposed development is in accordance with the principles of proper planning and sustainable development.

17. Denis Kelleher

Concerns in relation to EMF are set out above. the maximum DC magnetic field contributed from the buried cable at 1 metre above the road covering is 15 microtesla (μT). The earth’s natural geomagnetic field in Ireland is about 49 μT . Together, the DC geomagnetic field from the earth and the DC magnetic field from the cables will be slightly more or slightly less than the earth’s magnetic field within 10 m of the cables (because of partial addition or cancellation of the magnetic field by each source). The ICNIRP 2009 standard of 400,000 μT allows exposures up to 8,000 times higher than the total of the magnetic field above the cables buried under the street.

There is no suggestion within the ESB booklet that “kept away from residential areas”. EirGrid does not agree that the area of the Shanty Path, being the road referred to by the Observer, comprises a “heavily populated area”, for the purposes of applying this precautionary principle. The submission notes that there are only some 33 households resident along this road of approximately 1.1 km length.

Pipe laying is an established practice, and the installation process will be in accordance with the CEMP submitted. EirGrid are not aware of the detailed circumstances of the referenced pipelaying from Mogeely to East Ferry, and therefore have no comment on same.

With regard to access to farms, EirGrid again notes that this is a fundamental matter for all cable laying within local roads across Ireland, whereby local access is arranged and managed. This is set out in Chapter 3 (“Onshore Construction Phase Activities”) of Volume 3C of the EIAR.

The Greenway has not been determined as the best performing route. The proposed route will avoid Castlemartyr and Killeagh and run off road before these settlements. The width of the N25 leading to these settlements is wide and includes wide hard verges which will facilitate construction of the proposed cable without any disruption to road users.

18. Mark Douglas

With regard to landowner consent it is stated that EirGrid will also separately seek authorisations from the CRU for development of an interconnector, and for the laying of cables in both public roads and across private lands. In particular respect of authorisations for the laying of cables (“Section 48” and “Section 49” authorisations), these can only be obtained from the CRU following the receipt of a planning consent in respect of a proposed development. Overall, however, these authorisations are separate to the Planning Code that forms the basis for this application and response submission.

The Observer alleges that the application is invalid given that the townland of Churchtown is used in the detailed description of the area of the proposed development as set out in the public notices. In actual fact, while the area is known locally as Churchtown North, it is clear from official source data – comprising the OSI 1:50,000 mapping used as the Site Location Plan, Drg. No. 229100428- MMD-00-XX-DR-E-1100 – that the official townland name is Churchtown. In preparing the public notices, EirGrid restricted itself to official source data, rather than local variations of same name.

Without prejudice to this response, it is clear that any confusion that might have arisen by the use of the official townland name, has not in any way impeded parties from the area in making submissions to the Board in respect of the application.

The assessment of noise and vibration is set out in Chapter 13 of the EIAR. Impacts to water supply have been addressed in response to other submissions above as have responses to EMF concerns and Radon. The submission refers specifically to EMF

exposure in the workplace. In response, EirGrid notes that the Irish Health and Safety Executive (HSE) follows the European Union's Guide to Good Practice for Implementing Directive 2013/35/EU Electromagnetic Fields, publicly available at https://www.hsa.ie/eng/Publications_and_Forms/Publications/Physical_Agents/EU_EMF_Guide_SME.pdf; this explains that risk assessments are meant to address exposures to very high levels of EMF that exceed limits for safe occupational exposures, thereby preventing direct and indirect effects.

The Reference Level for static (DC) magnetic fields in Table 2 of CR 1999 is 40,000 μ T o The Reference Level for AC magnetic fields at 50 Hz in Table 2 of CR 1999 is 100 μ .

The passing bay is not in place at the location of the proposed joint bay and is proposed. Landowner consent has been refused for same. In the absence of consent for the proposed passing bay the road will likely be closed for the duration of the construction phase with diversions put in place. It is not fundamental to the long term sustainability of the interconnector.

With regard to biodiversity specific planting will be agreed with Cork County Council as part of the post-consent detailed specification of works.

The road will be fully reinstated on completion of the proposed works.

Impacts to local community will be localised and temporary, as for any civil engineering project, from the laying of cables in the public road; such impact is not considered to be significant nor permanent.

The community benefit fund will be distributed by the Community Forum on which there are representatives from the Churchtown North community.

19. **Stephen and Mary O'Brien**

The existing 220 kV substation will accommodate 400 kV electricity infrastructure specifically and solely associated with the operation of the Celtic Interconnector Project. However, this is not part of any wider plan to upgrade the substation to a full 400 kV facility.

EirGrid notes that the potential for environmental impact from OHL is very different than that with underground cables and associated substation infrastructure as

proposed. There is no potential for any cumulative effects in this regard related to the proposed development.

The application particulars are all available to the public – as assured by the governing legislation pertaining to Strategic Infrastructure Development.

20. **Simone O'Flynn**

Response to consultation is as above as is the response in relation to alternatives. The observers states that other options would be less environmentally destructive and less impactful to the health and wellbeing of residents. EirGrid respectfully submits that the laying of a cable in the public road, while involving necessary temporary nuisance during construction, will not cause any such alleged destruction to the environment, nor impact on people's health and wellbeing. Not only is this addressed with objectivity in the EIAR accompanying the application, but it is also EirGrid's experience as the developer of the long operational East West Interconnector in North Dublin and Co. Meath, and from its long involvement in the planning and development of many underground cable circuits across Ireland.

Contrary to the Observer's concern, the proposed cable route has been carefully chosen to ensure it is capable of accommodating the proposed HVDC cables – as noted in the application particulars, this will occur within a trench of less than 1 metre width, with joint bays at periodic locations, serviced by a passing bay if required; the road will be reinstated following the cable and joint bay works within the road. EirGrid also notes that cable laying is a linear development with no extended works at any one location along the cable trench.

No impacts are expected in relation to drinking water, interference with the flood relief or to the Owenacurra River.

21. **Noelle Murphy on behalf of Road L6989 Residents Association**

EirGrid has sought to make this application as legible as possible, by breaking up the documents and mapping into sections and areas, such as the landfall area, the HVDC route, the converter station, the HVAC route and the connection point (Knockraha).

Continuous engagement with the residents of Knockraha has occurred and is ongoing. The Contractor will develop and implement a stakeholder communications plan which

will facilitate community engagement prior to the commencement of construction. This will be in addition to ongoing community liaison by EirGrid as project developer.

Reference is made to previously permitted development at Knockraha and noncompliance pertaining to same. It is stated that the Observers do appear to be using this application process to seek to address alleged deficiencies with previous and separate projects, undertaken by a different party. EirGrid respectfully submits that there is no cumulative impact arising in respect of the proposed development currently before the Board with existing development at Knockraha 220 kV substation.

The Observers take issue with the Traffic Management Plan included in this application on the basis that a separate plan associated with a separate development was not enforced by a separate developer. EirGrid is satisfied that the TMP submitted with the application is robust, practical and enforceable;

It is EirGrid's respectful submission that, given the proposed transformers will be located entirely within the existing substation palisade fence, it is both reasonable and appropriate that the existing built form of the substation forms the context for the visual impact assessment, and its conclusions in this matter. Moreover it must be noted that the proposed transformers are located at the south-eastern portion of the substation, at generally the furthest point of the substation from visual receptors, comprising the existing dwellings along the local road some distance to the west.

The submission alleges, based on "past experience" that there will be an issue with EirGrid's proper reinstatement of land identified for a proposed laydown compound at Knockraha. In response, we note to the Board that there is no such "past experience" in this area with EirGrid as developer. On the other hand, the reinstatement of land used to facilitate the construction of the proposed development will be part of the requirements of EirGrid for the appointed contractor – this is explicitly confirmed at Section 3.6 of Chapter 3 (Onshore Construction Phase Activities) of Volume 3C2 of the EIAR accompanying the application.

EirGrid notes to the Board that separate noise mitigation measures, including a noise barrier and screen planting, are currently being undertaken at the substation, for the benefit of residents, and in consultation with the community. EirGrid is also satisfied that the Noise assessment was carried out by competent and experienced specialists in accordance with best practice and in reference to established methodologies.

With regard to security at the Knockraha substation, this is a matter for ESB Networks and there will be no cumulative impacts with the proposed development.

The Observers challenge the number of transformers proposed at the substation, and reference Step 4 consultation on this matter. The submission is correct that at that point in time, consideration was being given to a single 3-phase transformer of significant scale and size, and of non-typical design. However, given the potential risk of profound impact to the operation of the Celtic Interconnector project with the malfunction of this single point of connection (and thereby a single point of failure), it was ultimately proposed to install 3 single-phase transformers, of conventional and established design, with a spare transformer for use in the (albeit unlikely) scenario of malfunction of one of the transformers.

With regard to the attraction of similar development to the area in the vicinity of Knockraha, EirGrid notes that the proposed development is an end-to-end connection between the national grids of Ireland and France; of itself, it is not an attractor for future development at the substation. Any other future developments would be subject to a separate planning process.

22. Mark Douglas on behalf of The Churchtown North Residents Association

This observer has made a separate submission on his own behalf as have others who are part of the association. Many issues raised have therefore been similarly raised within other submissions. EirGrid chose not to repeat these issues in their response.

The matter of the jurisdiction of the Board, and a certain ambiguity of the mean High Water Mark, is addressed at Section 6 of Volume 2A (Planning Report) of the application. It is clear that the jurisdiction of the Board extends to the mean High Water Mark. It is also clear that the red line boundary is not a Legal prerequisite for SID applications, but does assist in aligning such applications as closely as possible with standard “Section 34” applications. Having regard to all this, there is no question but that the extent of this SID development comprises the extent of the Board’s jurisdiction; the area of proposed development below the mean High Water Mark is under the authority of the Department of Housing, Local Government and Heritage, for which a Foreshore Licence application has been concurrently submitted.

Consultation in relation to development within other jurisdictions is in accordance with each jurisdiction’s established rules and processes; however, formal Transboundary

consultation occurs where likely significant impacts are identified and the Board will be aware that this is a Member State to Member State process.

A joint Environmental report has been submitted for the proposed development in full. Issues pertaining to deficiencies in public consultation are addressed within other submissions above.

The need for the proposed development has been established at European, National, Regional and Local policy level as presented in Volume 2A (Planning Report).

Alternatives considered included strategic connection points (West Wexford or Cork), potential landfall locations, potential converter station locations, and alternative route options.

There is no obligation to carry out EIA of all alternatives, but rather only of the proposed development. As we have noted in respect of other submissions above, and as addressed at Chapter 1 (Alternatives Considered) of Volume 3C2 of the EIAR accompanying the application, criteria in addition to environmental are considered by EirGrid in respect of various alternatives. This includes the consideration of alternative route options in the vicinity of Churchtown North, prepared as the Route Options Review in the Vicinity of Churchtown and comprising Appendix 1.10 of Volume 3C2 of the EIAR accompanying the application.

EirGrid is unclear why the Observers believe a Substitute Consent is required for development on the IDA Ballyadam landholding. The landholding has been the location of a previously permitted development (ABP Ref. PL04.222364); however, the proposed development does not rely on that permitted development. Rather an entirely new proposal is before the Board in this application, which will be subject to EIA and AA by the Board.

The Observers give no substance to their argument that the information before the Board in respect of hydrology is not sufficient.

The Observers are incorrect that major accident risk at Ballyadam has not been considered in detail in the application. Rather, the Board will note Chapter 14 (Major Accidents and/or Disasters) of Volume 3C2 of the EIAR accompanying the application. In particular, EirGrid draws the Board's attention to Table 14.3 thereof, which identifies potential impacts, mitigation measures and likely significant adverse effects for a range of potential major accidents/disasters.

The proposed converter station is not considered to be a material contravention of the Cork County Development Plan and this consideration is shared by Cork County Council in their submission.

Matters pertaining to biodiversity and habitats within the offshore element of the development are dealt with within the Foreshore licence application.

Adequate assessment of bats and birds has been carried within Chapter 8 of the EIAR. Similarly, Chapter 7 examines surface water and flood risk.

With regard to the development in the context of the Water Framework Directive, this is discussed in Chapter 6 & 7 of the EIAR.

Issues pertaining to noise, vibration, EMF, radon etc are responded to above.

23. Giancarla and Michael Alen-Buckley (c/o Reid Associates)

EirGrid disputes the suggestion that grid infrastructure planning is not integrated with land use planning. It is clear that grid development in general, but the Celtic Interconnector project in particular, is addressed at planning policy level in the National Planning Framework, the Southern Regional Spatial and Economic Strategy, and the Cork County Development Plan.

Having regard to current planning policy, and to strategic energy policy at National and European levels – as set out in the submissions of both the Department of Energy, Climate and Communications (No. 5) and of Cork County Council (No. 26), EirGrid is satisfied that the proposed development is in accordance with all relevant policy, as well as with the principles of proper planning and sustainable development.

24. Fergal Gough

The proposed development route has been designed in consultation with TII and will not affect the planned upgrade of the N25.

There is various recorded cultural heritage across the overall Ballyadam landholding, none of which occur on the site of the proposed converter station. It is unclear on what basis the Observer concludes that the proposed development would interfere and possibly have a detrimental impact on recorded cultural heritage of the overall landholding. EirGrid refers the Board to Chapter 10 (Archaeology and Cultural Heritage) of Volume 3C2 of the EIAR accompanying the application; this proposes best practice measures to mitigate any potential impact of the proposed development on the cultural heritage of the area.

Flood risk as aforementioned is addressed in chapter 7 of the EIAR.

25. Knockraha Area Community Association C/O Eddie Mackessy

This submission is similar to that submitted on behalf of Road L6989 Residents Association. Responses will therefore not be repeated.

Issues pertaining to consultation are raised and have been responded to above.

The proposed interconnector will not result in system insecurity or undermining of the Grid. EirGrid state it is unclear on what basis of expertise the Observers are making such allegations.

The Observers suggest that consideration should be given to creating a new substation node at Ballyadam, as part of the converter station development, to facilitate power flow from the Celtic Interconnector. This entirely misses point that the Celtic Interconnector is in simplest terms a cable link between the national grids of Ireland and France; to create a new substation would mean that an associated circuit connections would still require to be developed between any such new substation and the existing grid.

Irrespective of the Celtic Interconnector project, the existing ESB Knockraha substation is strategically the most important substation node in the southern region of Ireland. It is a robust and strong part of the national grid, and in EirGrid's view the most appropriate connection point for the Celtic Interconnector project.

There will be no upvoltage of the existing substation as a result of the proposed development. Rather, the proposed 400 kV/220 kV transformers will transform power down to 220 kV for direct access onto the existing 220 kV infrastructure – and vice versa in the context of export of power on the interconnector.

In response to the concern of the Observers that the CEMP does not adequately address matters of traffic management, EirGrid draws the attention of the Board to the Traffic Management Plan submitted with the application particulars; this clearly identifies construction route options for the proposed works at the existing Knockraha substation.

The Observers take issue with the content and methodology of the visual impact assessment at Knockraha substation. EirGrid again notes in response that this element of the proposed development comprises a total of 4 no. transformers within the existing substation footprint and surrounded by an existing palisade fence.

Overall, EirGrid is entirely satisfied that this element of the visual impact assessment, including photomontages, are robust, of high quality and prepared by very experienced specialists in this particular field.

Noise and Vibration are examined within Chapter 13 of the EIAR. There is an unfortunate assumption that the addition of the proposed transformers at the substation will double the existing noise output at the substation. This is not a correct calculation of noise.

The Observers make the assertion that a separate EIA should be undertaken for the portion of the proposed development at Knockraha, and moreover that the application might be invalid in not having done so. Clearly to do so would be an unwelcome form of project splitting.

With regard to cumulative assessment EirGrid submits that the submission misses the fundamental requirement of cumulative impact assessment, which is to assess a proposed development in cumulation with other existing and/or approved projects and with existing development (which comprises a baseline receiving environment). Any such potential future projects (which are not planned) will also have to be determined in such context.

With regard to existing development at Knockraha, it is considered by EirGrid that the observers appear to imply that the proposed development should have resolved the perceived visual impact arising from the existing infrastructure. EirGrid notes that the existing infrastructure is in the ownership of ESB Networks, and its potential for alteration is not a matter for consideration in respect of the merits of the proposed development, comprising an underground cable and 4 no. transformers within the existing substation. EirGrid respectfully submits that there is no cumulative impact arising in respect of the proposed development currently before the Board with existing development at Knockraha 220 kV substation.

The proposed development by virtue of its nature will not have any impact on Cultural Heritage of the area.

Other concerns are raised and addressed throughout the response above. EirGrid respectfully submits that the project is needed as a matter of European and National priority, and that the proposed development is entirely in accordance with the principles of good planning practice, and with the principles of proper planning and sustainable development.

It is stated by EirGrid that the observers seem to have an issue with electrical infrastructure development in the area over previous decades and not with the proposed development itself.

26. Cork County Council

EirGrid welcomes Cork County Council's comments and the positive support that the Council have outlined within their submission. It is recognised that impacts in relation to visual amenity and roads and traffic will be temporary and not significant. It is further welcomed that the Council are satisfied that no impacts will arise in relation to Cultural Heritage, and insignificant impacts in relation to issues such as flooding, population and human health and air and climate. EirGrid are satisfied that issues raised in relation to construction methodologies and in relation to Appropriate Assessment can be adequately addressed by way of condition.

The Planning Report proposes the provision of a condition for Community Gain, having regard to Section 37G of the Planning and Development Act 2000 (as amended). While this is ultimately a matter for the Board, EirGrid notes that the application for Approval occurs in reference to Section 182A of the Act which does not make provision for conditions of community gain.

Appendix A of the CCC report suggests conditions, it is submitted by EirGrid that many of these can be agreed by way of umbrella conditions for details to be agreed in the context of the CEMP, Traffic Management Plan and Waste Management Plan. EirGrid confirms to the Board that the design of joint bay is a standard for ESB Networks in the development of underground cables across the public road network of Ireland. The specific detailed design of development includes the diversion of existing services if required and/or provision of space for future services and utilities. The response to this submission includes responses to all Cork County Council internal reports which are summarised hereunder

- Roads – EirGrid is satisfied that no impacts will occur in terms of significant traffic impacts or public amenity, construction details will be agreed and aligned with improvement works on the N25 and in relation to the car park and Claycastle.
- The Report makes reference to a “possible” N25 relief road of Castlemartyr. This appears as an indicative line in the East Cork

Municipal District LAP 2017; however, it is acknowledged that it is not identified in the current National Development Plan. This matter has been addressed at Chapter 1 (Alternatives Considered) of Volume 3C2 of the EIAR accompanying the application. In summary, given that there is currently no technical nor other information that might inform an alignment, and given that there is currently no guarantee of capital funding of any such relief road, it is the case that the provision of such detail – as would be necessary to facilitate any specific routing of the proposed HVDC cable - will not be forthcoming in the short or medium terms. However, the proposed cable route has been routed in relatively close proximity to the built up area at the northern edge of the town precisely in order to avoid any subsequent future conflict with a relief road corridor, should such development ever proceed. It is therefore submitted that EirGrid has used its best endeavours to minimise the potential for compromising any potential scenario of a future route selection process.

- Drainage details near to the converter station can be amended if required at the time of the road scheme. It is noted that the road scheme referred to within the submission does not have funding and is not an identified scheme within the NDP. As such it is considered unreasonable and impossible to amend the proposed development on this basis.
- EirGrid proposes to maintain the lines of communication with the NRDO and CCC throughout the development of the proposed project.
- Ecology – Optimisation of Marsh mitigation has been agreed with EirGrid, CCC (Ecology Office), the NPWS, and Irish Rail and forms part of the EIAR. Monitoring is proposed and compensation in the event of mitigation failure.
- The use of seeds will be Irish native species only
- Impacts to hedgerows will be minimised and are of local significance.
- All landscaping will be carried out in agreement with CCC.
- Works at Longstown are unavoidable and there is compensatory hedgerows proposed at the Ballyadam Converter station site.

- EirGrid are in agreement to conditions relating to monitoring.

27. **Pat Burke**

The issues raised in relation EMF have been addressed above.

28. **SSE Renewables**

Support is welcome.

29. **Kieran O'Driscoll**

The issues raised within this submission have been responded to above and will not be repeated.

30. **Tom Fitzgerald on behalf of Roxborough Stables Ltd.**

Many issues raised are addressed within other submission above. With regard to the potential for EMF to impact horses, there is a paucity of research specifically on EMF and horses, the body of evidence on humans and other animals does not indicate adverse health effects at the very low exposures that may be experienced by horses from the proposed underground cable. EirGrid also notes that the cable will be buried in the public road, at some remove from the active area of the Observer's property where horses might be present.

With regard to the potential for impacts to pregnant horses by reason of unnecessary stress and worry. While sympathetic to the concerns of the Observer, EirGrid respectfully notes that the proposed development in the area of the Observer's property comprises non-complex civil engineering works primarily in the public road. The Observer has not recorded any evidence of such impact arising from the laying of water supply infrastructure in the public road in the vicinity of his property – which has a generally similar construction methodology – nor in other works associated with the use of machinery in the vicinity of the property such as house building, road maintenance, or hedge cutting. On this basis, EirGrid cannot envisage how the proposed development would constitute a particular form of development that would result in such impact to horses within the Observer's property.

There is no evidence that property devaluation arises from the laying of underground cables in a public road.

31. **Tom Fitzgerald**

Many issues raised have been addressed above. With regard to property disturbance no hammering or piling is required. It is stated that there are a number of new houses in the vicinity of the Observer's property; the groundworks for construction of the foundations of these properties would have resulted in significantly greater potential impact in terms of vibration than the proposed development in this vicinity.

EirGrid notes the observers contentions in relation to temporary access to his lands for passing bays and states that road closures will be required in the absence of such consent.

32. **Catriona Murphy**

Issues raised have been responded to above and will not be duplicated hereunder.

33. **Ann Moore**

Issues raised have been responded to above and will not be duplicated hereunder.

34. **Barry Fitzgerald**

Issues raised have been responded to above and will not be duplicated hereunder.

35. **Barry Fitzgerald on behalf of Roxborough Stud Ltd.**

Issues raised have been responded to above and will not be duplicated hereunder.

36. **Gary and Clare Crowley**

Issues raised have been responded to above and will not be duplicated hereunder.

EirGrid does, however, disagree with the assertion in the submission that "High voltage underground cabling is a new venture in Ireland" – it has been a fact of the national transmission and distribution grids for decades. The Board will also note that it has also been a fact of national grids all over Europe and globally – the experience for underground cable construction and operation in Ireland is no different to that worldwide. It is precisely for this reason that a grid operator and developer such as EirGrid can have confidence in understanding the outcomes of the operation of grid infrastructure.

EirGrid notes the observers concerns in relation to traffic safety and states that a traffic management plan accompanies the application in Appendix B of the CEMP, which

comprises an Appendix of Volume 3C2 of the EIAR. It is further stated that this plan will be developed further in consultation with CCC in order to protect road users further.

Construction area will not extend beyond the boundary of the proposed development site.

Overall, it is acknowledged in the application that the proposed development will have a temporary impact on receiving communities during its construction – as would any civil engineering project. However, the mitigation measures proposed, including robust and sensitive traffic management measures, will reduce potential local impact, and in EirGrid's view is acceptable in order to deliver this project of European importance.

The assessment of alternatives was carried out robustly and extensive public consultation was also carried out.

37. **Alan Fitzgerald**

Issues raised have been responded to above and will not be duplicated hereunder.

EirGrid acknowledges that a number of submissions expressing concern with the proposed development arise from residents and landowners in the area of Churchtown North and Roxborough, comprising approximately 1.1km of the HVDC cable route. While outside the scope of this application process, EirGrid will continue to seek to engage with this community to address and resolve concerns raised both to EirGrid in pre-application engagement, and to the Board by way of written submissions.

3.0 **Planning History**

Given the nature of the proposed development and the location of the cable within the public road there are a large number of applications for one-off houses particularly on the local roads within the rural area. Relevant permissions of similar developments include:

ABP PL.17.VA0002 - East West Interconnector – Permission was granted for a submarine cable from Ireland to Wales. The landfall section of the development commenced at North Beach, Rush Co. Dublin continued to a converter station in County Meath. This development also included a fibre optic link for operational control, communication, and telemetry purposes.

ABP PL.02.VA0017- Interconnector between Ireland and Northern Ireland – the SID element – a 400kV overhead line was granted permission in December 2016.

Kerry County Council ref: EX371 - Killpaddoge to Knockanure 220kV underground cable project Co. Kerry, this development was deemed to be exempt development and has similarities to the proposed project in terms of laying an underground cable.

3.1. **Landfall at Claycastle Beach**

No applications of note.

3.2. **Converter Station site at Ballyadam**

Ref. 06/8898 – Permission granted November 2006 for site development works to facilitate the future construction of biotechnology manufacturing facility to include temporary construction access with associated widening of road, signalised junction at intersection off N25 and Hedgy Boreen with associated road works, 20kV substation in a compound with switchgear building and 2 no. transformer pads, gas compound/above ground installation with associated control buildings, earthworks to include cut and fill operations to prepare the site for construction of future buildings, attenuation/retention pond, demolition of 2 dwelling houses, internal access roads, provision for 600 no. surface level car parking spaces, gravelled areas for future buildings, retaining wall and lighting standards, underground services and associated manholes, site boundary treatments to include security fencing and landscaping and all associated and ancillary site development works.

Ref. 06/8669 - permission granted August 2006 for the erection of 2 steel masts to facilitate the retirement of portion of overhead line.

Ref. 06/10555 – permission granted November 2006 for construction of enclosed 110kV indoor substation and boundary fence.

3.3. **Knockraha Substation**

There is a substantial planning history associated with the infrastructure on this substation. The following is of note:

Ref. 13/6402 (PL04.244030) – Permission granted on appeal for the extension of the existing 220 kV substation busbar in an easterly direction by approximately 109m

including the installation of two 220 kV wing couplers, 2 sectionalising circuit breaker bays with associated equipment, six 24m lightning masts and 2 new line bays with associated equipment; The proposed extension of the existing busbar will occur on lands of approximately 1.14ha within the associated proposed easterly extension of the existing substation lands, with the associated extension of the existing substation perimeter fence line by approximately 72m to the east; Associated construction of 5 lattice steel towers adjacent to the northern side of the substation (as extended) which are up to approximately 46m above ground level, with associated conductors; Associated removal of 3 existing lattice steel towers adjacent to the northern side of the existing substation with associated conductors; Associated reconfiguration of the overhead line entries from the north and north east into the existing substation to facilitate the works within the substation; Associated removal of the westernmost existing transformer within the substation, and other associated equipment including 1 gantry, 6 sets of redundant overhanging conductors including 2 associated gantries and 1 220 kV coupler bay with its associated equipment; Associated construction of new internal access road, boundary treatment and site development works.

Ref. 08/7931 (PL04.231154) – Permission granted on appeal for alterations to existing 220kv station to include installation of one 220Kv to 110Kv transformer, associated bund wall and noise attenuation barriers, 4 no. gantry structures, surge arrestors, current transformers, voltage transformers, circuit breakers, disconnects pantographs, 2 control cabins and associated site works.

Ref. 08/7401 - Permission granted for alterations to existing station comprising of new noise barriers to existing transformers T2101 and T2102 and associated site works.

Ref. 04/699 – Permission granted for a 36 metre high, free standing communications structure, carrying antenna and communication dishes with associated ground mounted equipment cabinets.

Ref. 03/397 – Permission granted for the installation of a waste treatment system in the existing sub-station site.

Ref. 01/2926 (PL04.126105) – Permission granted on appeal for refurbishment of 220kv station to include replacement of control building, high voltage equipment, additional bay kiosks and cabling ducting.

3.4. Midleton/Youghal Greenway – Part 8

This greenway is located along the disused railway line from Youghal to Midleton and is c.23km in length. It was approved in January 2019 under Part 8 and is scheduled to be complete c.2023.

4.0 Policy Context

4.1. European Context

4.2. REGULATION (EU) No 347/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 April 2013

Annex I Energy Infrastructure Priority Corridors and areas

(1) Northern Seas offshore grid ('NSOG'): integrated offshore electricity grid development and the related interconnectors in the North Sea, the Irish Sea, the English Channel, the Baltic Sea and neighbouring waters to transport electricity from renewable offshore energy sources to centres of consumption and storage and to increase cross-border electricity exchange. Member States concerned: Belgium, Denmark, France, Germany, Ireland, Luxemburg, the Netherlands, Sweden, the United Kingdom

4.1. National Planning Framework

1. Reference is made at Section 8.4, 'Co-ordination of Investment in Infrastructure', to energy and to collaboration in the energy sector, driven by the single electricity market and combined with the development of interconnection such as the East West Interconnector (EWIC) in Ireland and the Moyle Interconnector in NI which has reduced energy prices, enhanced energy systems resilience and diversified away from a near total reliance on fossil fuels. Reference is made to the need for a new interconnector on the island of Ireland and to the work Ireland is doing with other countries such as France to explore potential for electricity interconnection and the continued support of relationships with European neighbours to enhance our international connectivity.
2. National Strategic Outcome 8 relates to the transition to a low carbon and climate resilient society which in terms of Green Energy includes reference to a national

interconnector (sub-sea ring around Ireland) or other solutions offer the potential to connect Ireland to the EU electricity grid system.

4.2. Policy Statement on Security of Electricity Supply, Department of the Environment, Climate and Communications. 2021

The Government recognises that:

- ensuring security of electricity supply continues to be a national priority as the electricity system decarbonises towards net zero emissions;
- there is a need for very significant investment in additional flexible conventional electricity generation, electricity grid infrastructure, interconnection and storage in order to ensure security of electricity supply
- The Government has approved that:
 - it is appropriate for additional electricity transmission and distribution grid infrastructure, electricity interconnection and electricity storage to be permitted and developed in order to support the growth of renewable energy and to support security of electricity supply;
- The challenges to ensuring security of electricity supply include:
 - ensuring adequate electricity generation capacity, storage, grid infrastructure, interconnection and system services are put in place to meet demand – including at periods of peak demand;
- It is expected that the majority of renewable energy generated by 2030 will be from wind and solar. These sources of renewable energy are variable in nature and therefore will require other technologies to both support their operation and provide electricity supplies when they are not generating. This will require a combination of conventional generation (typically powered by natural gas), interconnection to other jurisdictions, demand flexibility and other technologies such as energy storage (e.g. batteries) and generation from renewable gases (e.g. biomethane and/or hydrogen produced from renewable sources).

4.3. **Irelands National Policy Statement on Electricity Interconnection (2018)**

This policy statement sets out the official overall perspective on electricity interconnection in Ireland and is designed to provide high-level policy guidance to all stakeholders, in particular to the Commission for Regulation of Utilities (CRU) as it considers applications from project promoters.

4.4. **Irelands Transition to a Low Carbon Energy Future 2015-2030**

4.5. The White Paper 'Ireland's Transition to a Low Carbon Energy Future 2015-2030' is a complete energy policy update. A framework to guide policy and the actions that Government intends to take in the energy sector from now up to 2030 are outlined within this document. The paper takes into account European and International climate change objectives and agreements, as well as Irish social, economic and employment priorities.

- **Section 242** - a feasibility study on an interconnector with France [58]. The technical analysis commissioned to inform the development of the White Paper [16] suggests that this would enable the reduction of GHG emissions

4.6. **National Development Plan 2018-2027**

1. The National Development Plan 2018 - 2027 (NDP) sets out the investment priorities that will underpin the implementation of the National Planning Framework, through a total investment of approximately €116 billion. In respect of NSO 8, the transition to a low carbon and climate resilient society, in respect of Commercial & Private Sector Investments reference is made to enhanced electricity interconnection, including the Celtic Interconnector to France and further interconnection to the UK.
2. It is also stated that EirGrid, who manage, develop and operate the transmission grid, will continue to progress a number of important projects within the All-Island Electricity Market, and will continue to assess opportunities for interconnection with neighbouring electricity markets, for example, the Celtic Interconnector to facilitate the diversification of our electricity supply sources. Increased interconnection would also be expected to put downward pressure on wholesale electricity prices.
3. The proposed Celtic interconnector is highlighted within the Plan noting that *“It would improve security of electricity supply in Ireland and France by providing a reliable high-*

capacity link between the two countries; diversifying our sources of supply; increase competition in the all-island Single Electricity Market; and support the development of renewable energy, particularly in Ireland. The proposed 700 megawatts capacity would add to available generation capacity levels and assist in meeting future demand growth. It is also a substantial step forward in the completion of the Ireland-France Sustainable Energy Roadmap, which both RTE (French counterpart - Réseau de Transport d'Électricité) and EirGrid intend to further actively support with all relevant stakeholders and ensure that Ireland benefits from the development of regional markets at EU level'.

4.7. Regional Spatial Economic Strategy for the Southern Region

1. The RSES for the Southern Region came into effect in January 2020 and includes County Cork. Chapter 8 deals with Water and Energy Utilities with Section 8.2 of the document dealing with the Strategic Energy Grid. The document states that *"the Region is particularly rich in renewable energy resources and contains significant energy generation infrastructure of national and regional importance, including hydro-generation, thermal generation at Moneypoint, Tarbert, Marina, Aghada, Whitegate and Great Island"*. It continues by stating that *"even with significant energy demand centres, the Region is currently generating more than demand at present EirGrid's Grid Development Strategy, Your Grid, Your Tomorrow addresses the overall need of the system and will increase transfer capacity from the south and southwest to the Eastern and Midland Region. This signifies the strategic role of the Region's energy assets in national energy generation and transmission"*.
2. It is stated that *"EirGrid and the French transmission system operator (RTÉ) are jointly developing an energy interconnector between France and Ireland at a location in our Region (the Celtic Interconnector project). There are significant benefits, including an increased competition and increased security in supply. It will help facilitate Ireland's transition to a low carbon energy future and host fibre optics, providing a direct telecommunications link between Ireland and continental Europe"*.
3. The following Regional Policy Objectives are noted:
 - **RPO 219** - New Energy Infrastructure and states that *"it is an objective to support the sustainable reinforcement and provision of new energy infrastructure by*

infrastructure providers (subject to appropriate environmental assessment and the planning process) to ensure the energy needs of future population and economic expansion within designated growth areas and across the Region can be delivered in a sustainable and timely manner and that capacity is available at local and regional scale to meet future needs”.

- **RPO 222** - Electricity Infrastructure states that *“it is an objective to support the development of a safe, secure and reliable supply of electricity and to support and facilitate the development of enhanced electricity networks and facilitate new transmission infrastructure projects that might be brought forward in the lifetime of this plan under EirGrid’s (2017) Grid Development Strategy (subject to appropriate environmental assessment and the planning process) to serve the existing and future needs of the Region and strengthen all-island energy infrastructure and interconnection capacity”.*
- **RPO 223** – International Energy Interconnection Infrastructure – *“It is an objective to support the sustainable development of international energy interconnection infrastructure and support the sustainable development (subject to appropriate environmental assessment and the planning process) of the Celtic Interconnector project between Ireland and France from a location in the Region”.*

4.8. Cork County Development Plan 2014

1. This plan is currently being reviewed, the status of which is outlined below. It does not include any specific mention of the proposed development. Chapter 9 of the Plan addresses Energy and the Digital Economy and considers renewable energy at Section 9.2 – 9.6. Section 9.6 deals with the transmission network with CDP Objective 6-1 dealing with the electricity network and includes the following:
 - *“Support and facilitate the sustainable development, upgrade and expansion of the electricity transmission grid, storage and distribution network infrastructure.*
 - *Support the sustainable development of the grid including strategic energy corridors and distribution networks in the region to international standards”.*

CDP Objective ED 6-2 also deals with the transmission network and includes the following:

- *“Proposals for new electricity transmission networks need to consider the feasibility of undergrounding or the use of alternative routes especially in landscape character areas that have been evaluated as being of high landscape sensitivity. This is to ensure that the provision of new transmission networks can be managed in terms of their physical and visual impact on both the natural and built environment and the conservation value of European sites”.*

4.9. Draft Cork County Development Plan 2022-2028

1. This Plan is currently being progressed, and after the 15th February the executive will have 4 weeks to prepare a Section 12(8) Chief Executives report on submission/observations made in relation to the Proposed Amendments to the draft plan.
2. Section 13.16 of the Draft Plan addresses the Transmission Network which notes that Cork has a very strong electrical grid and substation network with this network instrumental in supporting the development of the renewable energy industry in the county. Specific reference is made to the Celtic Interconnector is addressed at Sections 13.16.4-6 which outlines the nature and benefits of the proposed development. Development Plan Objective ET13.23 relates specifically to the project and states:

“Support the development of the Celtic Interconnector project linking the electrical transmission networks between Ireland and France as identified as a key project under Project Ireland 2040 for security of electricity supply, enhanced competition and direct access to the EU Internal Energy Market”.

4.10. East Cork Municipal District Local Area Plan 2017

It is a strategic aim of the Cork County Development Plan, 2014 to establish key villages as the primary focus for development in rural areas and allow for the provision of local services, by encouraging and facilitating population growth at a scale, layout and design that reflects the character of each village, where water services and waste water infrastructure are available.

4.11. Cobh Municipal District Local Area Plan 2017

- Lands at the IDA Ballyadam site are identified for a range of industrial uses under CT-I-03.

5.0 Legislative Context

5.1. Strategic Infrastructure Development

1. Section 182A(1) of the Planning and Development Act, 2000 (as amended) requires, where a person (referred to as the 'undertaker') intends to carryout development comprising or for the purposes of electricity transmission, the undertaker shall prepare an application for approval of the development to the Board.
2. Section 182A(9) of the Act states that the term 'transmission' shall be construed in accordance with section 2(1) of the Electricity Regulation Act 1999, and for the purposes of section 182A, shall also be construed as meaning the transport of electricity by means of a high voltage line (equal to or greater than 110 kilovolts) or an interconnector (whether ownership of the interconnector will be vested in the undertaker or not).
3. Section 2(1) of the Electricity Regulation Act, 1999 defines transmission as '*...the transport of electricity by means of a transmission system, ... a system which consists, wholly or mainly, of high voltage lines and electric plant and which is used for conveying of electricity from a generating station to a sub-station, from one generating station to another, from one substation to another or to or from any interconnector or to final customers but shall not include any such lines which the Board may, from time to time, ...specify as being part of the distribution system ...*'
4. Electric plant is defined as '*any plant, apparatus or appliance used for, or for purposes connected with, the generation, transmission, distribution or supply of electricity, other than by (a) an electric line, (b) a meter..., or (c) an electrical appliance.*'
5. It is of note that a pre application consultation took place reference: 302725-19 in which the board determined that the proposed development fell within the scope of Section 182A of the Planning and Development Act, 2000 (as amended). Accordingly,

the proposed development was considered to be strategic infrastructure within the meaning of the Act.

5.2. Natural Heritage Designations

1. The proposed development is not located within, adjoining or in close proximity of any European site. There are a number of sites located within c.1.5km of the application boundary to the north and south of the landfall location at Claycastle Beach, namely Blackwater River (Cork/Waterford) SAC (site code 002170) and Ballymacoda Bay SPA (site code 004023). There are two sites to the south of Midleton which are in excess of 2km from the subject development at their nearest location namely Great Island Channel SAC (site code 001058) and Cork Harbour SPA (site code 004030).

5.3. Environmental Impact Assessment

1. Section 182A(2) of the Planning and Development Act, 2000 (as amended) requires that in respect of development referred to in section 182A(1), which belongs to a class of development for the purposes of section 176 (prescribed classes of development requiring environmental impact assessment), the undertaker shall prepare an environmental impact statement or Natura Impact Statement in respect of the proposed development.
2. Schedule 5 of the Planning and Development Regulations, 2001 (as amended) transposes Annex I and II of the EIA Directive and sets out prescribed classes of development, for which an environmental impact assessment is required. The following classes are noted:
 - Part 1(20) of the Schedule refers to 'Construction of overhead electrical power lines with a voltage of 220 kilovolts or more and a length of more than 15 kilometres'.
 - Part 2(3)(b) refers to 'Industrial installations for carrying gas, steam and hot water with a potential heat output of 300 megawatts or more, or transmission of electrical energy by overhead cables not included in Part 1 of this Schedule, where the voltage would be 200 kilovolts or more'.

6.0 Assessment

- 6.1. The proposed development as outlined above will comprise the portion of the overall planned Celtic Interconnector project located onshore in Ireland. Commencing at the high-water mark at Claycastle Co. Cork and traversing the countryside to a substation at Knockraha Co. Cork.
- 6.2. The overall Celtic interconnector is a joint initiative between EirGrid and Réseau de Transport d'Électricité (French Transmission System Operator). The project will create an electrical interconnection between France and Ireland to allow the exchange of electricity between the two countries. The project in its entirety will comprise a 500km High Voltage Direct Current submarine cable. The HVDC will terminate at a transition joint bay at landfall locations in Ireland (Claycastle) and France. The cable will run underground from this transition bay in both countries to a converter station compound whereby the electricity will be converted from HVDC to HVAC and vice versa. This underground HVAC will run from the converter station to a connection point with the National Grid. In the case of Ireland, the connection point to the grid is proposed at an existing substation at Knockraha Co. Cork. It is also proposed to lay a fibre optic route with associated power supply along the entire route for operational control, communication and telemetry purposes.
- 6.3. The overall project has been designated a Project of Common Interest. It is outlined within Section 1 of the Planning report submitted that EirGrid, being the undertaker, are the applicant for the proposed development, and in accordance with Regulation 8(1) of S.I no. 445/2000 is entitled to act as same.
- 6.4. In the interest of clarity, the proposed development for approval within this assessment relates solely to the terrestrial element of the development which falls within Section 182A of the Planning and Development Act, 2000, as amended. The terrestrial section of the development commences at the landfall point at Claycastle, Youghal Co. Cork where it comes on shore and runs into a Transition Joint Bay, the cable will continue underground to a converter station at the existing IDA landholding at Ballyadam, east of Carrigtowohill, East Cork. The proposed converter station will convert the electricity from HVDC to High Voltage Alternating Current which is used in the Irish transmission grid. A HDAV underground cable will extend from the converter station to the transmission grid connection at the existing ESB Knockraha substation near

Watergrasshill in Co. Cork. Additional electrical infrastructure apparatus is proposed at the Knockraha substation to facilitate the transmission of electricity from the interconnector line.

- 6.5. It is important to note at this juncture that the proposed submarine and foreshore elements of the Interconnector are not within the jurisdiction of the Board for the purpose of determination. Whilst the EIAR submitted considers all elements of the proposed development which pass through, Ireland, England and France the consideration of these elements will solely relate to the assessment of cumulative impacts with regard to the Irish terrestrial element of the project.
- 6.6. A separate PCI permit granting process is underway and is expected to be complete by August 2022. A separate foreshore licence is required for the offshore element of the project and the consideration of this is outside of the Board's remit. All EIAR documents pertaining to the development in its entirety have been submitted to the Board for information purposes only, the EIAR relating to the development under consideration hereunder will be examined in detail within the EIAR Section below.
- 6.7. It is prudent to note that a number of submissions refer to the impacts of the submarine cable on fishing and fish life, and further reference is made to the prematurity of the development pending the adoption of the Marine Protection Areas. Whilst I note the concerns raised, I consider it prudent to reiterate at this juncture that the element of the Interconnector project under consideration by the Board relates solely to the terrestrial element of the development from the high water mark to the Knockraha substation in Co. Cork. The assessment hereunder will consider the Irish terrestrial element of the development above the highwater mark to Knockraha Substation and will consider the cumulative impacts of the project in the context of existing and proposed development within the vicinity of the development as well as the development in its entirety under the relevant headings outlined within the EIAR.
- 6.8. Given the variety of issues raised within the submissions received, I consider it prudent to consider the issues raised on a themed basis within the relevant sections of the report hereunder. All submissions are summarised above for ease of reference. Recurrent issues are not repeated within the submission's summary in the interest of conciseness.

6.9. Having considered the application in its entirety, I consider that the following issues are of relevance to the Board in its assessment of the proposed development. Note that where there is a crossover of issues common to both the planning assessment and headings contained within the EIA, such issues will be considered within the EIA assessment in order to prevent repetition.

- Principle of Development - Compliance with European and Domestic policy
- Community Benefit Fund
- Landownership

Development Boundary & High Water Mark

- Impacts arising from EMF and radon exposure
- Access to EIAR documents
- Visual impact – terrestrial and seascape character
- Flooding
- EIA
- Appropriate Assessment

Principle of Development – Compliance with European and Domestic policy

6.10. It is stated that the proposed interconnector is being developed in response to the European challenges such as energy transition and the management of Climate Change. The proposed project will facilitate the integration of renewable energy at the European level and enable France and Ireland to move forward in terms of the energy transition. Pooling resources will enable both countries to cope with contingences and spikes in electricity consumption and will promote mutual assistance. The proposed interconnector will be the only direct link between Ireland and another EU member state and will enable Ireland to benefit from the European integrated electricity market.

6.11. The Strategic Need for the project has been outlined within Section 4 of the Planning Report submitted in which it is stated that the energy union framework strategy (COM/2015/80) aims to give European Union consumers, households, and businesses, secure, sustainable, competitive and affordable energy. One of the five

elements to achieve this includes the use of interconnectors which enable the free flow of electricity across Europe without any technical or regulatory barriers.

- 6.12. A 10% interconnection target was set to be achieved by 2020 by member states. Ireland has failed to meet this target. The proposed development has been identified by the European Commission and has been allocated funding for its delivery. The Irish Commission for Utilities recognises the importance of the interconnector and states that the interconnector could help to lower electricity prices, reduce greenhouse gas emissions and provide greater energy security which is of benefit to consumers and stakeholders.
- 6.13. Ireland's National Policy Statement on Electricity Interconnection (2018) supports the notion of interconnection and recognises the economic and strategic benefits of additional interconnection.
- 6.14. The National Planning Framework, as outlined above, also supports interconnection and recognises the importance of interconnection in transitioning to a decarbonised economy. It further acknowledges that new energy systems and transmission grids will be required to enable a more distributed energy generation which connects established and emerging energy sources, in order to meet the growing demand for energy within the country.
- 6.15. I note that Government White Paper – Ireland's Transition to a Low Carbon Energy Future 2015-2030, outlines that no renewable energy technology, existing or emerging will enable Ireland to overcome the low carbon challenge, rather, a diverse range of technologies will be required along the supply chains for electricity, heat and technology.
- 6.16. Whilst Ireland's abundant wind resource means that a wind installation generates more wind than in other countries, the variability of this resource poses challenges to the operation of electricity grids. It is recognised by this White Paper that an uninterrupted supply of energy is vital to the functioning of the Irish society and economy. Therefore, it is stated that adequate infrastructure and the diversification of energy supply which avoids over dependency on any particular fuel, supplier, route or region is necessary.

- 6.17. These sentiments are reflected within the EirGrid Strategy 2020-2025 whereby the long-term strategy for energy stability includes planning for a system which is able to take advantage of future interconnections.
- 6.18. At a regional level, the Southern Regional Assembly Regional Spatial and Economic Strategy specifically supports the development of the Celtic Interconnector, as outlined in objective RPO223 in which the development of international energy interconnection is specifically referenced and supported. The Cork Metropolitan Area Strategic Plan identifies the Ballyadam landholding as an asset for strategic employment and seeks to strengthen the role of Cork Metropolitan Area as an international location of scale and a primary driver of economic and population growth in the Southern Region. Maintenance of a stable grid is essential to the achievement of this objective.
- 6.19. The Cork County Development Plan 2014 supports the upgrade and expansion of the electricity grid as per objective ED6-1. I note that the draft Cork County Development Plan 2022-2028 recognises the importance of the proposed interconnector in enabling Ireland to meet climate change targets in relation to renewable energy supply.
- 6.20. At a local level the East Cork Municipal District Local Area Plan 2017 sets out the development strategy for the rural villages in this area. This plan seeks to ensure that the rural character of these settlements is maintained. Given that the proposed route will be located underground, I am satisfied that the development will not prohibit the achievement of this objective.
- 6.21. The proposed substation at Knockraha and converter station at Ballyadam lie within the boundary of the Cobh Municipal District Local Area Plan 2017. Lands at the Ballyadam site are referenced under specific development objective CT-1-03 and zoned as industrial use, the proposed converter station is in compliance with this zoning objective.
- 6.22. It is of note that the proposed cable route will run adjacent to the boundary of residentially zoned lands within Carrigtwohill in which there is a realignment planned to the road network. A greenway development is also proposed in the vicinity of the cable route as is the upgrading of the Ballyadam Bridge to accommodate pedestrian and cycling facilities. The proposed development will not conflict with the delivery of these projects.

- 6.23. Overall, having regard to the foregoing it is clear that the proposed development is supported in terms of guiding policy from a European level through to a local level. The development as mentioned above has been recognised as a Project of Common Interest at a European level whereby the interconnection of European energy supply is recognised as essential to the achievement of sustainable energy targets across the jurisdiction. The notion of interconnection is also strongly supported within Ireland's Domestic policy framework within the NPF, RSES for the region and the Cork County Development Plan, whereby it is recognised that a stable grid is essential to the economic and domestic prosperity of the Country. Given the instability of wind energy it is essential that the country has access to a stable energy supply which also allows for two-way energy movement at times of surplus within Ireland. The principle of the proposed interconnector is therefore acceptable in terms of the overriding policy position at a European and domestic level and is therefore acceptable in this regard.
- 6.24. It is important to note that whilst the majority of the route proposed will not negatively impact the delivery of other objectives outlined within the Cork County Development Plan and those outlined within other relevant Local Area Plans, as outlined above, I note that Cork County Council have raised an issue with regard to the location of joint bays along the route and the potential for these to conflict with future works within road verges. This issue will be examined within the traffic and transport element of the EIA hereunder.
- 6.25. **Landownership**
- 6.26. A number of submissions have made reference to issues relating to the overall principles of development with regard to landownership, site boundaries and access to the proposed Community Benefit Fund. I consider it prudent to address such issues at the outset of this assessment in the interest of clarity as these issues do not naturally fall within the headings hereunder.
- 6.27. With regard to land ownership a number of submissions contend that development within the road verge is within lands outside of the applicant's control as such lands are in the ownership of adjacent landowners, whereby landowners effectively own to the centre line of a carriageway. Such issues are largely legal matters and not one that the Board can finally determine, I therefore draw the Board's attention to Section 37(H) of the Planning and Development Strategic Infrastructure Act, 2006, which

states ‘a person shall not be entitled solely by reason of a permission under section 37G to carry out any development’.

Community Benefit Fund

- 6.28. A number of submissions also raise concerns in relation to the accessibility of rural dwellers to the proposed Community Benefit Fund. It is contended within the submissions received that benefits from such a fund will only be utilised for urban dwellers and that the delivery of improvements and /or benefits will not be equitable. I note from Section 5 of the Planning Report submitted, that EirGrid propose a community fund of €2 million to be set up in relation to the proposed development. It is proposed that communities across the entire UGC route, landfall location and converter station location will benefit from this fund. The intention of the fund is to ensure that the development will leave a positive legacy on the communities who will facilitate its realisation.
- 6.29. It is proposed that the fund will be issued in three phases – once construction has begun, in the middle of construction and once the project is fully energised. It is stated that EirGrid will work with a local Celtic Community Forum of stakeholders, which is currently being set up, and partners to do this. The fund will focus on three priority themes – Community, Sustainability and Biodiversity in recognition of Ireland’s Climate Action Plan and the community’s role in achieving this. The fund will provide the fund value for each of the priority themes. Whilst the management of the fund is not a matter for the Board, as per Section 182 of the Planning and Development Act, 2000, as amended, I nonetheless consider the overall approach which will ensure that benefits are provided along the entirety of the route for the benefit of all residents is reasonable and adequately addresses the concerns raised within the submissions received.

Development Boundary & High Water Mark

- 6.30. As mentioned above, submissions also refer to the lack of clarity regarding the High Water Mark, in this regard I draw the Board’s attention to Section 6 of the Planning Report Submitted under the heading ‘The Jurisdictional Boundary of the Proposed Development’, in which it is stated that Figure 6.1 of this document illustrates the High Water Mark as indicated on the OSI 25” series mapping (1888-1913) as a yellow line which currently extends over the existing car park at Claycastle Beach suggesting that there may have been some historic land reclamation. A pink line obtained from the

OSI data from 2020 overlaid on the same map indicates that the High Water Mark is along the Beach.

- 6.31. It is stated that a High Water Mark can only be altered by way of a Maritime Order, no such order has been identified which changes the High Water Mark in this area. As such it is therefore stated that the High Water Mark as identified on the OSI 25" series mapping remains the legal delineation of the jurisdictional boundary.
- 6.32. Notwithstanding the Board's jurisdiction for the purposes of deciding on a SID, the extent of the red line boundary on the planning drawings extends to the 2020 HWM, given that development in this area below the HWM is also addressed in the application particulars including the NIS and EIAR. It is stated within the report submitted that the existing Claycastle beach carpark, a portion of which is proposed to be used temporarily as a construction compound for the proposed landfall area, is located both above and below the HWM. The area bounded within the red line boundary at the landfall area is thus, 'the land or structure to which the application relates as per the provisions of Article 22 (2)(b)(i) of the Planning and Development Regulations 2001, as amended.
- 6.33. It is of note that a separate application for a Foreshore licence being submitted in parallel to the Foreshore unit of the Department of Housing Local Government and Heritage extends to the HWM as denoted on the OSI 25" series mapping.
- 6.34. Whilst I note the concerns raised within the submissions in this regard, I consider the applicants explanation of the situation to be clear and I consider that whilst the application refers to works outside of the Board's jurisdiction, it is important to do so in the interest of clarity and context in relation to the overall development.

Access to French EIAR

- 6.35. Submissions also refer to the lack of information available in relation to the French element of the development. I note that the Environmental report relating to the French element of the development has been submitted for information purposes with the current application, this information is also available to the public via the EirGrid website. Notwithstanding the availability of the information, it is important to note that the availability of French documentation and the consenting process in relation to this element of the development is not within the Board's jurisdiction to consider and has been provided for information purposes only. It important to note that at pre application

stage it was considered that the development proposed within the Irish State would not be likely to have significant effects on the environment in a transboundary State, that being in this case, the United Kingdom and/or France. The applicant was therefore not required to comply with the requirements of Article 210(3)(a) of the Planning and Development Regulations 2001, as amended.

Impacts arising from EMF and radon exposure

- 6.36. A number of submissions received raise concerns in relation to the potential for health impacts to arise from exposure to electromagnetic fields and radon within the vicinity of the proposed UGC. Particular reference is made to the potential for impacts to arise in relation to the elderly, children walking on the road under which the cable is to be laid and pets and animals walking on the road or within lands adjacent to the cable route. Further concerns are raised by residents living close to the line and who work from home and the potential for EMF impacts to arise within their workplace. Dermot and Catherine O'Driscoll specifically raise concerns within their submission in relation to an increased risk of breast cancer arising from EMF exposure.
- 6.37. Whilst I note that impacts in relation to Human Health arising from EMF emissions is examined within the EIAR submitted, it is of importance to the Board to note that EMF exposure and monitoring, as per Regulation S.I 190 of 2019, is a function of the EPA. As such the monitoring of EMF exposure is not a matter that the Board can finally determine.
- 6.38. In the context of the submissions received, I draw the Boards attention to Section 4 of the EIAR submitted which outlines the relevant guidelines relating to EMF - ICNIRP Guidelines 'For Limiting Exposure to time varying electric magnetic and electromagnetic fields up to 3000GHZ', 1998. These guidelines are prepared by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) which is an independent body funded by health authorities around the world.
- 6.39. I note from these guidelines that reference is made to an upper limit in relation to EMF of 500 microtesla for those with electrical medical devices such as pace makers. It is stated within Section 4.5.2.4 of the EIAR that EirGrid in terms of their general policy regarding EMF have adopted upper limits of 360 microtesla and 9000V/m respectively which are below that outlined in the guidelines. It is also stated by the applicant that underground cables have been installed throughout Ireland since the 1960's and

extensive studies have been carried out in relation to the potential health impacts arising from EMF for decades. In addition, it is stated that the exposure limits outlined in the 1998 guidelines have been revised upwards but these changes are yet to be adopted within Europe and Ireland. The reference to the increases in limits is merely outlined to demonstrate the conservative approach adopted by EirGrid in general.

- 6.40. The applicant states that potential EMF exposure has been considered along the route of the cable, at points whereby the public will be closest to the emissions, such as at the boundary fence of the substation and converter station and immediately above the centre line of the AC and DC UGC. Exposure is measured at a height of 1 metre above ground. The applicant clearly states that EMF from underground cables will not be detectable above ground given the use of continuous metallic sheath which acts as a barrier to water and blocks the electric field from the conductors from the outside environment. EMF levels emitting from the proposed cables is expected to be c. 14 microtesla which is significantly below that permitted under the aforementioned guidelines. The laying of the cables in a trefoil pattern is also stated to assist with the further reduction of magnetic fields. The applicant therefore contends within the EIAR, that based on the foregoing EMF exposure is not considered to give rise to any significant adverse impact at surrounding residential properties or in the general environment. It is also of note that the applicant also states that construction workers will not be exposed to EMF limits above that provided for within the guidelines.
- 6.41. I note the applicant's response to the concerns raised within the submissions which have been outlined above and will not be repeated hereunder. However, it is necessary to state in the interest of clarity that I have reviewed all of the submissions received and in the context of the information provided both within the EIAR and the response to submissions by the applicant, I am satisfied that the proposed development has been designed in accordance with the ICNIRP and EU guidelines and will not pose any threat to human health with regard to EMF emissions. It is important to also note, in the context of the submission received, that the WHO, in 2007, determined that there was no causative link between magnetic fields and breast cancer. This is of particular relevance to the issues raised within Dermot and Catherine O'Driscoll's submission.
- 6.42. I further note that EirGrid notes in their submission, that the Observers have mistakenly compared calculated values of the magnetic field from Direct Current (DC)

cables with Alternating Current (AC) magnetic fields. The frequencies of DC and AC fields are different, and the results of studies at these two frequencies are not comparable. In the interest of clarity, it must also be stated the proposed cables will not generate radiofrequency fields.

- 6.43. I note that a number of submissions relate to radon exposure as a result of the proposed works, observers are concerned that radon will accumulate within water pipes as a result of the proposed works. Whilst I acknowledge the observers concerns, it is important to note that radon is a naturally occurring gas and is emitted from the ground into the atmosphere on a continual basis. Radon is a lightweight gas and disperses quickly when emitted from the ground and only poses as a health hazard when trapped in poorly ventilated properties.
- 6.44. I note that the applicant states within the response to submissions that radon is not attracted to magnetic field and nor does it seep into watermains. Radon enters water at source not during distribution in watermains and connected pipes.
- 6.45. I note that the proposed cable will not pass under any properties and will be installed within the road verge or open countryside. As such having regard to the properties of this naturally occurring gas, and the nature of the proposed works which will be significantly removed from any private dwellings, I am satisfied that the proposed works will not give rise to radon exposure beyond that naturally present in the atmosphere.
- 6.46. **Visual impact – terrestrial and seascape character**
- 6.47. A Landscape and Visual impact assessment has been carried out for the entirety of the proposed development and is examined in Section 9 of the EIAR submitted. The assessment describes the landscape context of the proposed development and assesses the likely landscape and visual impacts of the scheme on the receiving environment.
- 6.48. Such impacts are examined in detail within the EIA section of this report and will not be repeated hereunder. However, it is important, at this juncture, to address the issues raised within the submissions received in the context of visual and landscape impacts.
- 6.49. I firstly note the submission of the Heritage Council, in which reference is made to the Regional Seascape Character Assessment for Ireland, 2020 and the requirement for this to be considered in the context of the proposed development. I draw the Boards

attention to Section 14 of Volume 3D2 of the EIAR technical Chapters and Appendices document in which seascape and landscape are examined by the applicant. Particular reference is made to the aforementioned document within Section 14.3.1 of this document whereby the key characteristics of the landfall site and surrounding area are listed. It is of note that few of these characteristics are overtly present at Claycastle Beach which comprises a sandy foreshore backed by a long narrow public car park. It is important to note that such characteristics as identified within the aforementioned document will remain unchanged by the development.

- 6.50. Changes to seascape character will relate solely to the presence of cable laying vessels for the duration of works, no long term impacts are expected given the nature of the development.
- 6.51. The Knockraha Community Association has also made submissions in relation to the visual impacts of the proposed development. A number of issues were raised in relation to the quality of the assessment submitted by the applicant and the absence of appropriate mitigation measures. Whilst a number of issues raised will be examined within the EIA section of this report, it is important to address the points raised at the outset of this assessment. I note that the submission raises concerns over the quality of documentation submitted in terms of the photomontages, number of view points, sharpening software and overall visibility of the proposed development.
- 6.52. I have considered the information submitted and carried out a detailed site inspection of the proposed cable route and surrounding area. Thus, I have a clear understanding of the position of Knockraha Substation within its rural setting and the visibility of this existing development within the surrounding area. I draw the Board's attention to the photomontages of the Knockraha Substation in which it is clear that there is little in the way of screen planting surrounding the existing site. Substations by virtue of the large size of associated structures cannot be completely screened from view, however creative planting can assist in significantly reducing the overall visual impact of such development on the landscape. Whilst I acknowledge the concerns of the residents it appears that the issues raised pertain largely to the existing permitted development and the cumulative impact that may arise in relation to the proposed development.
- 6.53. I note from the Landscape Character Assessment for the Cork County Development Plan, that the Knockraha station is located in an area identified as 'Fissured Fertile

Middleground' landscape character type which is not designated as 'High Value Landscape'. I note that there are no designated scenic routes in the vicinity. Whilst the surrounding landscape is not identified as being particularly sensitive in terms of landscape value, the visual impacts of the proposed development on the local rural community must also be considered. The proposed development is surrounded by sparsely laid out rural housing and is southeast of Knockraha village. The existing substation is visually prominent when viewed from the adjacent local road and whilst I consider additional planting and landscaping would significantly improve this impact, the visual impact of the existing substation is not relevant to this assessment. The development subject to examination relates solely to the additional transformers proposed within the existing substation site.

- 6.54. Thus, given the nature of the proposed development and the connection to these transformers by way of an underground cable, I consider the magnitude of change in terms of the visual impacts arising from the proposed development to be significantly limited. The proposed transformers will be located within the south eastern section of the substation which is significantly removed from visual receptors and as such will not exacerbate the current visual impact of the substation.
- 6.55. Whilst I note the concerns of the observers in relation to the future development of this site and the potential for additional visual impacts to the surrounding area, it is not within the remit of this application to speculate about possible future development. However, I do note EirGrid response to such concerns in which it is stated that the proposed development is merely to accommodate transformers taking in 400kV and transmitting out at 220kV. Any future development would be subject to a further planning application and would be assessed on its merits at the time.
- 6.56. As aforementioned, whilst I consider additional planting would enhance the overall appearance of the existing substation, it is not a matter for the current application.
- 6.57. With regard to the number of view sheds, quality of photomontages and aerial photography I consider that the information submitted sufficiently represents the situation on site and I am satisfied that the application is acceptable in this regard. Overall, I am satisfied that the proposed development will not introduce development which would impact the visual amenity of the surrounding area to such a magnitude as to warrant a refusal. The proposed development is not introducing a new form of

development to the landscape and will not exacerbate the current situation significantly in terms of visual impacts to the surrounding landscape.

- 6.58. Whilst I note the concerns of the Knockraha community Association with regard to the visual dominance of the proposed development from Knockraha village I do not consider such impacts to be significant given the distance of the development from the village. As aforementioned, the proposed development will comprise of transformers which will be imperceptible from the village and wider landscape. These additions will read in conjunction with the substation as a whole rather, than a perceptible additional development in its own right.
- 6.59. It is important to note that visual impacts in terms of the overall scheme will be examined in detail within the EIA however it is prudent to note at this juncture that the proposed converter station which is another element of the development to contain buildings and structures above ground at the IDA site is also located within a relatively rural area outside of Carrigtowhill. No significant concerns have been raised in relation to the visual prominence of this element of the development within the submissions received. Further assessment of same will be examined within the EIA assessment hereunder.

Flooding

- 6.60. A flood risk assessment in relation to pluvial flooding has been carried out by the applicant in relation to the Ballyadam IDA site which will accommodate the proposed Converter Station. It is important to outline at the outset that the proposed Knockraha Substation site is not susceptible to flooding and there is therefore no requirement for an FRA to be carried out for this element of the development.
- 6.61. It is of note that the proposed cable route will pass under a limited number of areas prone to flooding and identified as being within both Flood Zone A and B. However, the proposed cables are designed not to be vulnerable to flooding. Developments that are necessary within Flood Zone A and B require a justification test unless they are not vulnerable to flooding. The proposed cables, being underground, will not alter ground conditions or levels and as such will not impact flooding in any manner along the cable route or within surrounding lands. Given the nature of the proposed cable installation and operation I am satisfied that these elements of the development will

not give rise to or exacerbate flooding within either the development site or within surrounding lands.

- 6.62. With regard to the Ballyadam site, it is noted that the principal sources of flooding have been identified as being potentially from surface water due to the topography of the site and from groundwater via an Estavelle located within the southwestern corner of the site. An Estavelle operates as both a sink and spring depending on groundwater levels. It is of note that the development site is within a Flood Zone C and is not affected by fluvial or coastal flooding.
- 6.63. Hydraulic modelling of the site has been carried out using TURFLOW. Inputs to this model include ground water and rainfall levels, I note that a conservative approach has been taken in this regard given the uncertainty of data relating to groundwater levels. Ground water in the area of the site is influenced by the Owenacurra and Castle Rock Catchments.
- 6.64. I note that climate change scenarios are accounted for within the flood risk assessment and the relevant uplifts in rainfall levels have been included within the hydraulic modelling for the site.
- 6.65. Details of the hydraulic model and the relevant considerations pertaining to the site at Ballyadam are outlined in section 5 of the flood risk assessment submitted as part of Volume 3C Part 2 of the Appendices to the EIAR.
- 6.66. Hydraulic modelling results show that overland flooding from the hills to the north of the Ballyadam site is intercepted by the rail line to the north and diverted to the west, no flood risk therefore arises in this regard. Water builds up in two excavation areas within the site and discharge from the Estavelle has the potential to amplify flood risk on the local access and N25.
- 6.67. Given the conditions on site and the presence of an Estavelle it is proposed to raise the ground levels within the main converter station compound to a level of 18m AD as part of the site development proposals. Ground levels immediately adjacent to the compound and along new access roads will also be raised with minor adjustments to accommodate certain works such as ties in etc. Modelling demonstrates that the raising of ground levels and infilling of excavations will eradicate pluvial flooding issues at the converter station location. I note that the flood risk assessment outlines that raising of lands will not result in flooding beyond the boundaries of the Ballyadam site.

- 6.68. Water will, however, be displaced within the boundaries of the site and as such appropriate mitigation is proposed to address this issue. It is proposed to construct a single integrated site drainage solution which will intercept and manage run off from within the proposed development site in addition to run off from surrounding lands that drains towards it. Water will effectively be collected from a network of surface water drains which will be connected to the public storm water system. Flows from these drains will be restricted to greenfield run off levels. In order to restrict flow, a number of subsurface storage tanks will be installed to prevent flooding when inflow rates increase beyond permissible outflow rate. Measures proposed are standard practice and are known to be effective. I am therefore satisfied that the proposed works at the Ballyadam site will not give rise to flooding either within the site or within the surrounding lands and will improve site specific pluvial flooding within the Ballyadam site.
- 6.69. Based on the foregoing and the information submitted I am satisfied that the proposed development will not exacerbate flooding within the development site or within the surrounding area and the proposal has been designed in accordance with the requirements of the Planning System and Flood Risk Management Guidelines for Planning Authorities, 2009.
- 6.70. With regard to the information submitted, it is clear that there is an abundance of overlap in terms of topics to be examined within both the planning assessment and the EIA. In the interest of conciseness, I will examine the remaining issues pertaining to traffic, hydrology, hydrogeology, biodiversity, and alternatives considered within the following examination of the EIAR.

7.0 Environmental Impact Assessment

- 7.1. The application is accompanied by an Environmental Impact Assessment Report (EIAR) which was prepared by Mott McDonald on behalf of the applicant. This EIA section of the report should, where appropriate, be read in conjunction with the relevant parts of the Planning Assessment above.
- 7.2. The application falls within the scope of the amending 2014 EIA Directive (Directive 2014/52/EU) on the basis that the application was lodged after the last date for transposition in May 2017. The application also falls within the scope of the European

Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, as the application was lodged after these regulations come into effect on 1st September 2018.

- 7.3. The impact of the proposed development is addressed under all relevant headings with respect to the environmental factors listed in Article 3(1) of the 2014 EIA Directive. The EIAR sets out a case regarding the need for the development (Section 2.1). The EIAR provides detail with regard to the consideration of alternatives in Section 1.0. An overview of the main interactions is provided at Section 15. Details of the consultation entered into by the applicant with Cork County Council and other prescribed bodies as part of the preparation of the project are also set out in a separate document and can be reviewed in the EIAR.
- 7.4. Article 3 (2) of the Directive requires the consideration of the effects deriving from the vulnerability of the project to risks of major accidents and / or disasters that are relevant to the project concerned. The potential for ‘unplanned events’ is addressed in Section 14.
- 7.5. The potential for ‘flooding’ is considered in Section 7 Hydrology. I consider that the requirement to consider these factors under Article 3(2) is met.
- 7.6. In terms of the content and scope of the EIAR, the information contained in the EIAR generally complies with article 94 of the Planning and Development Regulations 2001, as amended, all studies informing the EIAR are up to date and recently acquired. Additional pre-construction surveys will be required in order to provide up to date information in relation to invasive species, mammals, bats and birds, however such issues can be adequately dealt with by condition.
- 7.7. It is important to note at the outset that the proposed development under consideration within this application does not cross international boundaries. Transboundary issues are considered with regard to hydrology in terms of the cumulative effect. Consideration of transboundary effects pertaining to other heading within the EIAR are considered in general terms within the cumulative assessment of each heading.

Alternatives

- 7.8. The applicants considered alternatives in relation to the onshore elements of the Celtic Interconnector in accordance with EirGrid’s six-step Framework for Grid Development.

Alternatives are therefore considered at the infancy of the project and include the consideration of strategic and more localised technological and locational topics.

- 7.9. Alternatives also considered the 'Do nothing Scenario', in this case market integration and the reduction of infrastructure bottlenecks would be hampered as would the move to a more sustainable grid with integration of renewable energy onto the grid and the security of supply.
- 7.10. In terms of connection to the Irish transmission network, two sites were considered: Knockraha in Co. Cork and Great Island in County Wexford. Alternative locations were also considered in relation to the proposed converter station. Technical studies were undertaken to consider transmission points. It was found that connection at Great Island would require significant upgrading to transmission system and construction of new infrastructure across the region. Connection to the Knockraha, did not require the level of upgrades required for the Great Island connection point and was therefore considered to be the more favourable option.
- 7.11. In terms of landfall locations, a number of options were identified as follows:
- Inch Beach
 - Ballycroneen Beach
 - Ballinwilling Strand (Western Approach)
 - Ballinwilling Strand (Eastern Approach)
 - Redbarn Beach
 - Claycastle Beach.
- 7.12. It is stated within Section 1.4 of the EIAR submitted that these locations were previously identified within the Intertek Marine Route Investigations report in which a number of constraints were identified including shipping, navigation and ports. This report also considered impacts to Cork and Waterford Port areas.
- 7.13. Cork harbour is a key seaport with capability to service all modes of shipping. Cable installation at such locations is more challenging. Risk at anchorages in terms of entanglement and damage to cables are high in these areas. Dredging and disposal areas around ports are also a significant risk to cables in terms of damage.

- 7.14. After consideration of all of the aforementioned locations, 3 sites were shortlisted for further investigation, Ballinwilling Strand, Redbarn Beach and Claycastle Beach. It is stated that Claycastle was chosen as the preferred landfall site given its offshore approach which follows a sediment channel with sufficient depth to bury the cable and protect it against fishing and shipping without requirement for rock cutting or external protection. Other locations such as Redbarn are characterised by rocky outcrops, boulder fields and high seabed gradients which would necessitate rock cutting.
- 7.15. The selection of Claycastle Beach therefore avoids the need for rock cutting and permanent disruption to the seabed compared with all other options identified in the east cork area.
- 7.16. With regard to the converter station location, it is stated within Section 1.5 of the EIAR that ten locations were identified as options at the outset, 6 of these locations were discounted at an early stage and four sites were considered in further detail, including Ballyadam, Knockraha and Kilquane/Meeleen prior to the preferred site being identified. After consideration of technical, environmental and other analysis of the site options, Ballyadam was considered to be the preferred option for the proposed converter station. It is further stated within this section of the EIAR that social and deliverability aspects were also considered in the choosing of Ballyadam.
- 7.17. Options with regard to the undergrounding of the cables were also considered by the applicant in term of being a single line or split into two lines. Options in terms of loop in loop out and elements of tail fed connections were also considered at the outset of the proposed development. Constraints such as the need for overhead cable sections, the capacity of lines to carry the power required and the requirement for additional infrastructure influenced the final preferred option of a 700kV UGC. The determination of the final cable arrangement was also informed by consultation with Transport Infrastructure Ireland, Cork County Council, local communities and stakeholders.
- 7.18. I note from the submissions received that concerns were raised in relation to the proposed route and reference is made to the potential to install the cable underneath the Midelton to Youghal Greenway. It is important to note that this route was considered by the applicants at route selection stage and was discounted for a number of reasons as follows:

- Cork County Council will lease the greenway lands for 15-20 years, the interconnector life is 40-60years.
- Potential for conflicts to arise should the rail be restored, Iarnród Éireann retain the right to reinstate the rail line at any time. Leaving significant potential for damage to the cable should restoration of the route occur. Maintenance of the cable would also be significantly difficult underneath a rail line.
- Consent for greenway does not include consent for an interconnector. Ducting permitted would not be suitable for the proposed interconnector and as such permitting timeframes would require the interconnector to be installed after the installation of the green way.
- It is stated that this route was considered for a considerable period of time and in depth consultations were held in this regard, further issues relate to the width and gradient of the greenway and associated drainage.
- Access for maintenance would also be restricted along the greenway as it is removed from direct access to a road network for much of the route, meaning that maintenance crews would be required to drive along the greenway to carry out works.

7.19. With regard to Killeagh and Castlemartyr it is proposed to avoid the towns as bridge crossings do not provide favourable conditions for the installation of the proposed cable. Residents indicated to the applicant that recent road resurfacing and town improvements have been carried out and the proposed route would impact on these works. It was expressed by the residents that a route which avoids these impacts would be preferable. The applicant has therefore selected a cross country route for sections around these villages.

7.20. Multiple routes were considered in relation to cross country sections at these locations and are outlined in Section 1.7.4 of the EIAR submitted. Conflicts with a potential future bypass were also considered, however these works are not within the short to medium term and no route has been identified for a bypass.

7.21. The final preferred route at these locations was selected after engagement with local residents and stakeholders such as TII.

- 7.22. Approximately 65m of land cable will pass through Ballyvergan Marsh pNHA. An alternative route was considered in this regard, which would have passed to the east of the railway bridge at this location, however there is insufficient width in the verge to allow for the proposed cable. The applicants were therefore left with no other option but to pass through the marsh at this point.
- 7.23. Overall it is stated that the proposed project has been developed through an iterative process which sought to avoid or reduce potential environmental effects through options appraisals and evaluation whilst having regard to consultations and feedback from a range of bodies, agencies, landowners and the public.
- 7.24. In my opinion reasonable alternatives have been explored and the information contained in the EIAR with regard to alternatives provides an adequate justification for the route chosen and is in accordance with the requirements of the 2014 EIA Directive.

Population and Human Health

- 7.25. Section 4 of the EIAR submitted addresses population and human health. The proposed development is located in County Cork within the two Municipal Districts of East Cork and Cobh. The area of the transition joint bay and HWM at Claycastle Beach and the majority of the HVDC UGC is in East Cork MD whilst the converter station in Ballyadam and the existing Knockraha station are in Cobh MD. The assessment of the receiving environment has been conducted with regard to the study area, settlements in which the proposed development is situated, as well as those within close proximity which are likely to be influenced by the development. The study area extends to 500m of the UGC cable and 1km surrounding the Knockraha substation, Ballyadam converter station. Settlements within the wider location have also been considered
- 7.26. Effects are considered in the context of socio-economic and health and wellbeing considerations and are considered on a regional and local level. CSO data was utilised to inform the socio-economic profile of the area. The EIAR included an examination of the population and housing.
- 7.27. It is stated that there are c. 1,474 no. buildings located within 500m of the UGC from the landfall site at Claycastle to the substation at Knockraha, 192 no. buildings within 1km buffer of the TJB at Claycastle, 23 no. surrounding the converter station and 21 no. surrounding the substation at Knockraha. It is of note that the majority of the cable

will be laid within the road verge. The land surrounding the Knockraha substation and the majority of the land cable routes comprise pasture and arable land.

- 7.28. The EIAR submitted within Section 4.3.3 outlines the settlements in proximity to the development and the relevant tourism and recreational amenities available to residents and visitors within them. The economic and employment profile for these settlements are outlined within this section of the EIAR.
- 7.29. The construction phase of the development will require various numbers of construction workers. It is anticipated that a crew of 10 workers will be required for the installation of the cable and 100 workers are expected to be required for the development of the converter station. Works in relation to the converter station are expected to occur over a 36-month period whilst the cable installation is expected to be complete within 24 months. The construction phase of the development is expected to have an imperceptible impact on the economic profile of the area. It is stated that a temporary increase in economic spend is expected in the local communities during works as a result of construction workers spending in the area. The short term economic impacts are therefore expected to be positive with the long term impacts being imperceptible.
- 7.30. In terms of impacts to human health and population arising from construction traffic it is expected that a peak of approximately 300 HGV movements will occur daily in relation to the converter station element of the development. Temporary road closures may be required along the route due to the width of the joint bays and nature of the road network in the area. Whilst accessibility to private homes will be maintained at all times there may be some temporary disruptions. The overall traffic impacts are examined within section 11 of the EIAR, however impacts in terms of human health and population are expected to be temporary and negative and whilst there will be a long-term impact in this regard arising from additional traffic accessing the converter station this is considered to be imperceptible in terms of magnitude given that personnel will only attend this site for maintenance reasons.
- 7.31. I note from the submissions received that concerns were raised in relation to traffic disruption and road closures given the narrow width of some of the rural roads under which the cable is to be installed. I note from the information submitted that these sections are limited as the majority of the scheme lies within the road verge of the N25.

Whilst I acknowledge the concerns raised the proposed works will be carried out over a limited period of time and will not cause any long term disturbance to residents in these areas. It is important to note that the proposed development is essential strategic infrastructure and is pivotal to Ireland meeting Climate Change targets as well as being of significance in a European context. On balance, therefore, I consider the temporary disruption to traffic to be acceptable in this instance.

- 7.32. Other issues arising from construction works relate to noise and dust which are examined within the relevant section hereunder. However, it is important to note at this juncture that no significant offsite health risks are expected as a result of the construction of the development. Temporary disturbances given the nature of the works will not extend in the long-term post construction.
- 7.33. With regard to the operational phase of the development, significant adverse impacts are not expected and benefits arising from the community benefit fund are proposed. Operational works will entail inspection and maintenance of the cable every five years and annual maintenance of the converter station every year. No long term impacts are expected in relation to housing, landuse and facilities. Impacts in relation to tourism are also not expected and are examined within the relevant section hereunder.
- 7.34. As outlined above, a significant number of submissions raised concerns in relation to exposure to EMF, ELF and radon. Impacts in relation to human health have been assessed above and will not be repeated hereunder. No significant long-term impacts are expected to arise in this regard and such emissions are expected to be significantly below the upper limits outlined within the ICNIRP and EU guidelines.
- 7.35. Cumulative impacts are considered in relation to the laying of the submarine cable at Claycastle, temporary impacts of a medium magnitude are expected during construction works at this location, however given the nature of the development no long term significant adverse effects are expected in relation to human health or population at this location.
- 7.36. I note that cumulative effects in relation to surrounding permitted and planned development have also been considered within the EIAR and no such impacts are expected to arise.
- 7.37. Mitigation measures are not specifically proposed within this section of the EIAR, however it is important to note that mitigation measures are proposed within sections

of the EIAR examined hereunder in relation to traffic, noise and dust which are interrelated to the assessment of impacts to human health. Such mitigation will therefore be examined within the relevant section hereunder.

- 7.38. I have considered all of the written submissions made in relation to population and human health and the relevant contents of the file including the EIAR. I am satisfied that the potential for impacts on population and human health can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, by the proposed mitigation measures and with suitable conditions. I am therefore satisfied that the potential for direct or indirect impacts on population and human health can be ruled out. I am also satisfied that cumulative effects, in the context of existing and permitted development in the surrounding area and other existing and proposed development in the vicinity of the site, are not likely to arise.
- 7.39. With regard to transboundary impacts, it is of note that the proposed development relates solely to works within County Cork, all environmental issues in terms of the subsea elements and landfall at France are subject to assessment by the relevant authorities within the jurisdictions in which they fall. It is of note that both the UK and Ireland were consulted with regard to the potential for such transboundary issues to arise and no response was received from same. Given the nature of the proposed works I am satisfied that transboundary issues pertaining to human health and population do not arise in this instance.

Air Quality and Climate

- 7.40. Section 5 of the EIAR submitted addresses the potential for impacts to arise in relation to Air quality and climate. The key pollutants considered relevant to the proposed development are identified as:
- Nitrogen Dioxide
 - Dust
 - Particulate Matter PM₁₀ and PM_{2.5}
 - Greenhouse gases; Carbon Dioxide (CO₂), Sulphur Hexafluoride (SF₆)
- 7.41. The EIAR submitted outlines within table 5.1 the upper limits for the above pollutants and within 5.2.1.2 and 5.1.2.3, the relevant international and domestic legislation and policy pertaining to same. Baseline air quality is examined within section 5.3.2 of the

EIAR. Emissions are expected to arise in relation to both the construction and operation of the proposed development and will be examined in the context of the proposed mitigation measures hereunder.

- 7.42. With regard to the construction phase of the development, the proposed works are considered under three headings, the Converter Station, HVAC/HVDC onshore circuits inclusive of laydown areas and passing bays and then other elements of the proposed Celtic interconnector project, construction compounds and landfall of the submarine cable at Claycastle. Construction activities are broken down into these categories in order to clearly demonstrate the relevant mitigation to each activity.
- 7.43. It is clarified at the outset that demolition refers to the removal of road surfacing and the existing MV building on the Ballyadam site. The parameters of the assessments are outlined in section 5.2.2.2.1 of the EIAR in which it is stated that sensitive human receptors were determined to be within 350 metres of the site, 50ms of route and 500m from site entrances.
- 7.44. It is important to note at the outset that assessments of traffic emissions are required in instances whereby average traffic flows are greater than 100 HDV per day or 500 LDV per day. It is stated within Section 5.2.2.3 of the EIAR, that the proposed development will be carried out over a 3 year period and associated traffic movements will be lower than these daily upper threshold limits. Given the limited levels of construction traffic predicted, no further consideration of the road traffic levels on ambient air has been carried out.
- 7.45. With regard to the construction phase of the development impacts are also considered at the connection point and transition joint bays. The EIAR submitted states that based on an assessment of the IAQM criteria the worst-case sensitivity of the works in relation to the HVAC/HVDC to human health is considered to be negligible to medium in the absence of mitigation. Dust will arise from activities such as earthworks, track out and construction, each activity is classified in terms of the risk of dust impacts within tables 5.7-5.9 of the EIAR.
- 7.46. Mitigation measures are outlined in section 5.5.1.1 of the EIAR. Such measures will be included within the CEMP which will be finalised prior to the commencement of development and will include good site management, monitoring, suitable dust suppression techniques, use of enclosed chutes, conveyors and covered skips.

HVAC/HVDC Cable

7.47. With regard to the proposed underground cable, it is important to note that the majority of this route is within the existing road verge, off road route are proposed at particular locations to avoid constraints. These locations include:

- North of Claycastle Beach where due to constraints of the narrow rail bridge it is necessary to divert the proposed cable off road for c. 241 metres under the planned Midleton-Youghal greenway.
- The villages of Killeagh and Castlemartyr will be avoided by means of cross country routing, this will minimise disruption.

7.48. It is stated that trenches of 100 metres will be dug at a time to install the cable, these will be filled prior to the commencement of the following trench and so on. The restriction of trench lengths will ensure that workers can monitor and contain any dust emissions easily and therefore reduce such impacts to adjacent sensitive receptors. It is proposed to shorten the length of trenches to 20m in areas containing multiple services. Sections of the route which contain the highest number of properties were examined with regard to the potential for dust impacts to arise, the magnitude due to the nature of the works proposed were considered to be low to negligible prior to mitigation and temporary in nature given that 50 metres of trenches will be dug on a daily basis. Impacts following the implementation of mitigation are expected to be negligible with regard to this element of the development.

Converter Station Ballyadam

7.49. With regard to works regarding the development of Ballyadam Converter station in relation to dust emissions I note that there are a number of residential dwellings in the vicinity of this element of the development with one dwelling located c. 20 metres from the boundary of the site. In the absence of mitigation, dust emissions arising from the proposed excavation, demolition and construction works are predicted as being medium to negligible in terms of magnitude. Mitigation measures as above are outlined in section 5.5.1.1 of the EIAR submitted and include measures such as planning the site so dust generating activities are located furthest away from sensitive receptors, enclosing the site with dust barriers during dust generating activities, covering and seeding stockpiles to prevent wind whipping, operating vehicle and machinery at a low speeds to prevent dust generation, persistent monitoring of site operations and dust

generation and adjusting mitigation to avoid nuisance. Such measures will ensure that dust generation is negligible at sensitive receptors.

- 7.50. It is of note that this element of the development is situated outside of Carrigtowhill and within lands zoned for industrial development. Whilst there are a number of one off rural houses within the vicinity of the site, the site is removed from the built up area of Carrigtowhill and having regard to the nature of the proposed works and the location of this element of the development I consider that it is unlikely that such works would give rise to dust emissions of any significance above what is commonly experienced at such construction sites. I am satisfied that the mitigation measures outlined within the EIAR for this element of the development will adequately ensure that dust emissions are negligible at this location.

Landfall Claycastle

- 7.51. With regard to works at the Claycastle the construction compound includes areas above and below the HWM, the maximum extent of construction activities applicable to the construction activities at this location were included for consideration in relation to dust emissions. A dust assessment buffer of 350m was applied in the assessment of sensitive receptors with the closest human receptor to the construction compound being the existing holiday park to the northwest of the proposed works and to the north east and an ecological receptor within 50m.
- 7.52. Approximately 10 residential receptors are located within 20m of the maximum extent of construction activities such as the access route. The expected impact to these properties is low. Risk to ecological receptors at the Ballyvergan Marsh pNHA with regard to dust are also low.
- 7.53. The overall impacts to sensitive receptors in the vicinity of the proposed works at Claycastle are expected to be low to medium without mitigation. Mitigation measures appropriate to this element of the development are outlined in section 5.5.1.3 of the EIAR submitted and the incorporation of these measures is expected to reduce the predicted risk to negligible. Such measures include but are not limited to, water suppression of dust, use of dust suppression equipment where required, regular monitoring, minimisation of drop heights from conveyers and the use of dust barriers where necessary. I am satisfied based on the information submitted that the proposed

works will not give risk to significant effects from dust generation and as such this element of the development is acceptable in this regard.

- 7.54. With regard to the other elements of the interconnector, whilst works below the HWM are not a matter for the Board to finally determine it is stated within the EIAR that such works would be subject to the same mitigation measures, and as such impacts arising from dust are also expected to be negligible.
- 7.55. The operational stage of the proposed development due to the nature of the works being an underground cable and associated infrastructure is not expected to give rise to dust and as such no mitigation is required in this instance.
- 7.56. With regard to the decommissioning of the development and removal of the cable, similar processes would be carried out to the installation process, as such similar impacts would be expected with similar mitigation. It is stated in this regard that subject to appropriate mitigation, impacts arising from dust would not be significant.
- 7.57. Additional impacts in relation to climate arise in relation to the development and the embodiment of carbon within the materials to be used for construction, and emissions in relation to SF₆ through the operation of the development. Total emissions associated with the development are estimated to be 39,650tCO₂e. Such emissions are unavoidable, however mitigation measures are proposed to reduce these emissions which are outlined in Section 5.5 of the EIAR. Such measures will be outlined within the CEMP and will include measures such as switching off vehicle and machinery engines whilst idle and reducing the need for petrol and diesel through the use of battery operated machinery etc.
- 7.58. Overall air quality impacts associated with dust generation, vehicle traffic and combustion activities during construction and operation of the proposed development are expected to be negligible and no exceedances of air quality standards are anticipated. No residual impacts will therefore arise in this regard. However, it is of note that any increase in GHG emissions, given the impact that these gases have on the atmosphere, would be considered significant. It is therefore reasonable to state that a significant impact will arise from the development in this regard. However, such impacts must be considered within the overall context of the scheme which will facilitate the transfer of renewable energy to mainland Europe thus displacing energy that would have otherwise been derived from the burning of fossil fuels. Similarly, at

times of peak demand, the proposed development will also facilitate the transfer of renewable energy from mainland Europe to Ireland which will significantly assist Ireland in meeting its Climate Change commitments by 2050. Thus, considering the overall benefit of the project to facilitate development and use of renewable energy sources, lifetime savings of GHG emissions are anticipated to outweigh the calculated embodied emissions during construction and anticipated SF₆ emissions during operation.

7.59. Overall Air quality and Climate impacts are expected to be neutral to imperceptible. No residual impacts of significance are considered likely and cumulative impacts are short term and imperceptible and not of significance. It is proposed that positive impacts to climate will arise from the operation of the cable.

7.60. I have considered all of the written submissions made in relation to air quality and climate and the relevant contents of the file including the EIAR. I am satisfied that the potential for direct or indirect impacts on air quality and climate can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, by the proposed mitigation measures and with suitable conditions. I am therefore satisfied that the potential for direct or indirect impacts on air quality and climate can be ruled out I am also satisfied that cumulative effects, in the context of existing and permitted development in the surrounding area and other existing and proposed development in the vicinity of the site, are not likely to arise, given that overall risks subject to mitigation being implemented are predicted as being negligible. I have also considered the potential for transboundary effects to arise in relation to Air and Climate and given the limited and insignificant magnitude of expected localised effects I consider that the potential for transboundary are not likely to arise in this instance.

Land, soil, geology and hydrogeology

7.61. Section 6 of the EIAR submitted addresses lands, soils, geology and hydrogeology. Baseline receptors are identified within Section 6.2.4 of the EIAR submitted and include the identification of karst landforms and groundwater bodies. All soils, subsoils and underlying geology for the development are listed with the associated receptor value within tables 6.9 to 6.12. Hydrogeological receptors such as aquifers, boreholes/abstractions, groundwater/surface water interactions and karst features have also been identified as have springs within 1km of the proposed route, these are

listed in tables 6.14 to 6.17. It is of note that the specific activities which pose a risk to these receiving environments are listed in tables 6.19 and 6.20 of the EIAR.

- 7.62. I note from the submissions received that concerns are raised in relation to the presence of karst features within the vicinity of the proposed works and the potential for the proposed works to impact such features and destabilise lands in the surrounding area. Swallow holes, caves, enclosed depressions and turloughs have been identified within 300 to 600 metres from the proposed cable route and are detailed within table 6.9 the EIAR submitted. Similarly, a swallow hole, 2 no. enclosed depressions and a turlough have been identified within 200-500 metres of the proposed converter station site.
- 7.63. Areas of landslide susceptibility at Castlemartyr and Youghal have been identified within 500 m of the proposed cable route, with a closer area of medium landslide susceptibility identified at Water Rock Golf Course. Waulsortian Limestone underlies lands in proximity to and directly underneath the proposed works for much of the cable route and is also identified under the proposed landfall site.
- 7.64. Boreholes are identified within tables 6.14 to 6.17 of the EIAR, it is of note that whilst many of these boreholes are removed from the proposed development and are outside of the 500 metre buffer zone, a number are within the buffer zone and directly adjacent to the cable route. The proposed development intersects two groundwater bodies, the Ballinhassig East Sandstone (IE_SW_G_004) and Middleton limestone (IE_SW_G_0580). The status of both ground water bodies is good.
- 7.65. Works are not expected to impact the functionality or quality of bore holes, however it is stated within section 6.6 of the EIAR that a pre-construction verification survey will be undertaken to establish whether these boreholes remain in use. If in use water quality testing will be carried out to ensure that no degradation of water quality occurs as a result of construction. Should the board be minded to grant permission I consider it prudent to impose a condition which ensures that all boreholes in the zone of influence to the proposed works are monitored and tested prior, during and at completion of the works, this will ensure that water quality baseline conditions are established and adequately monitored for any changes.
- 7.66. With regard to the specific works associated with the development it is stated by the applicant that the proposed cable will be installed in ducts within a trench in the road.

Standard trench dimensions will be approximately 0.8m wide x 1.3m deep, additional space may be required for route alignment to avoid existing services.

- 7.67. Joint chambers will be required to be installed along the cable route to join sections of cable and will be installed underground also. Vegetation and topsoil stripping will be required where necessary to facilitate trench excavation and the construction of traffic passing bays. Removed soils and vegetation will be replaced where possible.
- 7.68. It is of note that the site of the converter station was, prior to 2006 under grass, after this time, permission was granted for a pharmaceutical development and extensive ground works were undertaken. It is stated within the EIAR that stone and gravel were imported to this site and left in situ after the development was abandoned. I note from the submissions received that concerns are raised in relation to the potential for contaminated ground to be present within this element of the development. The applicant has stated that should any contaminated ground be encountered during the construction of the proposed development it will be classified according to Waste Acceptance Criteria and dealt with via a bespoke remediation strategy or materials management plan. Impacts arising from contaminated lands are therefore not expected.
- 7.69. Piling will be carried out at this location and will be monitored during the works for the presence of voids, the use of steel casings for piles will be employed should voids be encountered during construction. It is of note that Karst subsidence forms part of the Construction Environmental Monitoring Plan for this element of the development and will be monitored closely. Impacts to Karst at this location are not anticipated. Nonetheless, should the Board be minded to grant permission I consider that a condition should be imposed to ensure that such monitoring is carried out.
- 7.70. With regard to other geological features encountered, I note the presence of 2 no. depressions within the converter station which collect water. It is proposed to fill these as part of the works to prevent the accumulation of water at this location. I note that the applicant further proposes the installation of areas of compensation storage to collect rainwater given the nature of the proposed bedrock and the number of karst features near to the proposed cable route. It is stated that all stormwater drainage elements of the scheme are to be sealed with an impermeable membrane to protect the surrounding karst features. Any wastewater tanks will also be fully sealed and

there will be no discharge to ground. Having regard to the nature of the works proposed and the mitigation and monitoring proposed in relation to the hydrogeological regime I am satisfied that the applicant has adequately considered the potential for impacts to arise in this regard and has accordingly proposed adequate mitigation measures and monitoring to ensure that the geology and hydrological regime of the development site and surrounding lands as adequately protected.

- 7.71. With regard to the landfall section of the development, cable ducts will be placed within excavated trenches up the beach from the sea to transition joint bay chambers. The excavation into the intertidal zone will require the construction of a causeway to form a stable base from which excavators can work. Excavation of this section will be carried out in winter months to avoid disruption to traffic accessing Claycastle Beach. All soils will be reinstated once the works are complete. Based on the information submitted I am satisfied that impacts in relation to this element of the development will be temporary in nature and not of a magnitude which would be likely to give rise to significant effects.
- 7.72. During the operational stage of the development, maintenance will occur infrequently at joint bays which are underground concrete chambers accessed via manholes, it is of note that all works at the converter station and connection point are above ground and will therefore not require soil or underground disturbance. Water supply where required will be mains fed and wastewater will be tanked and emptied at regular intervals. Given the nature of the development, operational works will not require soil disturbance or other underground disturbance. No impacts to soils, geology or hydrogeology are therefore expected during the operation of the development.
- 7.73. Overall likely significant impacts arising from the construction phase of the development are outlined in table 6.21 of the EIAR submitted and are predicted to be small adverse and short term and will be imperceptible in terms of magnitude. The cable route of the scheme will entail the installation of a duct within the road verge which is similar in nature to the installation of services such as telecoms and lower voltage electrical cables within the road verge. The depth of excavation will not be so significant (c. 1.3 metres) as to impact the hydrogeological regime of the area and the installation of a cable within a sealed duct will not give rise to pollution to ground water. Adequate mitigation measures are proposed to ensure that the risk of accidental

spillages or contamination are minimised to such a degree as to be imperceptible in term of the likelihood of significant impacts.

- 7.74. As mentioned above the decommissioning of the development will entail similar processes to the installation and construction and will therefore give rise to similar impacts in terms of significance.
- 7.75. Cumulative impacts have been considered in this regard and given the nature of the proposed works are considered to be unlikely.

I have considered all of the written submissions made in relation to lands, soils, geology and hydrogeology and the relevant contents of the file including the EIAR. I am satisfied that the potential for impacts on lands, soil, geology and hydrogeology can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, by the proposed mitigation measures and with suitable conditions. I am therefore satisfied that the potential for direct or indirect impacts on lands, soils, geology and hydrogeology can be ruled out. I am also satisfied that cumulative effects, in the context of existing and permitted development in the surrounding area and other existing and proposed development in the vicinity of the site, are not likely to arise. I have also considered the potential for transboundary effects to arise in relation to land, soil, geology and hydrogeology and given the limited and insignificant magnitude of expected localised effects I consider that the potential for transboundary are not likely to arise in this instance.

Hydrology

- 7.76. Section 7 of the EIAR submitted examines the potential for impacts to arise in relation to hydrology. As outlined above the proposed development will largely follow the existing road network between the connection point at Knockraha and Front Strand, Claycastle, Youghal. In terms of interactions with hydrology or hydrological features it is outlined within the EIAR that the development will entail water crossings across minor and major watercourses within the Glashaboy (WFD subcatchment ID:19_11), Tibbotstown (19_2), Owenacurra (19_3), Womanagh (19_16), river sub catchments. All sub catchments are located within the Lee, Cork Harbour and Youghal Bay WFD catchment areas.
- 7.77. As noted within the previous section, there are two depressions present within the Ballyadam Converter Station which currently accumulate water and prevent flooding

of this site. It is proposed to infill these depressions and construct appropriate surface water drainage solutions in accordance with SuDs requirements. In addition to the aforementioned water crossings, the proposed development will also entail the crossing of drainage ditches along the route.

- 7.78. It is important to note at this juncture that the proposed development is not located within any European protected sites, however there is connectivity with a number of European sites via surface watercourses. Impacts to such designated sites will be examined in detail within the Appropriate Assessment section of this report and will therefore not be repeated hereunder.
- 7.79. The HVDC element of the cable has hydrological connectivity to several proposed Natural Heritage Areas namely Lough Aderry and Ballybutler pNHA, Clasharinka Pond pNHA, Ballyvergan Marsh pNHA.
- 7.80. Some of the proposed cable route and converter station is located within a Karst limestone environment including the Dower Spring which feeds the Whitegate Regional Water Supply Scheme. The proposed inner protection area is located along the N25 between Castlemartyr and Killeagh.
- 7.81. The proposed HVAC route is also located approximately 800m upstream of the Tibbotstown Stream which is c. 800 metres upstream of Tibbotstown Reservoir. There are also a number of wells in the area.
- 7.82. A flood risk assessment has been carried out by the applicant in relation to the Ballyadam Converter Station site, and has been examined within Section 6 above. This flood risk assessment concluded that subject to mitigation, no residual flood risk remains within this element of the development. No flooding was identified at the Knockraha site and I note that the proposed cable route will avoid where possible, flood zones A and B. I further note that the proposed cable will be designed in a manner that is resistant to flooding. Jointing and link boxes are designed with watertight connections as standard as these installations are typically underground. The proposed cable installation will not alter ground conditions significantly and is a similar process to the installation of other subsurface services in this regard. The causation or exacerbation of any flooding is therefore not anticipated in relation the cable installation.

- 7.83. I note that pile foundations will be constructed at the Ballyadam site which is underlain by karst bedrock. Groundwater patterns and flows are determined by voids and fissures within such bedrock and significant voids can be present in such areas. Given the underlying geology it is proposed to utilise pile and raft foundations in order to ensure the stability of the converter station. The piling process will be monitored closely for indications of voids. In the event that such features are encountered the applicant proposes to utilise steel casings to retain concrete and to protect ground water in this area. Measures proposed within Section 7.5.1.2 of the EIAR will ensure that impacts to ground water do not arise at this location and that concrete does not overspill into potential karst voids.
- 7.84. I note within the submissions made that a number of observers raise concerns in relation to the potential for the proposed development to impact water supplies. It is important to note in this regard that the proposed depth of trench to accommodate the proposed cable is c. 1.3 metres. The depth of the proposed trench is similar in dimensions to that of other services within the road verge. In the context of private wells which can have depths in excess of 100 metres it is considered that the proposed cable route is significantly unlikely to impact any such water supplies. The same applies in the case of public water supplies.
- 7.85. With regard to development at the Ballyadam site, as mentioned above it is proposed to pile drive foundations at this location which will be monitored closely in order to determine any change to bedrock conditions. The use of piling is also unlikely to give rise to groundwater impacts of any significance given that steel casing are proposed to be utilised in areas where voids are present. The use of underground surface water storage containers will also assist in protecting groundwater at this location by preventing the ingress of high volumes of surface water which can impact groundwater quality and accelerate karst destabilisation.
- 7.86. As mentioned above a number of water crossing are required to facilitate the cable installation. All known water crossings are identified in table 7.8 of the EIAR submitted. Water crossings will be either open cut or horizontal directional drilling (HDD), existing services will be crossed at certain locations and such works will be carried out in consultation with the relevant service provider.

- 7.87. Open cut water crossings have the potential to generate silt and suspended solids, in order to prevent such impacts, the applicant proposes to carry out these works in a dry works area and will be carried out in fisheries open season unless otherwise agreed with IFI. Restoration of open cut trenches will be carried out immediately after works are completed in order to prevent any deterioration of water quality in watercourses. Mitigation is proposed to ensure the protection of water quality during such works and is outlined in section 7.7.1.2 of the EIAR submitted. Mitigation includes providing 10 metre buffer zones between storage and working areas, the avoidance of wet concrete works adjacent to watercourses, the appointment of a ECoW to oversee all works, the use of geotextile or timber matting in areas of soft ground, storage of fuels and oils in bunded areas and refuelling within bunded areas. The use of spill kits will also be employed in the event of an accidental spillage. It is also proposed to utilise silt traps and fences in order to protect watercourses. All mitigation proposed is standard practice and known to be effective. I am therefore satisfied that works adjacent and over watercourses will not give rise to significant effects to water quality.
- 7.88. Pumping of trenches by HDD could result in increased flows to surrounding watercourses which could affect hydrological discharges and dilution and also have the potential to release contaminants or sediment into the watercourse. In order to prevent such impacts, it is proposed to utilise competent specialist contractors. Drilling methodology is outlined in section 3.3.8.3 of the EIAR and specifies that a closed loop drilling fluid and circulation system will be utilised to minimise the volume of fluid required on site. Cuttings will be pumped into a circulation system trailer and monitored to properly understand ground conditions. Upon completion of drilling, sites will be restored to the original condition.
- 7.89. The practice of HDD is commonplace and utilised frequently in the laying of services. I am satisfied based on the methodology outlined in section 3.3.8.3 and mitigation measures outlined in section 7.7 of the EIAR that the proposed process is not likely to give rise to significant effects to hydrology. Notwithstanding that it is proposed to carry out preconstruction surveys as outlined in section 7.7. I consider it prudent, should the Board be of a mind to grant permission, to impose a condition that all sites must be inspected for the presence of invasive plant species prior to the commencement of works, should any such species be encountered the management of same should be

carried out in accordance with an invasive species management plan to be submitted to the Local Authority prior to the commencement of development. It is significantly important to prevent the spread of such species and particular care must be taken during works adjacent to watercourses.

- 7.90. As outlined within the EIAR, waste material from this process must be disposed of appropriately at a licenced facility in accordance with the waste management plan.
- 7.91. Given the nature of the proposed development, which is largely underground and comprising a solid insulated cable and the process proposed for the operation of both the converter station and substation I am satisfied that significant impacts to hydrology are not likely to arise in relation to the operation of the proposed development. Impacts are predicted as being insignificant to imperceptible within the EIAR submitted.
- 7.92. It is of note that decommissioning of the proposed development will likely give rise to similar effects to that of construction, therefore subject to appropriate mitigation it is unlikely that decommissioning would give rise to significant effects.
- 7.93. Cumulative impacts have been considered in this regard and given the nature of the proposed works are considered to be unlikely.

I have considered all of the written submissions made in relation to hydrology and the relevant contents of the file including the EIAR. I am satisfied that the potential for impacts on hydrology can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, by the proposed mitigation measures and with suitable conditions. I am therefore satisfied that the potential for direct or indirect impacts on hydrology can be ruled out. I am also satisfied that cumulative effects, in the context of existing and permitted development in the surrounding area and other existing and proposed development in the vicinity of the site, are not likely to arise. I have also considered the potential for transboundary effects to arise in relation to hydrology and given the limited and insignificant magnitude of expected localised effects I consider that the potential for transboundary are not likely to arise in this instance. It is important to note in this regard that all works are to be carried out within the terrestrial boundaries of County Cork and no international boundaries are crossed by the proposed works.

Biodiversity

- 7.94. Section 8 of the EIAR submitted examines the potential for impacts to arise in relation to biodiversity. This element of the development will focus on biodiversity in general within the site and its surrounds. The lands within and adjacent to the development site largely comprise managed and unmanaged grassland, treelines, ornamental scrubs and large areas of hardstanding. It is important to note at the outset that the proposed development does not fall within the boundary of any European sites, Ramsar Sites, designated NHAs, Nature reserves or Biosphere Reserves. The site will pass through one pNHA – Ballyvergan Marsh which is located directly west of Claycastle Beach and is adjacent to Loughs Aderry and Ballybutler pNHA and Clasharinka Pond pNHA. The aforementioned are not within the development boundary of the proposed works.
- 7.95. The methodology to determine the zone of influence is outlined in section 8.2.2 and differs depending on the construction and operational activity.
- 7.96. In order to determine baseline conditions, a desktop study was carried out to identify any site and /or features of significance within the development site and the surrounding area. All resources reviewed are listed within section 8.2.4 of the EIAR and details of correspondence with relevant agencies including NPWS are outlined in sections 8.3.1 to 8.3.2.5.
- 7.97. Field surveys which comprise walkovers, habitat, mammal, badger, aquatic and numerous bird surveys were undertaken on numerous dates at different parts of the day and night along the entire route and are outlined in section 8.2.3 and subsequent sections of the biodiversity section of the EIAR. Details of professionals who carried out surveys are provided in section 8.2.3.1. Specific details with regard to the time, location and methodology of surveys carried out are detailed within subsequent paragraphs of the EIAR.
- 7.98. I note the limitations of the surveys as outlined in section 8.4 and also note that where limitations arose relating to access issues due to the pandemic, it is proposed to carry out preconstruction surveys in order to ensure that all potential impacts are adequately identified and mitigated for, if required. I also note in this regard that where access limitations occurred the habitat type at these locations comprises of agricultural

grassland and amenity grassland and is not of specifically high value, significant effects are therefore not considered to be likely at these locations.

- 7.99. An Appropriate Assessment Screening report has been submitted and will be examined under the Appropriate Assessment Section hereunder. Accordingly, connectivity to European sites will be examined within the Appropriate Assessment section of this report.

Baseline Conditions

- 7.100. In terms of the baseline conditions, all habitats and species encountered within the area of the development and adjacent lands within the relevant zone of influence are outlined within tables 8.4-8.14. Habitat types within the footprint of the proposed development are outlined in table 8.15 and comprise mainly scrub, grassland, hedgerow and watercourses. As mentioned above a section of the site will pass through wet grassland and swamp associated with the Ballyvergan Marsh pNHA. The majority of the proposed development will be contained within the existing road verge and at brownfield sites.

- 7.101. It is important to note that whilst the presence of karst features within the vicinity of the site is noted within the biodiversity section of the report it is in relation to associated vegetation. The examination of karst features has been dealt with within the hydrogeology section of this assessment and will not therefore be repeated hereunder.

Ballyvergan Marsh

- 7.102. Ballyvergan Marsh pNHA is described as an area of significance as it contains the largest fresh water coastal marsh in Co. Cork exhibiting well developed plant communities and holding a sizable breeding population of Reed Warblers. It is stated within the site synopsis that the main interest of the site is ornithological with the reed bed supporting Reed Warblers, Reed Buntings, Moorhen, Coot, Water Rail and Mallard. A previous record of this site includes sighting of a damselfly and Webb's wainscot which is a vulnerable moth.

- 7.103. Winter roost surveys have indicated that hen harrier roosting sites are present at Ballyvergan Marsh pNHA. Whilst different roosting sites were chosen by the birds, a distinctive preference was noticed for the western side of the marsh with the closest roost being over 700 metres from the proposed cable trench. A number of other

protected bird species were observed, Peregrine Falcon were recorded foraging once in November, 3 Little Egrets were observed every month, Curlew were observed flying from the marsh in February and Kestrel and Sparrowhawk were observed once also.

7.104. Small numbers of Mute Swan, Mallard, Teal and Grey Heron were also recorded over the survey periods. The Ballyvergan Marsh pNHA, is therefore identified as being of National Importance and is an SER for wintering birds.

Loughs Aderry and Ballybutler pNHA

7.105. Loughs Aderry and Ballybutler pNHA includes two nutrient rich lowland lakes surrounded by farmland and marsh. This site is of significance for plant species such as orange foxtail and musk thistle and bird species including Gadwall and a variety of waterfowl.

Clasharinka Pond pNHA

7.106. Clasharinka Pond pNHA is described as a large pond, located south of the Castlemartyr – Youghal road. A healthy population of orange foxtail are found at this location in the mud during summer months.

7.107. Three other pNHA are not directly linked to the proposed development site but have connectivity to the site and include Great Island Channel, Ballymacoda and Blackwater Estuary. These sites are connected with European designated sites and will be examined in this context within the Appropriate Assessment below.

7.108. A botanicals survey was carried out at the site of the proposed converter station, plant species found were not dependent on groundwater inundation but are fed from surface water. The two depressions in this area are free draining and do not contain vegetation. I note that Calcareous Grassland was encountered during the survey which without proper management will be lost to scrub succession.

7.109. A list of potential flora to occur within the footprint of the proposed development is outlined in table 8.17. Of the flora identified, I note that 3 are near threatened. However, it is stated that given the nature of the habitat in the works area it is unlikely that these species occur within the site.

7.110. I note that three badger setts were observed in the vicinity of the HVDC route during the walkover and none were recorded at the converter station. One badger sett is

directly adjacent to the works area with the other two located c. 170 and 275 metres from the works area.

7.111. In terms of bat roost locations, a number of trees were identified along the route which may be suitable for bats. All bridges along the cable route were examined for use by bats and none were found to be suitable, nor was an abandoned building found at the site of the proposed converter station.

7.112. With regard to otter, I note that otter signs were recorded during aquatic surveys, no holts were identified within 150 metres of the development, however an otter spraint was identified at Glenathonocash River under the bridge and it is stated that holts may be present on lands that were inaccessible during the survey.

7.113. No other protected mammals were noted during the surveys but it is stated that suitable habitat was recorded and therefore there is a possibility of such mammals being present. Preconstruction surveys will ensure that such species are adequately protected if encountered. I note that other mammals such as fox and rabbit were observed on cameras but are not protected species.

7.114. With regard to bird species, I note that bird surveys were undertaken over three survey seasons. 8 species listed on the red list were observed and include, Bar-tailed Godwit, Common Scoter, Curlew, Dunlin, Eider, Grey Plover, Oystercatcher, and Redshank.

7.115. Sanderling were noted in large numbers within the vicinity of the proposed development site but were circa 400 metres from the proposed works with only a small number of note within the works area.

7.116. Bar-tailed Godwit and Curlew were noted in significant numbers above that for national significance but both occurred outside of the zone of influence for impacts to arise.

7.117. Oystercatcher were also recorded but at 6% of national significance figure. I note that no other noteworthy birds were recorded within the Zol.

7.118. Marine bird surveys indicated that a variety of species were recorded, ten of which are SCI of nearby SPA sites.

Habitat value

7.119. In terms of the value of habitats within the development site, I note that scrub and improved grassland are of Local Importance and of lower value. Wet grassland and treelines are identified as being of Local Importance and of high value. Oak-Ash-Hazel

woodland which is located within the zone of influence is considered to be of County Importance and Reed Swamp (associated with Ballyavergan Marsh) is considered to be of National Importance. Other habitats identified include fixed dune habitat, it is of note, in this regard, that the proposed works will pass under a section of degraded dune habitat, higher quality fixed dune habitat will be avoided by the proposed development. This habitat is identified as being of County Importance.

- 7.120. Aquatic survey results are outlined in table 8.19. I note from these surveys that suitable habitats for salmon, lamprey and eels were observed within a number of watercourses. The Ownenacurra River is identified as being of County Importance given its supporting habitat for fisheries. 7 Watercourses were identified as being of Local Importance and of a higher value for supporting habitat for fisheries species, whilst 5 no. watercourses were identified as being of Local Value of lower value.
- 7.121. With regard to birds, Sanderling and Bartailed Godwit were the only species that reached National thresholds of importance. Claycastle is identified as being of National Importance for wintering fowl and may be an importance ex-situ site of coastal SPAs including Ballymadcoda SPA, Blackwater Estuary SPA and Cork Harbour SPA.
- 7.122. I note that a number of bird species were recorded at the Ballyadam site and include 3 no. SCIs of nearby SPAs. This site has been identified as being of Local Importance and of lower value with regard to wintering birds.
- 7.123. In terms of the converter station site, breeding bird activity was low and is concentrated in the northern boundary berm adjacent to the railway line. With regard to birds, the Ballyadam site is identified as being of local importance and breeding birds are an SER.
- 7.124. Breeding bird survey carried out in 2020 at Ballyvergan Marsh recorded a total of 43 species, 37 were recorded as breeding or likely to be breeding, of the 6 that were not breeding it is stated that it is likely that such species breed close to this site.
- 7.125. Given the levels of breeding birds recorded this site is identified as being of National importance and SER for breeding birds.
- 7.126. Cable route surveys identified this element of the development as being of Local Importance of high value for breeding birds and is also identified as an SER.

Potential for likely significant effects

Connection point

7.127. With regard to the proposed connection point at Knockraha, given the absence of any significant habitats or other biodiversity receptors, it is stated within the EIAR that likely significant effects are not expected. I note that the closest water body this element of the development is c. 650 metres and can therefore be avoided by construction work.

Construction compound and Lay down areas

7.128. Site clearance will be required at these areas and the erection of hoarding and fencing will also be required. Temporary construction compounds will be required at the connection point at Knockraha, the converter station at Ballyadam and the landing point at Claycastle. Once construction works are finalised, all aggregate, fencing and hoarding associated with such compounds will be removed and lands reinstated to their previous condition. Such compounds are not proposed in areas where there is sensitive or significant habitats or biodiversity receptors. Any discharges from workers welfare facilities will be tanked and removed off site on a frequent basis. The locations of all such areas are identified on drawings listed in section 8.6.1.2 of the EIAR.

HVAC/HVDC cables and passing bays

7.129. It is important to reiterate that the majority of the HVAC/HVDC follows the existing road alignment. Offline sections at Castlemartyr and Killeagh avoid the towns and will pass under agricultural lands.

7.130. Cable laying in narrow roads will occur within the centre line of the road to avoid interference with tree routes, vegetation clearance in such circumstances will not be required in such instances. It is likely, however that vegetation clearance will be required along sections of the cable routes where the roadway is too narrow to accommodate proposals. This may result in root systems and hedgerows being impacted by works. It is stated within the mitigation measures for such works that removed vegetation will be replaced and bolstered where suitable in order to have a positive long-term impact on biodiversity.

7.131. Water crossing are examined within Section 7 of the EIAR and where drilling is not utilised, works will be carried out in a dry works area to protect water quality and aquatic life. All works at, under or within watercourses will be carried out in manner which does not impact or deteriorate sensitive ecological receptors.

Ballyadam Converter Station

7.132. It is of note that this site has been cleared and filled in relation to a previous development which was not completed. The proposed works will result in the removal of existing vegetation within the site and will be reinstated where possible and/or relocated within the site in accordance with a landscaping scheme. It is of note that whilst there is a noteworthy level of bird activity in the vicinity of the site there are no habitats or species of significance within the works area of the site.

Ballyvergan Marsh

7.133. 65 metres of cable will run under the Ballyvergan Marsh pNHA. It is important to note that works at this location will be carried out by HDD. A works area at the entry point and exit point and the provision of a jointing bay and trenching from the road to the entry and exit areas will be the only areas whereby lands will be disturbed at the Marsh. Bog mats are proposed in temporary works areas to protect habitat. The overall area required to be removed / disturbed is c. 500sqm. As a result of the proposed works there is a potential for small scale loss of phragmites reed bed habitat with an overall medium term slight negative impact to habitats in the works area.

7.134. With regard to hen harrier, roosts are in excess of 700 metres from the proposed works and the resultant impact is identified as being a temporary moderate negative impact.

7.135. In relation to reed warbler, as their habitat will be reinstated where disturbed within the marsh, impacts are expected to be a temporary slight negative in terms of magnitude.

7.136. Impacts to Loughs Aderry and Ballybutler pNHA and are outlined in section 8.7.1.2 of the EIAR and the development has the potential to give rise to water quality impacts in the event that pumping out of trenches is required. Impacts to this site in the absence of mitigation are identified as being of temporary moderate in terms of magnitude.

7.137. With regard to Clasharinka Pond pNHA, I note that c. 80 metres of the cable will be within the boundary of this pNHA, it is important to note however that this section of the proposed cable route is within the public road and the potential for impacts to arise in relation to this pNHA are associated with surface water via field drains. The pond is located c. 170 metres from the proposed works impacts are therefore identified as having the potential to be temporary and imperceptible in terms of magnitude.

7.138. Potential for the development to affect other sensitive ecological receptors in the absence of mitigation are listed within table 8.31 of the EIAR submitted. I have reviewed this table and note that impacts range largely from moderate to slight with the exception of calcareous grassland present within the Ballyadam converter station which will have the potential for permanent significant effects.

7.139. Mitigation Measures

7.140. Mitigation measures in relation to biodiversity are outlined within Section 8.8 of the EIAR submitted. I note with regard to translocation of habitats or species if required and replanting of vegetation that has been removed, it is stated that monitoring of these items will be carried out on a regular basis as determined by the relevant ecologist, in unspecified instances, monitoring will be carried out within the first year and on a biannual basis for five years. At the end of the five years the requirement for monitoring will be reassessed and a new schedule put in place is necessary.

7.141. Where hedgerows are to be removed permanently, it is proposed to plant compensatory hedgerows in the vicinity. This is of particular relevance to works at the Ballyadam Converter Station site whereby the permanent removal of hedgerow is required and compensatory hedging is proposed in its place.

7.142. Confirmatory surveys will be carried out prior to construction as the location of some species and habitats can change over time and as a result of storm damage to trees etc.

7.143. An independent ECoW will be employed to oversee and review measures proposed by the contractors ECoW.

7.144. Works within the Ballyvergan Marsh will be fenced off and noise attenuation hoarding will be placed around the fenced area. Rubber mats and wide track machinery will be utilised to prevent rutting and direct damage to saturated ground. Where excavation is required any turves of common reed /reed canary grass will be removed to a temporary storage area immediately adjacent to the works area and reinstated upon completion of the works. It is of note that the removal of turves will be carried out during dry weather and monitored by the ECoW. Works are proposed between April and September subject to mitigation for breeding birds.

- 7.145. Turves will be retained in single layers on bog mats to retain integrity for a maximum period of 8 weeks. Where bare earth remains, it is stated that these areas will be planted with reed shoots.
- 7.146. In relation to the area to be reinstated it is proposed to carry out works in agreement and consultation with NPWS and CCC.
- 7.147. With regard to works within areas containing sand dunes, it is proposed to erect the less disturbed habitat parcels to protect these areas. Works will encroach onto sand dune areas temporarily for less than a week and in order to protect these areas it is proposed to use bog mats to prevent rutting. Where works are to be carried out over a longer period, turves will be removed and maintained for reinstatement and will be monitored by the ECoW subject to input from a suitably qualified botanist.
- 7.148. Reinstated sand dunes will be fenced off to minimise disturbance and monitored to ensure effective reestablishment.
- 7.149. With regard to calcareous grasslands recorded within the Ballyadam Converter Station it is of note that in order to prevent the permanent loss of this habitat a translocation will be carried out to remove these from the footprint of the proposed building. A strip of land along the western edge of the converter station site has been identified as a temporary receptor site for the habitat to be stored. The steps required for this translocation are outlined in Section 8.10.1.5 of the EIAR. Permanent translocation will occur 3-5 years after the temporary move and a management plan for this habitat will be agreed with the IDA to ensure suitable maintenance is carried out in perpetuity.
- 7.150. Mitigation in relation to other habitats within the Ballyadam site in relation to recolonising of areas of bare ground and other such positive actions for biodiversity will form part of a biodiversity plan for the wider development of the IDA park.
- 7.151. Any wet grasslands disturbed or removed during construction will immediately be reinstated post works. Such areas of reinstatement will be monitored and recreated where failures occur.
- 7.152. With regard to the removal of ash woodland it is also proposed to reinstate removed trees where required. Removal of hedgerows, treelines and grassland verges at passing bays will be reinstated after 24 months. Reinstatement will seek to have a positive impact on biodiversity with the use of only native species. All other sites will

be reinstated as close as possible to their pre construction condition. A five year aftercare program will be put in place to ensure success of reinstatement.

7.153. In relation to Orange Foxtail it is proposed to carry out a preconstruction survey to identify any plants at risk. In the event that a risk is identified a suitably qualified botanist will work in consultation with NPWS to identify additional protective measures. Translocation will be a last resort for this plant. Quarterly site visits will be carried out by a botanist post construction to ensure the success of any plants found close to construction works.

7.154. Mitigation measures also include confirmatory surveys in relation to Pennyroyal, Tufted Feather Moss, Wild Clary and Great Knapweed. Avoidance of such species will be preferable and in the event that such species occur within the works area a translocation plan will be implemented in consultation with the NPWS.

7.155. It is clearly stated within the EIAR that translocation sites will be monitored by appropriately qualified professionals and any failures will be compensated at locations adjacent to the development site.

7.156. Such measures outlined above are common practice in such instances and are known to be highly effective measures in the protection and reestablishment of plant species. Monitoring is essential to the successful implementation of such mitigation measures, and should the Board be minded to grant permission I recommend that conditions relating to frequent monitoring are imposed.

7.157. Similar to the foregoing, confirmatory surveys will be undertaken in relation to Otters, Badgers, Bats, Red Squirrel, Pygmy Shrew, Hedgehog and Stoat. All species within the construction works areas will be avoided where possible or removed under licence by the NPWS. Species specific mitigation is outlined within section 8.10.1.7 and will not be repeated hereunder of the EIAR. I note such measures include the avoidance of works during breeding season for certain species.

7.158. In relation to watercourses mitigation for the protection of fisheries will be carried out in agreement with IFI and will follow IFI guidelines in this regard.

7.159. A method statement for each watercourse crossing will be prepared by the ECoW to be agreed with IFI. Fish salvage operation will be carried out where dry works are

required which will be subject to licence by IFI. Instream works will only be carried out from July to September unless otherwise agreed with IFI.

7.160. I note that bank side turves will be retained and reinstated on completion of works and the monitoring of such reinstatements will be carried out over a three-year period.

7.161. The use of concrete is required during construction and mitigation measures proposed to protect watercourse are outlined in section 8.10.1.8 of the EIAR. Such measures have been examined in relation to hydrology and are considered to be acceptable. It is of note however that the ECoW's will monitor the pH levels of the relevant watercourse, should any change in levels arise, works will be ceased immediately and the entry point to the watercourse will be identified and appropriate measures taken to prevent further escape.

7.162. Mitigation measures in relation to Waterfowl and winter raptor roosts are outlined in section 8.10.1.9 of the EIAR and include measures such as the use of noise abatement to protect breeding birds from noise disturbance and the cessation of works at locations such as Ballyvergan Marsh until hen harrier have left the site. Monitoring will take place by an appropriately qualified ornithologist.

7.163. Mitigation in relation to breeding birds is outlined in section 8.10.1.10 of the EIAR. It is stated that clearing of vegetation will occur outside of the breeding season. Confirmatory surveys will be undertaken and exclusion zones will be implemented should breeding birds be encountered. Confirmatory surveys in relation to riparian habitat will be carried out over 100 metres both up stream and downstream of the proposed works areas. All surveys and works at these areas will be undertaken in consultation with NPWS. The loss of any suitable nesting sites will be replaced with new nest sites in line with IFI and NPWS consultation.

7.164. Mitigation in relation to amphibians includes the carrying out of preconstruction surveys and the relocation of these species if found within the works area. Similar measures will be employed in relation to Viviparous lizard.

7.165. Invasive plant species have been recorded near to the proposed works areas at various locations. A confirmatory survey is proposed to be carried out prior to construction and any additional findings will be incorporated into the CEMP for the proposed works. Mitigation measures in relation to invasive plant species is outlined in section 8.10.1.13 and includes the restriction of works close to areas of plants

identified. Should the board be minded to approve permission, I recommend that a condition is imposed which seeks the submission of an invasive species management plan to be held of file by the Local Authority and to be developed in consultation with the NPWS where required.

7.166. Operational mitigation relates to the use of lighting that accords with design recommendations from the Bat Conservation Trust. Lighting proposals will be reviewed by an experienced bat ecologist to ensure that lighting will not negatively impact bat populations.

7.167. Other operational mitigation relates to the continued monitoring of translocated habitat such as calcareous grassland at the Ballyadam Converter Station site and reinstatement of reedbeds at Ballyvergan Marsh and dune grassland at Claycastle Beach.

7.168. Opportunities to enhance biodiversity relate to reinstatement and additional planting of treelines and hedgerows. I note the submission from the DAU in which it is stated that a lost opportunity for enhancement exists in relation to the removal of an area of wetland in the Ballyvergan pNHA to facilitate the cable. It is requested by the department to remove this material permanently and to also remove an area of the pNHA which has been infilled in past years and replace with material from the proposed trenches and with material directly adjacent to the works. It is also proposed that borrow pits could be utilised within the area which would be of benefit ecologically within this wetland.

7.169. Whilst I note the recommendations of the DAU, the applicant is limited to the lands within the development boundary with regard to the implementation of both mitigation and enhancement works. I draw the Board's attention to the commitment of the applicant to achieve 25-30% open pools, 40-50% wet reed, 15-25% dryer reed and 5% scrub within the area to be disturbed by the proposed works. It is important to reiterate at this juncture that the proposed works in this area will only comprise a trench of 65 metres in length, with a total area of lands to be disturbed at 500sqm.

7.170. The area of works is not substantial and I am therefore satisfied that the proposed mitigation measures and enhancement works within the development site are acceptable and will adequately ensure that long term negative impacts do not arise.

- 7.171. Subject to the foregoing mitigation measures, residual biodiversity impacts are outlined in table 8.32 and are expected to range between imperceptible to a slight negative.
- 7.172. It is of note that decommissioning of the proposed development will likely give rise to similar effects to that of construction, therefore subject to appropriate mitigation it is unlikely that decommissioning would give rise to significant effects.
- 7.173. Cumulative impacts have been considered in this regard and given the nature of the proposed works are considered to be unlikely.
- 7.174. I have considered all of the written submissions made in relation to biodiversity and the relevant contents of the file including the EIAR. I am satisfied that the potential for impacts on biodiversity can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, by the proposed mitigation measures and with suitable conditions. I am therefore satisfied that the potential for direct or indirect significant impacts on biodiversity can be ruled out. I am also satisfied that cumulative effects, in the context of existing and permitted development in the surrounding area and other existing and proposed development in the vicinity of the site, are not likely to arise. I have also considered the potential for transboundary effects to arise in relation to biodiversity and given the limited and insignificant magnitude of expected localised effects I consider that the potential for transboundary are not likely to arise in this instance. It is important to note in this regard that all works are to be carried out within the terrestrial boundaries of County Cork and no international boundaries are crossed by the proposed works.

Landscape

- 7.175. Section 9 of the EIAR submitted examines the potential for impacts to arise in relation to landscape and visual impact. It is of note that visual impacts in relation to the Knockraha substation have been fully addressed within Section 6 above and will not be repeated hereunder, it is important to mention at the outset that likely significant adverse effects are not considered to arise in relation to this element of the development and the magnitude of impacts in relation to this element of the development is predicted to be slight.
- 7.176. In order to determine baseline conditions for the development site a desk top study was carried out which sources reviewed are outlined in section 9.2.2 of the EIAR. A

field survey was also undertaken in October 2020 which entailed an assessment of the landscape and landscape features and collecting of baseline photography at each of the selected viewpoints.

7.177. Landscape impact assessment criteria is outlined in section 9.2.4.1 of the EIAR and refers to landscape character, value and sensitivity, magnitude of likely impacts and significance of landscape effects. The degree to which a landscape can accommodate change without detrimental effect to its characteristics will determine the magnitude of impact from a development.

7.178. Potential for adverse impacts

Converter Station Ballyadam

7.179. The proposed Converter Station is the most substantial development above ground in relation to the proposed development. This element of the development will occupy a compound of circa 200m x 150m and will consist of external electrical componentry of heights up to approximately 12m above ground level as well as 25m tall lighting masts. This element of the development will also include 3 substantial buildings of differing heights with the upper most 25m above ground level. Associated car parking and perimeter fencing will also be constructed at this site.

7.180. It is stated within the EIAR that this element of the proposed development will not be discernible beyond 5km of the site and as such 5km is the outer parameter of the LVIA study for this area. Landscape sensitivity at this site is considered to be low as it forms part of a large scale partially abandoned industrial site which is located between the N25 road corridor to the south and a section of the railway to the north. It is of note that the surrounding rural landscape is identified as a High Value Landscape. However, it is important to note that this designation within the Cork Landscape Character Assessment is associated with the city harbour and estuary which does not have a strong relationship with the landscape surrounding the Ballyadam site.

7.181. It is stated that the surrounding landscape is dominated by roads infrastructure, the townscape of Midleton and Carrigtowhill and quarrying activity. It is for these reasons that the landscape is considered within the EIAR to have a medium sensitivity to development. The significance of impacts arising from the proposed development at construction and operational phases is stated to be moderate to slight in magnitude.

7.182. Visual impacts are examined in section 9.5.2.2. Zone of Theoretical Visibility mapping is presented in figure 9.8 and 9.9 in relation to this element of the development and demonstrates that visibility of this element of the development is predominantly to the north, east and west of the site.

I note that of the 8 viewpoints used to assess the visual impact of this element of the development, only one (VP1) represented a designated view. However, views are hampered by roadside screening. Visual receptors were assigned a medium to low level of sensitivity and having regard to the assessment carried out it is apparent that overall impacts range from moderate to slight after mitigation measures are implemented such as additional screen planting and muted paint colours for the buildings.

Landfall site - Claycastle

7.183. The landfall at Claycastle will involve open cut trenching, a junction bay and a communications cabinet, which will be the only above ground visible element of the development at this site. Construction visibility will be apparent but temporary in nature. A radius of 500 metres of the development has been set for this element of the development which is acceptable.

7.184. Section 9.5.1.5 of the EIAR examines the magnitude of impacts arising at this section of the development. Given the nature of the works, visual and landscape impacts are localised and the overall magnitude of impact is predicted to be negligible during the construction stage and imperceptible at the operational stage.

HVAC & HVDC route

7.185. There will be no material expression of the HVAC & HVDC cable above ground other than joint bay covers therefore visual impacts do not arise. However, the construction element of the development will be visible but temporary in nature. The rate of the proposed works will be rapid with 50m of cable to be laid each day.

7.186. Sections of the cable route will pass off road and will require the removal of vegetation thus creating a change in the landscape. Such changes will largely be temporary with vegetation being replanted and bolstered where possible.

Given the transient nature of this element of the works the magnitude of overall impacts to landscape is predicted to be slight to imperceptible.

Construction Compounds, laydown areas and passing bays

There will also be a construction compound at the relevant nodes which will accommodate storage of excavated material and construction materials as well as worker welfare facilities. There will also be construction laydown areas along the route where construction materials will be temporarily stored and passing bays to allow for the maintenance of traffic flows. The location of such compounds will be close to the road and impacts will be temporary in nature. Section 9.5.1.4 examines the overall impacts of these elements of the development and given the transient nature of these elements of the development it is considered that the magnitude of such impacts during construction are moderate to slight in open countryside areas and slight within road corridors. Such compounds will not be required during the operational phase of the development, long term impacts to landscape and long term visual impacts are therefore avoided.

Intra-Project cumulative effects

7.187. Cumulative impacts are examined within section 9.5.5 of the EIAR with regard to the landfall site whereby the offshore element of the development will connect to the onshore element. As mentioned above these works will require the construction of a temporary cofferdam, the use of a temporary storage area, parking and security fencing. The overall magnitude of impacts associated with this element of the development are considered to be moderate to slight in relation to the construction phase of the development and imperceptible during the operational phase of the development.

7.188. Cumulative impacts relate to the potential for the development to occur in tandem with other substantial developments in close proximity to the Converter Station site. In respect of the Connection point at Knockraha, cumulative effects may relate to any intensification of this site and the scale and nature of the development. Mitigation planting will help to reduce such cumulative visual impacts at these sites as will well thought out design and layout of any future developments in these areas.

Mitigation Measures

7.189. Mitigation measures are outlined in section 9.6 of the EIAR and include the use of screen planting, a muted and graduated colour scheme on buildings to reduce the overall perceived scale and massing of buildings.

7.190. Post mitigation impacts range from imperceptible to moderate.

7.191. I have considered all of the written submissions made in relation to Landscape and Visual Amenity and the relevant contents of the file including the EIAR. I am satisfied that the potential for direct or indirect impacts on Landscape and Visual Amenity can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, by the proposed mitigation measures and with suitable conditions. I am therefore satisfied that the potential for direct or indirect impacts on Landscape and Visual Amenity can be ruled out. I am also satisfied that cumulative effects, in the context of existing and permitted development in the surrounding area and other existing and proposed development in the vicinity of the site, are not likely to arise. The proposed development will occur entirely within the County of Cork, no transboundary effects will arise in relation to Landscape and Visual Amenity.

7.192. Archaeology and Cultural Heritage

7.193. Section 10 of the EIAR submitted examines the potential for impacts to arise in relation to Archaeology and Cultural Heritage. I note at the outset that concerns have been raised within submissions relating to the Knockraha Substation element of the development regarding cultural heritage and archaeology. It is contended within the submissions received that the area surrounding Knockraha has a rich history. It is stated that there are a number of recorded monuments in the area and there are concerns that the proposed development would hamper the development of tourism in relation to these features. It is also stated that the Knockraha East bomb factory is located adjacent to the substation site, there is no above ground evidence of this facility as it was below ground. It is the intention of an observer to develop a historical trail and for Knockraha to become a visitor attraction.

7.194. Baseline Conditions

7.195. In order to establish baseline conditions, it is stated within Section 10.3.1 of the EIAR submitted that a desktop survey was carried out and was augmented by an examination of aerial photography as well as a field surveys which were undertaken on 6th June 2020, 8th October 2020, 13-14 October 2020 and 4th December 2020. The main sources consulted in completing the desktop survey are listed within the aforementioned section of the EIAR. The purpose of the field survey was to assess

local topography, in order to identify any archaeological or historical sites currently not recorded.

7.196. It is of note that sites are classified in terms of importance in accordance with the NRA guidelines, I consider this to be an acceptable method to assist in the assessment of the magnitude of potential impacts.

7.197. A study area comprising of a 250 metres radius of the proposed development was examined in relation to National Monuments, Recorded Archaeological Monuments, Protected Structures and/or their curtilage, ACAs, and structures recorded in the NIAH. Previous excavations within any townland traversed by the proposed development were also included within the study area, as were unregistered features of cultural heritage along the route and areas of archaeological potential along the route. The extent of the study area can be seen within figure 10.1 of appendix 10.

7.198. The archaeological and historical context of the proposed development site is outlined within Section 10.4.2 of the EIAR and details a history from prehistoric times to the War of Independence. 8 no. Protected Structures are present within the study area of the development and are listed within table 10.10 of the EIAR. 2 no. Architectural conservation areas, namely Castlemartyr ACA and Killeagh ACA are also in close proximity to the proposed development. There is one undesignated cultural heritage site that comprises extant remains within the study area which is known as Bloomfield Mill. I note that the remnants of the mill race were visible at the time of inspection by the archaeologist. Ten undesignated cultural features which do not comprise extant remains were also of note during the field surveys, reference is also made within this section to the presence of remains relating to the War of Independence at Knockraha as referred to within the submissions received resulting in a total of 12 unregistered cultural heritage sites.

7.199. The EIAR also lists 56 no. townland boundaries and areas of archaeological potential with the study area and notes that there is a total of 66 RMPs within the study area.

7.200. Potential for likely significant effects

7.201. The potential for impacts to arise in relation to the aforementioned architectural and cultural features, in the context of the proposed development, relate to construction activities, whereby soil excavation could disturb archaeological material when excavations occur in the vicinity of known sites. Locations at risk of such impacts are

listed in table 10.15 and the description of such impacts are outlined in table 10.16 of the EIAR. I note from this table that where proposed works are deemed to have a significant impact prior to the implementation of mitigation, such impacts relate to works passing through the zone of notification whereby the possibility of subsurface archaeological features could still be present. It is important to note at this juncture that impacts relating the operational phase of the development are not expected. It is also important to note that visual impacts to either Protected Structures or Recorded Monuments are not expected, given the subsurface nature of the cable and the location of the significant above ground works at Ballyadam and Knockraha, removed from any such structures or monuments which are of significant visual value above ground. I am therefore satisfied that significant visual impacts will not arise at these locations.

Ballyadam Converter Station

7.202. It is of note that a number of RMP are present within and adjacent to the Ballyadam site of the proposed Converter station. I note that all features have been fully excavated and recorded as part of the previous industrial development at this site. I further note that the proposed Converter Station will not impact directly upon these sites, however the proposed access road will be built directly adjacent to a 'Burnt out Mound' and a Fulacht Fia. It is proposed that all works, similar to the rest of the proposed development, are monitored by an archaeologist in order to ensure appropriate measures are employed in the event that any archaeological material is encountered. I am satisfied, given the nature of the remains and the history of this site that the proposed development will not give rise to significant affects on archaeology within this element of the development. Should the Board be minded to approve, the protect of archaeology at this site can be adequately ensured via condition.

Cable Route

7.203. As outlined above the proposed cable route is, for the most part, within the existing road verge, whereby lands have been subject to disturbance during the construction of the road. It is therefore unlikely that the installation of a cable in such a limited trench would give rise to significant archaeological impacts. Nonetheless it is proposed to monitor all works along the cable route for the presence of archaeological remains. Such monitoring will be carried out by an appropriately qualified archaeologist. Such

measures are common practice and known to be effective in the discovery of undisturbed archaeological remains. Whilst I note that there are a significant number of monuments along and adjacent to the proposed cable route (which are identified within appendix 10), I am satisfied that based on the information provided within both the EIAR and the relevant appendices that archaeological impacts relating to works within the existing carriageway can be adequately mitigated for and that significant impacts in this regard are also unlikely. It is of note that the magnitude of impacts pertaining to this section of the route subject to mitigation, as outlined within the EIAR submitted, are expected to range from slight to moderate.

7.204. There are a number of locations along the cable route whereby the route will pass through agricultural lands and over/under a watercourse. The EIAR refers to such locations within table 10.16. Particular reference is made to Kiltha River whereby construction may impact an area of archaeological potential. It is considered that the riverine island and western river channel may be artificial creations relating to the demesne landscape of the Castlemartyr Estate which lies immediately to the south west. In order to prevent any such impacts it is proposed to carry out a preconstruction underwater archaeological survey to determine if any aqua archaeology exists at this location. Such measures are also proposed at the Disour River, Dungourney River and the Owenacurra River and its tributaries. Given the limited dimensions of the proposed trenches required to facilitate the installation of the cable, I am satisfied that such preconstruction surveys coupled with archaeological monitoring during construction are adequate measures to ensure the protection of undiscovered archaeological material/features at such locations. Should the Board be minded to grant permission, I am satisfied that such measures can be adequately controlled by relevant conditions.

7.205. It is important to note that subject to mitigation the expected impact to archaeology at such locations, as outlined within the EIAR submitted, is expected to be slight.

Mitigation Measures

7.206. Overall, mitigation is proposed to reduce the magnitude of impacts which will range from slight to moderate. No significant impacts are expected once mitigation is implemented as proposed within the EIAR. All mitigation measures are outlined in section 10.7 of the EIAR. It is of note that aquatic archaeological surveys will

incorporate an appropriate dive and wade survey as well as metal detection. HDD will avoid any direct disturbance to the river or watercourse.

7.207. Prior to construction a combination of advance geophysical and advance archaeological test trenching will be carried out for all off road sections of the cable routes and laydown areas and compounds.

7.208. In locations where sections of townland boundaries are to be removed a detailed survey and record will be created by a suitably qualified archaeologist. Sections of the hedges will be removed and analysed and all result recorded. Any removal of vegetation will be reinstated where possible. In total the route is expected to impact 12 townland boundaries the magnitude of which is expected to be slight.

7.209. Prior to the commencement of works at Claycastle Beach test trenching will be carried out at the landfall site. Exposed peat deposits at the SW of Claycastle Beach where there is a site of a possible Fulacht Fia trough will be fenced off with a 15m buffer provided for.

7.210. Monitoring of all ground breaking works within the Claycastle location will be carried out by a qualified archaeologist and the site where a metal object of interest has been observed and any archaeological material encountered during test trenching at this location will be protected by a similar 15m buffer. In the event that material can not be preserved in situ it is proposed to carry out a full archaeological excavation under licence.

7.211. All mitigation measures proposed are standard in practice and known to be effective in the protection of undiscovered archaeological material and features.

7.212. As mentioned above, concerns have been raised within the submissions received on the impacts of the proposed development, particularly the Knockraha substation extension, upon built and cultural heritage. In this context I note a national study undertaken by EirGrid and included within Volume 3C Part 2 of the EIAR report Appendices which examines the impacts of overhead transmission lines and other such electrical infrastructure on land use patterns and development. It is concluded within this study that there is no evidence of any significant impacts arising from the presence of transmission infrastructure on the pattern of community, social and tourism land uses.

- 7.213. Whilst I note the concerns raised in this regard, I do not consider the proposed extension to an existing substation to have such a significant impact that it would negatively impact the development of any cultural heritage trail or the development of the bomb factory adjacent to this element of the development as a tourist attraction.
- 7.214. The proposed development at this location is within the existing fence line of the existing substation and will not significantly exacerbate the current situation at this site from a visual perspective.
- 7.215. In the context of impacts at various stages of the development it is important to note that decommissioning of the proposed development will likely give rise to similar effects to that of construction, it is unlikely therefore that decommissioning would give rise to significant effects.
- 7.216. Cumulative impacts have been considered in this regard and given the nature of the proposed works and the likely effects expected as outlined above I considered significant cumulative effects to be unlikely.
- 7.217. I have considered all of the written submissions made in relation to Archaeology and Cultural Heritage and the relevant contents of the file including the EIAR. I am satisfied that the potential for impacts on Archaeology and Cultural Heritage can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, by the proposed mitigation measures and with suitable conditions. I am therefore satisfied that the potential for direct or indirect impacts on Archaeology and Cultural Heritage can be ruled out. I am also satisfied that cumulative effects, in the context of existing and permitted development in the surrounding area and other existing and proposed development in the vicinity of the site including the proposed offshore element of the interconnector, are not likely to arise. I have also considered the potential for transboundary effects to arise in relation to Archaeology and Cultural Heritage and given the slight to moderate magnitude of expected localised effects I consider that the potential for transboundary are not likely to arise in this instance. It is important to note in this regard that all works are to be carried out within the terrestrial boundaries of County Cork and no international boundaries are crossed by the proposed works.

Roads and Traffic

- 7.218. Section 11 of the EIAR examines the potential for impacts to arise in relation to road and traffic. It is important to note at the outset that likely significant effects do not arise

in relation to the operational phase of the development. Likely significant effects relate to the construction phase of the development and are examined hereunder. A list of all roads within the study area is provided within table 11.3 of the EIAR. The primary traffic route in the area is the N25. The EIAR acknowledges that traffic will pass over roads outside of the study area but given the dispersed nature of such traffic movements, significant impacts are not considered likely.

- 7.219. In order to determine current baseline conditions, a desk top survey was carried out which incorporated details relating to existing traffic levels. It is stated that current traffic levels due to the COVID pandemic are not reflective of the normal situation, therefore pre-pandemic traffic levels have been utilised for the purpose of assessment.
- 7.220. It is noted at the outset that given the predominantly rural nature of the development site whereby traffic levels are low it is possible to derive unrealistic determinations of significance when considered against purely quantitative data. Therefore, additional qualitative criteria have been utilised when assessing the magnitude of change. The details of such qualitative criteria are set out in table 11.7 of the EIAR. The EIAR also examines the potential for impacts to arise in relation to local walking, cycling and public transport routes.
- 7.221. With regard to the development site construction operations, it is proposed that materials will be sourced locally and will travel along the N25. A number of depots will be installed along the route whereby materials will be stored and moved to the relevant section of the cable route as needed. It is expected that no more than 10 vehicles will be present at work sites along the cable route at any one time. Abnormal loads relate to development at the Ballyadam Converter Station and the Knockraha substation extension whereby specialist vehicles will be utilised. It is anticipated that 5 abnormal loads will be delivered to the Knockraha substation and an additional 5 abnormal loads delivered to the Converter station.
- 7.222. I note the submission from TII in which it is mentioned that a licence is required for the transportation of abnormal loads. Whilst this requirement it is not within the Board's jurisdiction to finally determine, I note from Section 11.6.1.1 of the EIAR that it is the applicant's intention in advance of undertaking the delivery of such loads to obtain the necessary consents and approvals and to carry out any required accommodation works in accordance with the requirements of the relevant authorities.

7.223. Abnormal loads will enter the county from either Dublin Port and follow the M8 or Ringskiddy and Horgan's Quay and follow the local road network. An abnormal load study was carried out in September 2020 and October 2020 and concluded that for both route options only minor works involving the temporary relocation of street furniture would be required to safely accommodate abnormal load deliveries. It is further stated within the EIAR that no incursion onto private land would be required to accommodate abnormal loads.

7.224. I note from Section 4.5.1.2 that HGV movements are expected to peak at 300 vehicles per day at the Converter Station with a peak of 100 workers at this location.

Potential for likely significant effects

7.225. In relation to traffic impacts it is stated within the EIAR that traffic and transport activities will be undertaken within the working hours of 7am – 7pm Monday to Friday and 7am to 2pm on Saturdays.

7.226. It is anticipated that 291,074 movements will occur over 28 months, of which 94,854 movements will be HGV movements. As mentioned, the main source of these movements will be the construction of the converter station at Ballyadam off the N25. Works pertaining to the cable installation will be temporary in nature at any one location and no more than 10 workers will be present at any works site along the cable and at any time.

7.227. Having regard to the nature and location of the proposed development, likely significant effects may occur in relation to the following:

- Driver Delay
- Community Effects
- Accidents and Safety
- Cumulative impacts

Driver Delay

7.228. As mentioned above construction related effects such as driver delay have the potential to arise as a result of construction works associated with the cable laying physically restricting usable road space. In some instances, this will result in a requirement for localised road closures or lane closure. Several diversion routes are

proposed in relation to potential road closures and are identified within table 11.10 of the EIAR submitted. I note that such impacts are expected to last from 3 days to 13 weeks and as such will be temporary in nature.

7.229. With regard to the N25 I note that all works will occur within the existing verge and will not give rise to significant driver delays along this route. Traffic signals will be required at sections whereby lanes are closed for temporary periods, and it is predicted that queuing will clear at the change of lights with no residual queuing occurring along this route. In addition, it is of note that a traffic increase of 1% is predicted for the N25. Given such a limited increase, a further detailed assessment beyond traffic management is not required for this section of the development.

7.230. With regard to local roads, I note that a number of submissions raise concerns in relation to farm and residential access and road closures which would affect access to homes. It is of note from the EIAR that traffic volumes will rise above 10% to 12% on such roads. I note that this increase does not exceed the carrying capacity of the road. Such roads will operate below their theoretical capacity levels inclusive of a 12% increase in movements.

7.231. Given that traffic on local roads is relatively low under normal circumstances, the magnitude of the increase relating to construction is deemed as having a moderate but temporary impact. Traffic diversions on local roads where road closures are required are expected to create a 20 minute driver delay. One cable route section (AC02, AC03) triggers a moderate impact in terms of driver delay. However, such an impact is temporary in nature and in terms of significance is deemed to be minor. I note that access to properties will not be impeded by the development and some road closures may be unavoidable in the event that consent is not forthcoming in relation to passing bays.

7.232. I further note concerns raised by CCC in relation to the size and location of jointing bays where road widths are restricted. I consider should the Board be minded to grant permission that such issues can be adequately addressed by way of condition.

Community Effects

7.233. In general community facilities are located within the towns and villages of the receiving environment. Such facilities are outlined in Section 4.3.4 of the EIAR. With regard to such facilities in the immediate vicinity of the proposed works, I note that the

location of local community-based infrastructure is largely located on the N25 which will experience an insignificant rise in traffic levels. Access to such facilities will therefore not be impeded by the proposed development.

7.234. With regard to walking and cycling routes impacted by the proposed development, such routes are outlined in table 11.25 of the EIAR. Impacts are not expected to be significant in relation to such routes and it is stated that adequate accommodations can be made for pedestrians where required.

Accidents and Safety

7.235. It is stated within Section 11.5.14 of the EIAR submitted that research has shown that collision increases are proportionate to traffic increases. Based on this modelling approach the applicant has forecasted the proportional increase that would be expected in relation to collisions. Such predictions are outlined in table 11.26 whereby it is indicated that incidents of collisions would rise by a maximum of 0.1 incidents. In many cases there is no increase in collision risk. The modelling carried out indicates that the overall increase in collisions within the study area during construction is negligible.

7.236. Overall, it is concluded that impacts to roads and traffic arising from the construction of the proposed development range from no impact to minor in nature. It is of importance to note that all impacts relating to construction are temporary in nature.

7.237. With regard to the operational phase of the development, no discernible changes to traffic flows are expected. Operational works are outlined in Sections 11.5.2.1 to 11.5.2.3 in which it is stated that maintenance is usually carried out on an annual basis for all aspects of the development and infrequently for emergencies or unforeseen issues.

Cumulative Effects

7.238. In terms of cumulative effects, the proposed development has been considered cumulatively with known permitted and planned developments within the immediate environs of the proposed development. Of particular relevance to the proposed development is the planned upgrade of the N25 which is referred to within the TII and Cork County Council submissions. This upgrade proposal is included within the National Development Plan and is planned for commencement in 2025. The upgrade

includes works to a section of road adjacent to the proposed Ballyadam Converter Station site. I note that it is stated within the EIAR that a number of options affecting the Ballyadam IDA park are under consideration by the Cork Road Design Office.

7.239. Given the expected date of commencement of this infrastructure the proposed upgrade will not be in place when the proposed works are being carried out. Given that the proposed works could potentially conflict or impact the proposed N25 upgrade, it is proposed by the applicant to consult on a regular basis with TII, Irish Water, IDA, and Cork County Council to ensure that all plans align and that mitigation if required can be implemented in a manner that does not affect the planned upgrade works.

7.240. It is expected, therefore, that subject to mitigation the proposed works will not give rise to any significant cumulative effects. I am satisfied, based on the information submitted and the contents of both TII and Cork County Council's submission that cumulative effects will not arise in relation to the planning upgrade of the N25, as works will not be carried out at the same time and adequate provisions have been made, with regard to mitigation and consultation in order to prevent significant environmental effects from arising.

Mitigation Measures

7.241. As mentioned above mitigation measures are proposed to reduce the magnitude of effects arising from the proposed construction phase of the development and are outlined in Section 11.6.1.1 of the EIAR.

7.242. It is proposed that all effects will be minimised through the adoption of a Traffic Management Plan which has been included within the appendices of the EIAR. Measures to minimise effects include the use of pre-defined routes for construction traffic which will be agreed with CCC, TII and An Garda Síochána. Designated car parking for site personnel will be provided and workers will be required to car pool to site. Only essential vehicles required to facilitate construction will be permitted at cable installation sites. All truck and construction vehicles will be washed down at the Ballyadam site in order to prevent mud and debris from being deposited on the public road. It is also proposed to appoint a nominated person responsible for the co-ordination of all elements of traffic and transport during the construction phase, this person will also liaise with the community so that there is a direct point of contact for residents in relation to site operation and traffic issues should the need arise.

7.243. I note, given the negligible level of traffic associated with the operational phase of the development, mitigation measures are not deemed necessary.

7.244. Subject to the implementation of mitigation measures, no significant residual traffic or road impacts are predicted during either the construction or operational phase of the development. Given the location of the development within the boundaries of Cork County, transboundary effects do not arise.

7.245. I have considered all of the written submissions made in relation to traffic and transportation and the relevant contents of the file including the EIAR. I am satisfied that the potential for direct or indirect impacts on traffic and roads can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, by the proposed mitigation measures and with suitable conditions. I am therefore satisfied that the potential for direct or indirect impacts on traffic and road can be ruled out. I am also satisfied that cumulative effects, in the context of existing and permitted development in the surrounding area and other existing and proposed development in the vicinity of the site, are not likely to arise.

Material Assets

7.246. Section 12 of the EIAR examines the potential for impacts to arise in relation to material assets. This section of the EIAR examines utilities such as telecommunications, power supply, surface water infrastructure, foul drainage and water supply. Known utilities are outlined in table 12.1 of the EIAR. Utilities will be required at the Ballyadam Converter Station site, and it is stated will require the installation of a 10kV overhead line to the site. I note a pre connection inquiry has been sent to Irish Water to install a connection to an existing 150mm main which will be required for firefighting purposes and welfare facilities. I note that surface water will tie into the existing main sewer to the southwest of the IDA park.

7.247. All reasonable efforts will be made to prevent disruption to local services in the area and the potential for impacts will be localised and temporary in nature. I note that the applicant has stated within previous sections of the EIAR that works will be carried out in consultation with the relevant agencies and authorities and relevant mitigation measures will be implemented to reduce impacts.

7.248. As noted in previous sections above, wastewater from welfare facilities to be provided at the Claycastle, Knockraha and Ballyadam sites will be contained within a holding

tank and emptied at regular intervals. Overall, no significant effects are predicted in relation to utilities and welfare facilities.

7.249. Mitigation measures in relation to utilities is outlined in section 12.5.1.1 of the EIAR and includes measures such as prior notification of service disruption, thorough investigations to identify existing services and consultation with relevant agencies and concerned parties.

7.250. Waste Management is also considered within this section of the EIAR. Waste streams are identified in table 12.2 of the EIAR. The contractor will be obliged to aim for an overall recycling rate of 70% with regard to construction and demolition waste.

7.251. Mitigation relating to waste management is outlined in section 12.5.1.2 of the EIAR and includes measure for the segregation of construction waste, management of works to reduce waste quantities, the storage and removal of waste will be carried out in accordance with the CEMP and by appropriately licenced contractors.

7.252. No residual impacts are expected in relation to the construction phase of the development. Cumulative impacts were considered within the EIAR and it is stated that there is a potential for cumulative impacts associated with the construction phases of the development occurring at the same time as the construction phases of other developments. Where works are occurring in parallel that appropriate mitigation measures are considered within the parameters assessed within the EIAR, which would include the relative liaison meetings, co-ordination of plans. Subject to such measures, cumulative impacts are not expected to be significant.

7.253. No significant impacts are expected in relation to the operational phase of the development and mitigation measures proposed are considered to be sufficient to ensure that transboundary effects from the proposed development to utilities and waste management do not occur.

7.254. I have considered all of the written submissions made in relation material assets and the relevant contents of the file including the EIAR I am satisfied that the potential for direct or indirect impacts on material assets can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, by the proposed mitigation measures and with suitable conditions. I am therefore satisfied that the potential for direct or indirect impacts on material assets can be ruled out I am also satisfied that cumulative effects, in the context of existing and permitted development

in the surrounding area and other existing and proposed development in the vicinity of the site, are not likely to arise.

Noise and Vibration

7.255. Section 13 of the EIAR submitted examines the potential for impacts to arise in relation to noise and vibration. In order to establish baseline conditions a noise survey was carried out on the 26th August 2020 and 27th January 2021 to represent the closest noise sensitive locations to the proposed Converter Station, Connection point, and landfall site at Claycastle. It is of note that the noise survey was undertaken during the COVID pandemic and may not be reflective of actual noise levels at the locations chosen.

7.256. It is important to note at the outset that the proposed development will not give rise to vibration during the operational phase of the development. Operational Vibration is therefore not examined further within the EIAR.

Baseline Conditions

7.257. With regard to the receiving environment the following was observed at the time of surveys being undertaken. At the proposed connection point within the existing Knockraha 220kV substation, 5 no. dwellings were noted as being the closest receptors to the west and south west of the substation. Noise measurements were undertaken from the 4th – 27th January 2021. The dominant noise climate at the closest receptors at this location is the background noise emitted from the substation and vehicle movements. Typical noise levels in this area are outlined in table 13.5 and do not exceed 54dB during the day and 42dB at night.

7.258. Along the cable route noise dominant sources arise from traffic movements with noise sensitive receptors in the form of individual housing proliferated along these stretches of road with the exception of off road section near to Castlemartyr and Killeagh.

7.259. With regard to the Converter Station site, given the location along the N25 and the presence of the Cork to Cobh rail line which runs along the northern perimeter of this site the main source of noise disturbance was noted to arise from these two elements of infrastructure. Maximum typical background noise levels during the day were 67dB and 55 at night, all such noise levels at the closest receptors are outlined in table 13.6 of the EIAR.

7.260. In relation to the landfall site at Claycastle, background noise measurements positions are identified on figure 13.3 and typical noise levels at sensitive receptors are outlined in table 13.7 of the EIAR.

7.261. With regard to predicted noise levels, it is important to note that thresholds apply to sections of a 24hr period, i.e 65dB during daytime hours, 55dB during evening hours and 45dB at night. Impacts arising from noise and vibration emissions are predicted as follows:

Connection Point

7.262. Maximum noise levels expected during construction will not exceed 47dB, construction vibration will not exceed 0.1mm/s which is insignificant and operational noise will not exceed 40dB. As per section 13.4.1.3 I note that measures will be undertaken to ensure noise from transformers will not exceed current levels at this site.

HVAC & HVDC Cable route

7.263. Noise levels during construction will be temporary in nature and only last during working hours for 1-2 days. Such transient impacts are not considered to give rise to significant effects. Vibration will arise from pavement breaking etc and will also be transient. Where works are to be carried out within 16 metres of a sensitive receptor there is a likelihood of significant effects, however such effects are temporary in nature.

Converter Station

7.264. Maximum noise levels expected during construction will not exceed 52dB during piling works and as such appropriate daytime thresholds will not be exceeded. It is of note that abnormal deliveries may take place during night-time hours and may cause disturbance. Mitigation measures proposed will ensure that disturbance is kept to a minimum. Vibration levels at the closest sensitive receptor during piling works are deemed not be significant and are outlined in table 13.14 of the EIAR.

7.265. In terms of operational noise at this location, all sources are outlined in table 13.15 and the maximum noise expected to be experienced at sensitive receptors will not exceed 62dB during the day and 37 at night.

7.266. Overall noise impacts relating to the Converter Station are predicted as not being of significance.

Landfall, Claycastle

7.267. Predicted noise levels in relation to construction are outlined in table 13.17 and 13.18 and will exceed appropriate thresholds for evening and night time hours. The delivery of abnormal loads during night time hours also has the potential to cause disturbance and exceed appropriate noise thresholds. Sheet piling vibration start up is also predicted to be significant. No significant noise impacts are expected during the operation of the development at this location.

7.268. With regard to the decommissioning of the proposed development, similar effects to the construction phase are anticipated.

Mitigation Measures

7.269. Mitigation measures are outlined in section 13.6 of the EIAR and include compliance with the CEMP and local authority controls on noise and vibration. A stakeholder communications plan will be developed and implemented and will facilitate community engagement prior to construction. In the event that delivery of abnormal loads has to be carried out during night time hours mitigation will include the avoidance of reversing movements to prevent alarm sensors from sounding, avoid queuing and ensure the switching off of engines whilst waiting. Ensure unloading is carried out in day time hours.

7.270. Other mitigation measures seek to ensure that noise generating activities are undertaken in day time hours and prior notification of works which can give rise to vibration will be given. In order to protect overwintering birds from noise disturbance, works at Ballyvergan Marsh as outlined above will be restricted during morning hours. Residents within 55 metres of the temporary cofferdam will be notified prior to works and such works will be carried out during daytime hours. In the event that night work is required, notification will be given to all noise sensitive receptors likely to be impacted.

7.271. Other mitigation measures include the use of acoustic enclosures around transformers, the use of silencers on transformers etc and the use of sound shields to prevent inappropriate low tonal noise emissions.

7.272. Condition surveys will be undertaken of sensitive structures in close proximity to works giving rise to vibrations.

7.273. Overall, with the exception to works at the landfall site, likely significant effects with regard to noise and vibration are not predicted. Impacts relating to construction works at the landfall site, whilst significant, is unavoidable and of a temporary nature and adequate mitigation is proposed to reduce the magnitude of such effects.

7.274. I have considered all of the written submissions made in relation to noise and vibration and the relevant contents of the file including the EIAR. I am satisfied that the potential for direct or indirect impacts on noise and vibration can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, by the proposed mitigation measures and with suitable conditions. I am therefore satisfied that the potential for direct or indirect impacts on traffic and road can be ruled out I am also satisfied that cumulative effects, in the context of existing and permitted in the surrounding area and other existing and proposed development in the vicinity of the site, are not likely to arise.

Major Accident and or Disasters

7.275. Section 14 of the EIAR submitted examines the potential for significant adverse effects of the proposed development on the environment deriving from the vulnerability of the proposed development to risks of relevant major accidents and/or disasters. It is stated that the proposed development has been designed and will be constructed and maintained in accordance with the highest safety standards complying with the provisions of the guidelines published by the WHO.

7.276. Table 14.3 identifies the likely significant adverse effects in relation to each element of the development and refers to mitigation measures proposed within each relevant section of the EIAR which seeks to address any potential impacts. No significant adverse effects with regard to major accidents and or disasters are predicted.

7.277. I have considered the relevant contents of the file including the EIAR in relation major accident and or disaster and I am satisfied that the potential for direct or indirect impacts on major accident and or disaster can be ruled out. I am also satisfied that cumulative effects, in the context of existing and permitted development in the surrounding area and other existing and proposed development in the vicinity of the site, are not likely to arise.

Interactions between the Factors and Cumulative Impacts

7.278. I have considered the interrelationships between factors and whether these may as a whole affect the environment, even though the effects may be acceptable when considered on an individual basis. Section 15 of the EIAR examines the potential impact of interactions.

7.279. I consider that there is potential for population and human health to interact with all of the other factors (biodiversity, water, air and climate, noise, landscape and visual, cultural heritage and material assets – traffic). The details of all other interrelationships are set out in Section 15 of the EIAR which I have considered.

7.280. I am satisfied that effects as a result of interactions, indirect and cumulative effects can be avoided, managed and / or mitigated for the most part by the measures which form part of the proposed development, the proposed mitigation measures detailed in the EIAR, and with suitable conditions.

Reasoned Conclusion

7.281. Having regard to the examination of environmental information contained above, to the EIAR and supplementary information provided by the applicant and the submission from the planning authority, prescribed bodies, and observers in the course of the application, is considered that the main significant direct and indirect effects of the proposed development on the environment are, and will be mitigated as follows:

- Negative impacts on **human health and population** arising from construction include noise, traffic and dust disturbance to residents of neighbouring dwellings. All of these impacts are low to moderate. Adequate mitigation measures are proposed to ensure that these impacts are not significant and include adequate mitigation for operational noise.
- Benefits/positive impacts on the **Air and Climate**, the proposed development will have a significant positive effect on human health and population due to the displacement of CO₂ from the atmosphere arising from a reduction of fossil fuel energy production.
- Negative impacts on **Water** could arise as a result of accidental spillages of chemicals, hydrocarbons or other contaminants entering watercourses, the sea or groundwater via piling activities during the construction phase of the

development. These impacts will be mitigated by measures outlined within the application and can therefore be ruled out.

- Negative impacts on **biodiversity** relate to the disturbance of breeding birds as a result of noise disturbance, the removal of habitat in the form of hedgerows and treelines, the temporary removal of habitat within the Ballyvregan Marsh and the translocation of habitat within the Ballyadam Converter station and the potential translocation of species within works areas. Such impacts are not considered significant and can adequately be mitigated for within the scheme. Other impacts relate to the removal of treelines and hedgerows, such areas will be reinstated where small areas cannot be reinstated, vegetation will be planted in the vicinity to bolster existing treelines and hedgerow. Significant impacts are therefore not expected in this regard.
- **Noise and Dust** impacts arise during the construction phase from construction activities. These impacts will be mitigated through adherence to best practice construction measures and the use of noise abatement at sensitive locations such as Ballyvergan Marsh and Claycastle. Noise disturbance from the operation of the development is not likely to arise and noise disturbance from decommissioning is similar in impact as construction. Impacts arising from noise and dust disturbance during the construction, operational and decommissioning stages can therefore be ruled out.
- Negative **traffic** impacts arise during the construction phase of the development, these impacts will be mitigated through the implementation of a traffic management plan and a construction management plan. Whilst some localised impacts arising from road closures may arise, significant impacts arising from traffic can be ruled out.

7.282. The EIAR has considered that the main significant direct and indirect effects of the proposed development on the environment would be primarily mitigated by environmental management measures, as appropriate. Thus, having regard to the foregoing assessment, I am, therefore, satisfied that the proposed development would not have any unacceptable direct or indirect effects on the environment.

8.0 Appropriate Assessment

- 8.1. The NIS dated June 2021 has been prepared by Mott MacDonald on behalf of EirGrid. The NIS prepared by Mott MacDonald describes the proposed development, its receiving environment and relevant European Sites in the zone of influence of the development. It was informed by a desk top study, maps and ecological and water quality data from a range of sources.
- 8.2. The report concluded that, taking into account the project design and the implementation of mitigation measures identified in the NIS, the proposed development will not result in adverse effects on the integrity of any Natura 2000 site.
- 8.3. Having reviewed the NIS, the supporting documentation and the further information submitted, I am generally satisfied that it provides adequate information in respect of the baseline conditions, identifies the potential impacts, uses best scientific information and knowledge and provides details of mitigation measures. I am satisfied, that the information provided is generally sufficient to allow for appropriate assessment of the development.

Stage 1 Screening

- 8.4. Notwithstanding the submission of a NIS, it is prudent to review the screening process to ensure alignment with the sites brought forward for AA and to ensure that all sites that may be affected by the development have been considered.
- 8.5. Having regard to the information and submissions available, nature, size and location of the proposed development and its likely direct, indirect and cumulative effects, the source pathway receptor principle and sensitivities of the ecological receptors, I consider the following European Sites are relevant to include for the purposes of initial screening for the requirement for Stage 2 appropriate assessment on the basis of likely significant effects.

8.6. **Table 1.0**

European Site Name & Code	Distance	Qualifying Interest	Source- pathway- receptor	Considered further in screening

Great Island Channel SAC (001058)	1.7km from SAC	<p>Mudflats and sandflats not covered by seawater at low tide [1140]</p> <p>Atlantic salt meadows (Glauco-Puccinellietalia maritima) [1330]</p>	Downstream connectivity has been identified.	Yes, development has potential for impacts to habitats and species arising from sediment deposition, deterioration of water quality
Ballymacoda (Clonpriest and Pillmore) SAC (000077)	2.8km from SAC	<p>Estuaries [1130]</p> <p>Mudflats and sandflats not covered by seawater at low tide [1140]</p> <p>Salicornia and other annuals colonising mud and sand [1310]</p> <p>Atlantic salt meadows (Glauco-Puccinellietalia maritima) [1330]</p> <p>Mediterranean salt meadows (Juncetalia maritimi) [1410]</p>	Downstream connectivity has been identified	Yes, development has potential for impacts to habitats and species arising from sediment deposition, deterioration of water quality
Blackwater River SAC (002170)	1.4km	<p>Estuaries [1130]</p> <p>Mudflats and sandflats not covered by seawater at low tide [1140]</p> <p>Perennial vegetation of stony banks [1220]</p> <p>Salicornia and other annuals colonising mud and sand [1310]</p> <p>Atlantic salt meadows (Glauco-Puccinellietalia maritima) [1330]</p> <p>Mediterranean salt meadows (Juncetalia maritimi) [1410]</p> <p>Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachium vegetation [3260]</p>	There is no meaningful hydrological connectivity to this site as connectivity is via the Irish Sea. However, a number of OIs have the potential to occur outside of the designated site boundary.	Yes, Potential for disturbance relating to noise and vibration has the potential to adversely affect Otter populations that may commute within the area of the proposed works.

		<p>Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]</p> <p>Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]</p> <p>Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]</p> <p>Austropotamobius pallipes (White-clawed Crayfish) [1092]</p> <p>Petromyzon marinus (Sea Lamprey) [1095]</p> <p>Lampetra planeri (Brook Lamprey) [1096]</p> <p>Lampetra fluviatilis (River Lamprey) [1099]</p> <p>Alosa fallax fallax (Twaites Shad) [1103]</p> <p>Salmo salar (Salmon) [1106]</p> <p>Lutra lutra (Otter) [1355]</p> <p>Trichomanes speciosum (Killarney Fern) [1421]</p>		
Lower River Shannon SAC (002165)	78km from SAC	<p>Sandbanks which are slightly covered by sea water all the time [1110]</p> <p>Estuaries [1130]</p> <p>Mudflats and sandflats not covered by seawater at low tide [1140]</p> <p>Coastal lagoons [1150]</p> <p>Large shallow inlets and bays [1160]</p> <p>Reefs [1170]</p> <p>Perennial vegetation of stony banks [1220]</p> <p>Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</p>	<p>The Lower River Shannon is connected to the development site via the sea.</p> <p>Bottle Nose Dolphins are the only OI which has the potential to occur within the ZOI for the proposed works.</p>	<p>No</p> <p>The only QI of this site that may be affected is the Bottle Nose Dolphin. However, works relating to the proposed terrestrial development are of a sufficient</p>

		<p>Salicornia and other annuals colonising mud and sand [1310]</p> <p>Atlantic salt meadows (Glauco-Puccinellietalia maritima) [1330]</p> <p>Mediterranean salt meadows (Juncetalia maritimi) [1410]</p> <p>Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachium vegetation [3260]</p> <p>Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinia caerulea) [6410]</p> <p>Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnus incana, Salix alba) [91E0]</p> <p>Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]</p> <p>Petromyzon marinus (Sea Lamprey) [1095]</p> <p>Lampetra planeri (Brook Lamprey) [1096]</p> <p>Lampetra fluviatilis (River Lamprey) [1099]</p> <p>Salmo salar (Salmon) [1106]</p> <p>Tursiops truncatus (Common Bottlenose Dolphin) [1349]</p> <p>Lutra lutra (Otter) [1355]</p>		<p>distance from the zone of influence for this species and significant adverse effects are therefore not likely. This site does not require further consideration.</p>
<p>Saltee Islands SAC (000707)</p>	<p>81km</p>	<p>Mudflats and sandflats not covered by seawater at low tide [1140]</p> <p>Large shallow inlets and bays [1160]</p> <p>Reefs [1170]</p>	<p>This site is connected to the proposed development via the sea.</p> <p>Grey Seals are the only OI</p>	<p>No,</p> <p>Grey Seals are sensitive to noise and vibration, the zone of influence for</p>

		<p>Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</p> <p>Submerged or partially submerged sea caves [8330]</p> <p>Halichoerus grypus (Grey Seal) [1364]</p>	<p>which has the potential to occur within the Zol for the proposed works.</p>	<p>these impacts is 500 metres. The potential for impact only extends to 200m below the HWM. Seals do not frequent this area and are therefore outside of the Zol. The potential for significant adverse effects is therefore not likely. This site does not require any additional consideration.</p>
<p>Roaring River Bay and Islands SAC (000101)</p>	86km	<p>Large shallow inlets and bays [1160]</p> <p>Reefs [1170]</p> <p>Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</p> <p>European dry heaths [4030]</p> <p>Submerged or partially submerged sea caves [8330]</p> <p>Phocoena phocoena (Harbour Porpoise) [1351]</p> <p>Lutra lutra (Otter) [1355]</p> <p>Halichoerus grypus (Grey Seal) [1364]</p>	<p>This site is connected to the proposed development site by the sea. Harbour Porpoise and Grey Seal are the only QI which have the potential to occur within the Zol for the proposed works.</p> <p>Given the dispersion and</p>	<p>No,</p> <p>Grey Seals and Harbour Porpoise are sensitive to noise and vibration, the zone of influence for these impacts is 500 metres. The potential for impact only extends to 200m below the HWM. Seals do not</p>

			dilution action of the sea all other QIs of this site are outside of the Zol.	frequent this area and Harbour Porpoise sightings only relate to strandings. These OIs are therefore outside if the Zol. The potential for significant adverse effects is therefore not likely. This site does not require any additional consideration.
Slaney River SAC (000781)	101km	<p>Estuaries [1130]</p> <p>Mudflats and sandflats not covered by seawater at low tide [1140]</p> <p>Atlantic salt meadows (Glauco-Puccinellietalia maritima) [1330]</p> <p>Mediterranean salt meadows (Juncetalia maritimi) [1410]</p> <p>Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation [3260]</p> <p>Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]</p> <p>Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]</p>	<p>This site is connected to the proposed development site via the sea.</p> <p>Grey Seals are the only OI with the potential to occur in proximity to the Zol for the proposed works.</p>	<p>No,</p> <p>Harbour seals are sensitive to noise and vibration, the zone of influence for these impacts is 500 metres. The potential for impact only extends to 200m below the HWM. Seals do not frequent this area and are therefore outside if the</p>

		<p>Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]</p> <p>Petromyzon marinus (Sea Lamprey) [1095]</p> <p>Lampetra planeri (Brook Lamprey) [1096]</p> <p>Lampetra fluviatilis (River Lamprey) [1099]</p> <p>Alosa fallax fallax (Twaite Shad) [1103]</p> <p>Salmo salar (Salmon) [1106]</p> <p>Lutra lutra (Otter) [1355]</p> <p>Phoca vitulina (Harbour Seal) [1365]</p>		<p>Zol. The potential for significant adverse effects is therefore not likely. This site does not require any additional consideration.</p>
Blasket Islands SAC (002172)	147km	<p>Reefs [1170]</p> <p>Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</p> <p>European dry heaths [4030]</p> <p>Submerged or partially submerged sea caves [8330]</p> <p>Phocoena phocoena (Harbour Porpoise) [1351]</p> <p>Halichoerus grypus (Grey Seal) [1364]</p>	<p>This site is connected via the sea.</p>	<p>No,</p> <p>Given the significant distance of this site from the proposed there is no meaningful pathway to the works area and as such no potential for likely significant effects has been identified.</p>
West Connacht Coast SAC (002998)	212km	<p>Tursiops truncatus (Common Bottlenose Dolphin) [1349]</p>	<p>This site is connected via the sea.</p>	<p>No,</p> <p>Given the significant distance of this site from the proposed there is no</p>

				meaningful pathway to the works area and as such no potential for likely significant effects has been identified.
Cork Harbour SPA (004030)	1.9km	<p>Little Grebe (<i>Tachybaptus ruficollis</i>) [A004]</p> <p>Great Crested Grebe (<i>Podiceps cristatus</i>) [A005]</p> <p>Cormorant (<i>Phalacrocorax carbo</i>) [A017]</p> <p>Grey Heron (<i>Ardea cinerea</i>) [A028]</p> <p>Shelduck (<i>Tadorna tadorna</i>) [A048]</p> <p>Wigeon (<i>Anas penelope</i>) [A050]</p> <p>Teal (<i>Anas crecca</i>) [A052]</p> <p>Pintail (<i>Anas acuta</i>) [A054]</p> <p>Shoveler (<i>Anas clypeata</i>) [A056]</p> <p>Red-breasted Merganser (<i>Mergus serrator</i>) [A069]</p> <p>Oystercatcher (<i>Haematopus ostralegus</i>) [A130]</p> <p>Golden Plover (<i>Pluvialis apricaria</i>) [A140]</p> <p>Grey Plover (<i>Pluvialis squatarola</i>) [A141]</p> <p>Lapwing (<i>Vanellus vanellus</i>) [A142]</p> <p>Dunlin (<i>Calidris alpina</i>) [A149]</p> <p>Black-tailed Godwit (<i>Limosa limosa</i>) [A156]</p> <p>Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]</p>	Downstream hydrological connectivity has been identified via a number of watercourse. Karst systems within this site have the potential to act as conduits for surface water pollutants.	Yes, Given the hydrological connection there is potential for degradation of habitats to arise.

		<p>Curlew (<i>Numenius arquata</i>) [A160]</p> <p>Redshank (<i>Tringa totanus</i>) [A162]</p> <p>Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]</p> <p>Common Gull (<i>Larus canus</i>) [A182]</p> <p>Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]</p> <p>Common Tern (<i>Sterna hirundo</i>) [A193]</p> <p>Wetland and Waterbirds [A999]</p>		
<p>Ballymacoda Bay SPA (004023)</p>	1.4km	<p>Wigeon (<i>Anas penelope</i>) [A050]</p> <p>Teal (<i>Anas crecca</i>) [A052]</p> <p>Ringed Plover (<i>Charadrius hiaticula</i>) [A137]</p> <p>Golden Plover (<i>Pluvialis apricaria</i>) [A140]</p> <p>Grey Plover (<i>Pluvialis squatarola</i>) [A141]</p> <p>Lapwing (<i>Vanellus vanellus</i>) [A142]</p> <p>Sanderling (<i>Calidris alba</i>) [A144]</p> <p>Dunlin (<i>Calidris alpina</i>) [A149]</p> <p>Black-tailed Godwit (<i>Limosa limosa</i>) [A156]</p> <p>Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]</p> <p>Curlew (<i>Numenius arquata</i>) [A160]</p> <p>Redshank (<i>Tringa totanus</i>) [A162]</p> <p>Turnstone (<i>Arenaria interpres</i>) [A169]</p>	<p>Downstream hydrological connectivity from the proposed works to this site has been identified via a number of water courses.</p>	<p>Yes</p> <p>Surface water pollutants have the potential to enter this European site which has the potential to degrade habitat for the SCIs associated with the SPA. QIs may occur outside of this site and there is a potential for disturbance arising from noise and vibration.</p>

		<p>Black-headed Gull (Chroicocephalus ridibundus) [A179]</p> <p>Common Gull (Larus canus) [A182]</p> <p>Lesser Black-backed Gull (Larus fuscus) [A183]</p> <p>Wetland and Waterbirds [A999]</p>		
Blackwater Estuary SPA (004028)	2.4km	<p>Wigeon (Anas penelope) [A050]</p> <p>Golden Plover (Pluvialis apricaria) [A140]</p> <p>Lapwing (Vanellus vanellus) [A142]</p> <p>Dunlin (Calidris alpina) [A149]</p> <p>Black-tailed Godwit (Limosa limosa) [A156]</p> <p>Bar-tailed Godwit (Limosa lapponica) [A157]</p> <p>Curlew (Numenius arquata) [A160]</p> <p>Redshank (Tringa totanus) [A162]</p> <p>Wetland and Waterbirds [A999]</p>	<p>There is no meaningful pathway from the proposed development site to this designated site. However, QIs may occur outside of this site which and as such create a viable pathway receptor link.</p>	<p>Yes,</p> <p>QIs have the potential to occur outside of the boundaries of this SPA and there is a potential for disturbance from noise and vibration.</p>
Mullaghanish to Musheramore Mountains SPA	45km	<p>Hen Harrier (Circus cyaneus) [A082]</p>	<p>There is a significant distance between the closest hen harrier breeding site and the works area. However, hen harrier migrate outside out of these breeding sites and roost</p>	<p>Yes,</p> <p>Winter roosting hen harrier present at Ballyvergan Marsh have the potential to be directly affected by noise and vibration.</p>

			in Ballyvergan Marsh. The presence of hen harrier at Ballyvergan Marsh creates a viable pathway – receptor link.	
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Screening Determination

8.7. The Screening Report submitted screens out all Natura 2000 sites on the grounds that they are removed from the development and will not be affected by disturbance with the exception of the following:

- Great Island Channel SAC
- Ballymacoda (Clonpriest and Pillmore) SAC
- Blackwater River (Cork/Waterford) SAC
- Cork Harbour SPA
- Ballymacoda Bay SPA
- Blackwater Estuary SPA
- Mullaghanish to Musheramore Mountains SPA.

8.8. I have considered additional European sites as listed above, as well as those considered within the applicants NIS, and consider that the applicant's approach is reasonable. Based on my examination of the NIS report and supporting information submitted, the scale of the development, its likely effects by way of the potential to contaminate or create disturbance to qualifying interests of the Great Island Channel SAC, Ballymacoda (Clonpriest and Pillmore) SAC, Blackwater River (Cork/Waterford) SAC, Cork Harbour SPA, Ballymacoda Bay SPA, Blackwater Estuary SPA, Mullaghanish to Musheramore Mountains SPA by way of water pollution and sedimentation from the laying of the cable and noise disturbance and vibration during construction, I would conclude that a Stage 2 Appropriate Assessment is required for

these Natura 2000 sites. It is important to note that mitigation measures have not been considered in the Appropriate Assessment Screening.

Stage II Appropriate Assessment

8.9. The following Appropriate Assessment of the implications of the proposed works alone and in combination with other relevant plans and projects will be carried out in relation to the following European sites in view of their conservation objectives:

- Great Island Channel SAC
- Ballymacoda (Clonpriest and Pillmore) SAC
- Ballymacoda Bay SPA
- Blackwater River (Cork/Waterford) SAC
- Cork Harbour SPA
- Blackwater Estuary SPA
- Mullaghanish to Musheramore Mountains SPA.

8.10. The NIS submitted on behalf of EirGrid concluded that the proposal will not, beyond reasonable scientific doubt, adversely affect the integrity of any Natura 2000 designated sites either directly or indirectly.

8.11. The following is a summary of the objective scientific assessment of the implications of the project on the qualifying interest features of the European sites using the best scientific knowledge in the field. All aspects of the project which could result in adverse effects are assessed and mitigation measures designed to avoid or reduce any adverse effects are considered and assessed.

Potential for direct and indirect effects

8.12. As outlined within table 1.0 the potential for adverse effects relates to noise disturbance and vibration, changes to water quality arising from pollution and sedimentation of watercourses arising at various locations and associated with various operations during the construction of the development as follows and the deterioration of habitats and/or sedimentation arising from the spread of invasive plant species. It is important to note at this juncture that no works will take place within the boundary of any Natura 2000 site and as such the potential for direct effects does not arise.

8.13. Locations at which effects may arise:

- Landfall site - where excavations in areas of high-water tables will require pumping out giving rise to the potential for sediment laden water and/or waterborne chemical pollutants to be released. Noise and vibration impacts associated with piling and excavation activities also have the potential to arise within the vicinity of this element of the development site.
- Ballyadam Converter station- whereby there is an assumption of underground connectivity to European sites, there is a potential for release of cement and other pollutants to European sites during the drilling and piling of foundations.
- Various watercourse crossings – minor watercourse will be crossed instream within a dry works area using open cut technique, there is potential for generation of sediment laden water and/or waterborne chemical pollutants associated with construction and for the potential to spread invasive plant species via watercourses to connected Natura 2000 sites.
- Knockraha – works within the fence line has the potential for accidental release of concrete into nearby surface water features which have connectivity to Natura 2000 sites.

8.14. With regard to the Zone of Influence relating to such impacts it is of note that pollution and sedimentation can have both an indirect effect by way of degradation of habitats from the changes in water quality or spread of invasive species and can also indirectly affect SCIs of Natura 2000 site by adversely affecting habitats on which SCIs rely.

8.15. With regard to noise and vibration a defined Zol is applied. I note from the NIS submitted that a conservative and precautionary approach has been adopted in defining the Zol which has been set at 400 metres.

8.16. I note that potential for impacts to arise from dust, dewatering and human activity are also considered within the NIS. Such impacts are not considered likely to give rise to significant adverse effects and occur largely outside of the relevant Zol.

8.17. Impacts arising from the potential to spread invasive plant species are also examined and are considered in relation to each European site as follows.

8.18. **Great Island Channel SAC**

8.19. The Great Island Channel stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour which

contains several other sites of conservation interest. Great Island Channel forms the eastern stretch of the river basin and, compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers. The site is extremely important for wintering waterfowl and is considered to contain three of the top five areas within Cork Harbour, namely North Channel, Harper's Island and Belvelly-Marino Point.

- 8.20. The site is an integral part of Cork Harbour which is a wetland of international importance for the birds it supports. Overall, Cork Harbour regularly holds over 20,000 waterfowl and contains internationally important numbers of Black-tailed Godwit (1,181) and Redshank (1,896), along with nationally important numbers of nineteen other species.
- 8.21. While the main land use within the site is aquaculture (oyster farming), the greatest threats to its conservation significance come from road works, infilling, sewage outflows and possible marina developments.
- 8.22. The potential for adverse effects to arise in relation to this site relates to works at the Ballyadam Converter Station whereby there is a potential for underground conduits to carry accidental releases of concrete and sediment laden water into the SAC and works across the Owenacurra River where there are known stands of invasive plant species.
- 8.23. Mudflats and Sandflats are sensitive to changes in water quality and as such changes to water quality caused by pollution have the potential to result in damage to these communities. There is the potential therefore in the absence of mitigation for adverse impacts to arise in relation to these QIs.
- 8.24. Atlantic salt meadows are sensitive to changes in water quality and the resultant change in vegetation as a result of enrichment and not changes in PH and as such significant adverse effects to this QI are not considered likely in the context of cement spills and pollutants, however this QI has the potential to be impacted by the spread of invasive plants species as follows.
- 8.25. Japanese Knotweed and Himalayan Balsam have been recorded along the banks of the Owneacurra River, in the absence of mitigation in relation to proposed river crossing works at this river, there is a potential for works to give rise to the spread of these species which can result in increased sedimentation levels colonising of habitats

which have the potential to adversely affect the qualifying interests of the Great Island Channel SAC.

8.26. Ballymacoda (Clonpriest and Pillmore) SAC

8.27. This coastal site stretches north-east from Ballymacoda to within about 6 km of Youghal, Co. Cork. The site comprises the estuary of the Womanagh River, a substantial river which drains a large agricultural catchment. Part of the tidal section of the river is included in the site and on the seaward side the boundary extends to the low tide mark intertidal mudflats and sandflats, which form part of the overall estuarine habitat, are well represented. The sediment types vary from muds to muddy sands in the inner part, to fine rippled sands in the outer exposed part. The macro-invertebrate fauna of the intertidal flats is well-developed. Ballymacoda is also one of the most important bird sites in the country and supports a higher number of waders than any other Co. Cork estuary of its size.

8.28. Downstream hydrological connectivity has been identified to this site and as such there is a potential for accidental release of concrete and sediment laden water into this SAC via connected watercourses.

8.29. Estuaries, Mudflats and Sandflats are sensitive to changes in water quality and as such changes to water quality caused by pollution have the potential to result in damage to these communities. There is the potential therefore in the absence of mitigation for adverse impacts to arise in relation to these QIs.

8.30. Atlantic salt meadows and Salicornia mud are sensitive to changes in water quality and the resultant change in vegetation as a result of enrichment and not changes in PH and as such significant adverse effects in relation to changes in water quality to this QI are not considered likely in the context of the proposed development, however this QI has the potential to be impacted by the spread of invasive plants species as follows..

8.31. With regard to the spread of invasive plant species, Japanese Knotweed and Himalayan Balsam have been recorded within the works area upstream at the Dissour River crossing. In the absence of mitigation in relation to the proposed river crossing, there is a potential for works to give rise to the spread of these species which can result in increased sedimentation levels and colonising of habitats which have the potential to adversely affect this SAC.

8.32. **Ballymacoda Bay SPA**

8.33. This coastal site stretches north-east from Ballymacoda to within several kilometres of Youghal, Co. Cork. It comprises the estuary of the Womanagh River, a substantial river which drains a large agricultural catchment. The main interest of the area lies in its waterfowl, with flocks of up to 20,000 regularly present during winter. A total of 107 wetland species have been recorded from this site. Of particular note is that the site supports an internationally important population of Black-tailed Godwit (899, average peak 1995/96–1999/00). In addition, it supports nationally important populations of a further 15 species. A range of other species have populations of regional or local importance, including Brent Goose (100), Shoveler (29) and Oystercatcher (682). The site is also notable for supporting large concentrations of gulls in autumn and winter.

8.34. Much of the land adjacent to the estuary has been reclaimed and is subject to intensive agriculture, with cattle grazing and silage being the most common land uses. However, many of these fields remain marshy and are important feeding and roosting areas for wildfowl, Golden Plover and Lapwing. The most serious threat to the site, according to the NPWS Site Synopsis, is water pollution, primarily from slurry spreading.

8.35. The following SCIs have been recorded within the ZOI of the proposed development:

- Black-headed gull
- Common gull
- Curlew
- Dunlin
- Lapwing
- Lesser black headed gull
- Ringed Plover
- Sanderling
- Teal
- Wigeon

8.36. Deterioration of water quality as outlined with above within the Ballymacoda (Clonpriest and Pillmore) SAC has the potential to affect key foraging habitats used by

a large number of birds associated with the Ballymacoda Bay SPA. There is potential therefore for indirect impacts to the SCIs as a result of water quality changes arising from accidental spills of cement and other pollutants during the construction phase of the development, as well as the spread of invasive plant species.

8.37. In the absence of mitigation, there is also a potential for ex-situ impacts arising from noise disturbance displacing wintering birds from foraging areas near to the landfall site and Ballyvergan Marsh. Construction activities which give rise to noise levels above 70dB are known to cause such displacement. It is stated within Section 3.3.2.5 of the NIS submitted that noise modelling indicates that the majority of noise impacts associated with piling at Claycastle will be within the carpark and the caravan park adjacent to the landfall site. Noise levels will be above 50dB with 400 metres of these works and therefore have the potential to disturb bird species in the vicinity. There is also a potential for noise impulses associated with the breaking out of hard standing along the existing roadway which runs along the edge of Ballyvergan Marsh where SCIs are known to be present.

8.38. Bird species in the area of Claycastle and Ballyvergan Marsh also have the potential to be disturbed by the presence of construction workers in these areas, such impacts are not considered to be significant, however mitigation measures are nonetheless proposed to prevent such impacts and are discussed below.

8.39. With regard to the spread of invasive plant species, Japanese Knotweed and Himalayan Balsam have been recorded upstream of the Ballymacoda Bay SPA and in the absence of mitigation in relation to the proposed river crossing, there is a potential for works to give rise to the spread of these species which can result in increased sedimentation levels which have the potential to adversely affect the habitats within this SPA.

8.40. **Blackwater River (Cork/Waterford) SAC**

8.41. The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. The site consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond, the tidal stretches as far as Youghal Harbour. The estuary and the habitats within and associated with the SAC form a large component of the site. Very extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are

present. The main expanses occur at the southern end of the site, with the best examples at Kinsalebeg in Co. Waterford, and between Youghal and the main bridge north of it across the river in Co. Cork.

- 8.42. The site is also important for the presence of several E.U. Habitats Directive Annex II animal species, including Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*L. fluviatilis*), Twaite Shad (*Alosa fallax fallax*), Freshwater Pearl Mussel (*Margaritifera margaritifera*), Otter (*Lutra lutra*) and Salmon (*Salmo salar*).
- 8.43. The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. The bat species Natterer's Bat, Daubenton's Bat, Whiskered Bat, Brown Long-eared Bat and Pipistrelle, can be seen feeding along the river, roosting under the old bridges and in old buildings.
- 8.44. Several bird species listed on Annex I of the E.U. Birds Directive are found on the site. Some use it as a staging area, others are vagrants, while others use it more regularly. Internationally important numbers of Whooper Swan (average peak 174, 1994/95-95/96) and nationally important numbers Bewick's Swan (average peak 5, 1996/97-2000/01) use the Blackwater Callows. Golden Plover occur in regionally important numbers on the Blackwater estuary. The site holds important numbers of wintering waterfowl. Both the Blackwater Callows and the Blackwater Estuary Special Protection Areas (SPAs) hold internationally important numbers of Black-tailed Godwit (average peak 847, 1994/95-95/96 on the callows, average peak 845, 1974/75-93/94 in the estuary). The greatest Version date: 9.2.2016 8 of 9 002170_Rev16.Docx numbers (75%) of the wintering waterfowl of the estuary are located in the Kinsalebeg area on the east of the estuary in Co. Waterford. The remainder are concentrated along the Tourig estuary on the Co. Cork side.
- 8.45. The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, over-grazing within the woodland areas, and invasion by non-native species, for example Rhododendron and Cherry Laurel.
- 8.46. As outlined above no works will occur within the boundary of this site. With regard to otter, it is of note that no otter signs, holts or crouches were recorded within 150 metres

of the works area. However, there is a potential for holts or crouches to become established prior to works commencing and there is also a potential for otters to commute and forage in close proximity to the works area. There is potential therefore for disturbance of otter associated with this SAC to occur in relation to noise and vibration.

8.47. As mentioned within table 1.0 given the location of the works relative to this SAC there is no potential for impacts to habitats within the boundary of this SAC to arise as a result of pollution or sedimentation. However, Twite, sea and potentially river lamprey associated with this SAC may occur within the coastal waters near to the landfall location. These species are highly sensitive to changes in pH that may occur in the event of accidental spills of cement into waters.

8.48. A number of invasive plant species are known to occur within the footprint of the proposed development, however given the nature of the connectivity there is no potential for spread of such invasive species into the boundary of this SAC.

8.49. **Cork Harbour SPA**

8.50. Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poul nabibe inlets.

8.51. Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, it supports nationally important wintering populations of 22 species, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Little Egret, Golden Plover, Bar-tailed Godwit, Ruff, Mediterranean Gull and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it. Cork Harbour is also a Ramsar Convention site and part of Cork Harbour SPA is a Wildfowl Sanctuary.

8.52. The proposed works occur entirely outside of the boundaries of this SPA and as mentioned above, the potential for direct impacts to the SPA do not arise. However,

the following SCIs associated with this SPA have been recorded within the ZOI of the proposed development.

- Black headed gull
- Common gull
- Cormorant
- Curlew
- Dunlin
- Grey heron
- Lapwing (Lough Aderry and Ballybutler pNHA – desktop data)
- Lesser black-backed gull
- Oystercatcher
- Red breasted merganser
- Teal
- Wigeon (Lough Aderry and Ballybutler pNHA – desktop data)

- 8.53. The potential for adverse effects to arise in relation to this site relates to works at the Ballyadam Converter Station whereby there is a potential for underground conduits to carry accidental releases of concrete and sediment laden water into the SPA.
- 8.54. Mudflats and Sandflats provide foraging habitat for the SCIs listed above and are sensitive to changes in water quality. As such changes to water quality caused by cement spills and/or other pollution associated with construction practices and machinery have the potential to result in damage to these communities. There is the potential therefore in the absence of mitigation for adverse impacts to arise in relation to these QIs.
- 8.55. Bird species associated with this SPA that frequent Claycastle and Ballyvergan Marsh have the potential to be disturbed by the presence of construction workers in these areas, such impacts are not considered to be significant, however mitigation measures are nonetheless mitigation measures are proposed to prevent such impacts and are discussed below.

8.56. In the absence of mitigation, there is also a potential for noise disturbance to displace wintering birds from foraging areas near to the landfall site and Ballyvergan Marsh. Construction activities which give rise to noise levels above 70dB are known to cause such displacement. Noise modelling indicates that the majority of noise impacts associated with piling will be within the carpark and the caravan park adjacent to the landfall site. Noise levels will be above 50dB with 400 metres of these works and therefore have the potential to disturb bird species in the vicinity. There is also a potential for noise impulses associated with the breaking out of hard standing along the existing roadway which runs along the edge of Ballyvergan Marsh where SCIs are known to be present.

8.57. Blackwater Estuary SPA

8.58. The Blackwater Estuary SPA is a moderately-sized, sheltered south-facing estuary, which extends from Youghal New Bridge to the Ferry Point peninsula, close to where the river enters the sea. It comprises a section of the main channel of the River Blackwater to Ballynaclash Quay.

8.59. The Blackwater Estuary is of high ornithological importance for wintering waterfowl, providing good quality feeding areas for an excellent diversity of waterfowl species. At high tide, the birds roost along the shoreline and salt marsh fringe, especially in the Kinsalebeg area.

8.60. The Blackwater Estuary SPA is an internationally important wetland site on account of the population of Black-tailed Godwit it supports. It is also of high importance in a national context, with seven species having populations which exceed the thresholds for national importance. The occurrence of Little Egret, Golden Plover and Bar-tailed Godwit is of particular note as these species are listed on Annex I of the E.U. Birds Directive. The Blackwater Estuary is also a Ramsar Convention site

8.61. As outlined within table 1.0 above there is no meaningful direct pathway between the proposed works and this designated site, however, qualifying interests associated with the site may occur on lands outside of the designated site boundary and as such there is a potential for such species to be impacted by noise and vibration if present within the vicinity of the proposed works. The following SCIs of this site have been recorded within the Zol:

- Curlew

- Dunlin
- Lapwing (lough Aderry and Ballybutler pNHA – desktop data)
- Teal
- Wigeon (lough Aderry and Ballybutler pNHA – desktop data)

8.62. As mentioned within table 1.0 given the location of the works relative to this SAC there is no potential for impacts to habitats within the boundary of this SAC to arise as a result of pollution or sedimentation.

8.63. Bird species associated with this SPA that frequent Claycastle and Ballyvergan Marsh have the potential to be disturbed by the presence of construction workers in these areas, such impacts are not considered to be significant, however mitigation measures are nonetheless proposed to prevent such impacts and are discussed below.

8.64. In the absence of mitigation, there is also a potential for noise disturbance to displace wintering birds from foraging areas near to the landfall site and Ballyvergan Marsh. Construction activities which give rise to noise levels above 70dB are known to cause such displacement and particularly affect Waterfowl. Noise modelling indicates that the majority of noise impacts associated with piling will be within the carpark and the caravan park adjacent to the landfall site. Noise levels will be above 50dB with 400 metres of these works and therefore have the potential to disturb bird species in the vicinity. There is also a potential for noise impulses associated with the breaking out of hard standing along the existing roadway which runs along the edge of Ballyvergan Marsh where SCIs are known to be present.

8.65. A number of invasive plant species are known to occur within the footprint of the proposed development. It is of note that Japanese Knotweed has not been recorded along watercourses with connectivity with this SPA.

8.66. **Mullaghanish to Musheramore Mountains SPA.**

8.67. The Mullaghanish to Musheramore Mountains SPA comprises a substantial part of the Boggeragh/Derrynasaggart Mountains in Co. Cork. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Hen Harrier. The site also supports a breeding population of Merlin. The population size is not well known but is likely to be one or two pairs. The site is of ornithological

importance because it provides excellent nesting and foraging habitat for breeding Hen Harrier.

8.68. As mentioned above within table 1.0, there is no meaningful direct pathway between the proposed works and this designated site, however, it is known that hen harrier occur within Ballyvergan Marsh and as such there is a potential for such species to be impacted by noise and vibration if present within the vicinity of the proposed works. Having regard to the precautionary principle it is stated that a buffer for disturbance to wintering hen harrier of 1000m when they arrive into roosts will be implemented.

8.69. It is of note that any known hen harrier roosts at Ballyvergan Marsh are 700 metres from the proposed works area.

8.70. Hen harrier are also sensitive to visual disturbance which has the potential to occur in relation to the presence of construction workers when they return to roost. Mitigation measures are proposed to address such impacts and are discussed below.

8.71. Potential in-combination effects

8.72. In combination effects are examined within section 2.5 of the NIS submitted. The proposed works were considered in combination with the proposed element of the interconnector below the high water mark, Middleton to Youghal Greenway, Middleton Carrigtwohill WWTP upgrades, Urban expansion project, Cork County Development Plan.

8.73. It is of note that the French elements of the proposed development have been subject to a full Appropriate Assessment in which in-combination effects are also considered. This report which is titled Évaluation Des Incidences Natura 2000, did not identify potential for likely significant effects on any European Sites within the Irish jurisdiction and concluded that there would be no adverse effects on the integrity of any European sites, from the project alone and in combination with other plans and projects.

8.74. Based on scientific analyses of best available scientific information, no other European sites in the UK or other jurisdictions are relevant to the screening assessment and NIS.

8.75. The NIS submitted for the proposed project similarly concludes, having considered the aforementioned plans and projects and the proposed works below the HWM that subject to mitigation measures relating to the protection of water quality and noise and

vibration that no significant in-combination effects are identified with the proposed development.

8.76. It is important to note that in the absence of mitigation, there is potential for likely significant effects to arise from both the project alone and in-combination with the offshore development with regard to ex-situ effects arising from noise disturbance to bird species.

8.77. **Mitigation Measures**

8.78. Mitigation measures have been set out within Section 3.5 of the NIS submitted. Given the dynamic distribution of species and habitats over time significant changes can arise between the baseline surveys and the commencement of construction. It is therefore proposed to carry out pre-construction surveys in relation to otters and invasive plant species. These surveys will be carried out by the contractors ECoW. It is also stated within the documentation submitted that confirmatory visual inspections will be carried out in relation to bird species, bats and mammals prior to the commencement of works. The ECoW will review work timelines and ensure that impacts do not arise in relation to breeding or roosting birds. The ECoW will advise on ecological mitigation required in the event that species are encountered during pre-construction surveys.

8.79. Mitigation measures in relation to water quality are outlined in table 3.57 and include measures such as strict management of concrete delivery, installation and curing and prevention of wash out after delivery, regular monitoring of pH levels in watercourses surrounding dry areas where instream works are being carried out.

8.80. Strict management of fuels and oils, chemicals to be stored in sealed containers, use of drip trays for refuelling, use of bunded storage areas, maintenance of plant and the use of machine nappies. Spill kits will also be available and inspected regularly.

8.81. Mitigation in relation to surface water protection for open trench water crossings is outlined in table 3.58 and includes measures such removing riparian vegetation back towards lands and the appropriate disposal of this material. The use of sandbags and where diversion or pumping is carried out, works will ensure the accommodation of a 1% AEP flood event over a period.

- 8.82. In relation to drilling, such operations will be monitored for signs of potential fracking out. Viscometers will be utilised and any increases in pump pressure will be investigated immediately. Drilling will cease if concerns are raised in relation to potential break outs.
- 8.83. Mitigation in relation to contamination of underground conduits is outlined in table 3.59 and includes a robust monitoring plan and action plan to mitigate environmental incidents. The contractor will monitor the drilling of piles to determine the presence of karst features. Where there is a potential for encountering Karst Features casings will be used during piling and will be left insitu to prevent leaching into underground voids. Adequately qualified professionals as outlined in this table will be employed to supervise piling works and adaptive measures will be proposed based on monitoring.
- 8.84. Mitigation in relation to wintering birds is outlined in table 3.5.5 and includes the use of acoustic hoarding at locations close to works at the Ballyvergan Marsh and at the roadside adjacent to this site. Restrictions on working times at these locations will be put in place to avoid disturbance to birds at this location and constant monitoring of birds in particular the hen harrier will be carried out during works in order to ensure that disturbance is avoided. In the event that hen harrier are observed returning to the roost, works shall cease until the bird has left.
- 8.85. Mitigation in relation to wintering fowl also includes the use of acoustic hoarding at the aforementioned locations and also along the roadside at Loughs Aderry and Ballybutler and at Claycastle Beach. The proposed hoardings will help to reduce noise impacts associated with construction. The use of mufflers, exhaust silencers, and sound reducing enclosures will be incorporated to reduce overall noise levels. Sound levels within the reed swamp area will be kept below 70dB.
- 8.86. Measures to prevent against the spread of invasive plant species are outlined in table 3.61 of the NIS submitted. A pre construction survey will be carried out within the growing season and all stands of such species within the ZoI will be clearly marked out as restricted and an exclusion zone buffer of 4 metres will be provided for around Japanese Knotweed.
- 8.87. A toolbox talk regarding the identification of such species will be provided and all machinery will be steam cleaned prior to entering and leaving the site. It is mentioned

within the documentation submitted that any stands of invasive plant species within the works area will be removed and disposed of accordingly by a licenced contractor.

8.88. With regard to otter it is proposed that the confirmatory survey is carried out and no works will be carried out within 150 metres of a holt unless otherwise agreed with NPWS. No track vehicles will be used within 20 metres of active but non breeding holts and no hand digging or clearance will take place within 15 metres of a holt. Exclusion zones will be fenced off and clearly marked and all contractors made aware of the procedures in this regard.

8.89. A CEMP has been submitted as an appendix to the NIS submitted and outlines all mitigation proposed in relation to the entire project.

8.90. All mitigation measures will be examined in relation to the potential for likely significant effects on the aforementioned Natura 2000 sites within the following integrity test.

8.91. **The integrity Test**

8.92. I have considered the NIS along with the information submitted with the application and have had regard to the mitigation measures outlined. Potential for impacts to arise in relation to the leakage of oils and diesels or other such contaminants from construction vehicles has been dealt with within the mitigation measures outlined in Section 3.5 of the NIS submitted and the appended CEMP. All machinery will be checked prior to entering the works area and all fuel, lubricants and hydraulic fluids will be kept in a secure bunded area removed from watercourses.

8.93. These mitigation measures are standard in nature and are known to be effective. I am therefore satisfied that the mitigation measures outlined in relation to hydrocarbon contamination of soils and waters are acceptable and will prevent impacts from such sources to the designated sites listed above.

Estuaries, Mudflats, Sandflats, Lamprey, Twaite Shad,

8.94. I note in relation to drilling at the Ballyadam Coverter Station site that piles will be encased with steel and operations will be monitored to ensure that any changes to bedrock conditions are noted and in the event of softening's or voids the steel encasements will be left in situ to prevent contamination to groundwater and any surface water bodies with a hydrological connection to these groundwater bodies.

Such measures will therefore prevent adverse effects occurring in relation to this activity.

- 8.95. The use of prescribed silt containment measures at water crossings, controls on concrete pouring, the use of silt busters or other measures to control silt run off where dewatering of trenches is required and the implementation of prescribed pollution control measures at water crossings will prevent the release of silt laden water and contaminants into watercourses therefore avoiding any potential impacts to water quality.
- 8.96. Subject to mitigation measures outlined within with NIS submitted, the potential for adverse effects to the above qualifying interests is unlikely.

Atlantic Salt Meadow and Salicornia

- 8.97. Pre-construction surveys are proposed in relation to the presence of invasive plant species which have the potential to adversely impact Atlantic salt meadow and Salicornia. It is proposed to provide a restrictive buffer around stands of invasive plant species near to works areas along watercourses and else where within the development site, and to inform staff of the dangers of spreading such species. In the event that such species are present within the works area it is proposed to remove/treat such plants to prevent the spread of the species and therefore protect the Atlantic salt meadow and Salicornia from adverse effects. The spread of invasive plant species can also have an indirect effect on birds and otter through impact to food sources and foraging areas, mitigation will therefore prevent and such likely adverse effects from occurring.

Otter

- 8.98. It is of note that no holts or crouches were identified within the zone of influence of the proposed development. Nonetheless, pre-construction surveys will be carried out prior to the commencement of development in order to determine if otter are present in the area. No works will occur within 150 metres of a holt unless otherwise agreed with NPWS. No track vehicles will be used within 20 metres of active but non breeding holts and no hand digging or clearance will take place within 15 metres of a holt. Exclusion zones will be fenced off and clearly marked and all contractors made aware of the procedures in this regard.

8.99. Such measures will ensure that adverse effects do not arise in relation to otter. Similarly, mitigation measures in relation to water quality will ensure that otter food sources are not impacted by the proposed works and as such no indirect effects occur.

Wetland and Overwintering birds and in particular Hen Harrier

8.100. In relation to hen harrier present at Ballyvergan Marsh it is proposed to implement noise abatement measures in order to reduce noise emissions at this location. It is also proposed to carry out a pre construction survey to identify roosts and to monitor the area for hen harrier during the course of works. In the event that hen harrier are present within the zone of influence works will cease until the birds leave.

8.101. In channel works will be carried out within dry works areas and I note that measures to prevent impacts to aquatic species are proposed and will be carried out in consultation with the NPWS and IFI. Such measures ensure that food sources of the wetland and overwintering birds are not adversely affected and that indirect impacts do not arise in relation to such species.

Conclusion

8.102. I have considered the location of the qualifying interests of the Great Island Channel SAC, Ballymacoda (Clonpriest and Pillmore) SAC, Blackwater River (Cork/Waterford) SAC, Cork Harbour SPA, Ballymacoda Bay SPA, Blackwater Estuary SPA, Mullaghanish to Musheramore Mountains SPA in relation to the proposed works and the existing context of the site within various locations and the activities and noise associated with the proposed construction activities and the operation, maintenance and decommissioning of the proposed development, and I consider, on the basis of the information provided with the application, including the Natura Impact Statement, and in light of the assessment carried out, I am satisfied that the proposed development individually, or in combination with other plans or projects would not adversely affect the integrity of the European site Nos. 001058, 000077, 002170, 004030, 004028, 004162, 004023 in view of these sites Conservation Objectives.

Table 1.1

Great Island Channel SAC site code (001058)

Summary of likely significant effects

- Water Quality deterioration
- Spread of Invasive Species

Conservation Objectives: To maintain or restore the favourable conservation status of habitats					
		Summary of Appropriate Assessment			
Qualifying Interest feature at risk	Targets - habitat area and distribution and associated attributes	Potential adverse effects	Mitigation measures	Significant In-combination effects	Can adverse effects on integrity be excluded?
Mudflats and sandflats not covered by seawater at low tide [1140]	<p>Habitat - The permanent habitat area is stable or increasing, subject to natural processes</p> <p>Community distribution - Conserve the following community type in a natural condition: Mixed sediment to sandy mud with polychaetes and oligochaetes community complex</p>	<p>Increase in siltation and pollution due to construction works could have an impact on water quality.</p> <p>The spread of invasive plant species can impact Atlantic salt meadow habitat.</p>	<p>Use of silt traps and curtains, designated bunded areas for refuelling, stockpiling of excavated material in designated contained areas, steel casing for pile foundations</p> <p>Monitoring of works during construction and operation.</p> <p>Avoidance, or removal of invasive plant species</p>	None.	Yes
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	<p>Habitat – as above</p> <p>Habitat distribution - No decline or change in habitat distribution, subject to natural processes.</p>				
Overall conclusion: Integrity test Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of this European site.					

Table 1.2

Ballymacoda (Clonpriest and Pillmore) SAC (000077) <ul style="list-style-type: none"> • Water Quality deterioration • Spread of Invasive Species Conservation Objectives: To maintain or restore the favourable conservation status of habitats of community interest					
		Summary of Appropriate Assessment			
Qualifying Interest feature	Targets - habitat area and distribution and associated attributes	Potential adverse effects	Mitigation measures	Significant In-combination effects	Can adverse effects on integrity be excluded?
Estuaries [1130]	<p>Habitat area - The permanent habitat area is stable or increasing, subject to natural processes</p> <p>Community distribution- Conserve the following community types in a natural condition: Sandy mud with Hediste diversicolor and Tubificoides benedii community; Sand with polychaetes and bivalves community complex.</p>	<p>Increase in siltation and pollution due to construction works could have an impact on water quality. The spread of invasive plant species can impact atlantic salt meadow habitat.</p>	<p>Use of silt traps and curtains, designated bunded areas for refuelling, stockpiling of excavated material in designated contained areas. Cofferdams, steel casing for pile foundations.</p> <p>Monitoring of works during construction and operation</p> <p>Avoidance, or removal of invasive plant species</p>	None	Yes
Mudflats and sandflats not covered by	Habitat area – as above				

seawater at low tide [1140]	Community distribution - Conserve the following community types in a natural condition: Sandy mud with Hediste diversicolor and Tubificoides benedii community; Sand with polychaetes and bivalves community complex				
Salicornia and other annuals colonising mud and sand [1310]	Habitat area – as above Community distribution - No decline, or change in habitat distribution, subject to natural processes				
Atlantic salt meadows (Glaucopuccinellietalia maritima) [1330]	'AS ABOVE'				
Overall conclusion: Integrity test Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of this European site.					

Table 1.3

Blackwater River SAC (002170) Summary of likely significant effects (ex-situ) <ul style="list-style-type: none"> Water Quality deterioration
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Conservation Objectives: To maintain or restore the favourable conservation status of habitats and species of community interest.

Conservation Objectives: To maintain or restore the favourable conservation status of habitats and species of community interest.					
		Summary of Appropriate Assessment			
Qualifying Interest feature at risk	Targets and attributes relating to habitat and distribution.	Potential adverse effects	Mitigation measures	Significant In-combination effects	Can adverse effects on integrity be excluded?
Lampetra planeri (Brook Lamprey) [1096]	Distribution - Access to all water courses down to first order streams	Accidental spills of cement or pollutants have the potential to contaminate coastal waters in which lamprey and twaite associated with the SAC may be present and may affect food sources for Otter. Otter may also be affected by noise associated with construction works at the landfall site.	Use of silt traps and curtains, designated bunded areas for refuelling, stockpiling of excavated material in designated contained areas. Monitoring of works during construction and operation.	None.	Yes
Lampetra fluviatilis (River Lamprey) [1099]	Extent and distribution of spawning habitats - No decline in extent and distribution of spawning beds 'As above'				
Alosa fallax fallax (Twaite Shad) [1103]	Distribution: extent of anadromy % - Greater than 75% of main stem length of rivers accessible from estuary Extent and distribution of spawning habitat - No decline in extent and distribution of spawning habitats.				
Lutra lutra (Otter) [1355]	Distribution – no significant decline				

	Extent of marine habitat - No significant decline.				
Overall conclusion: Integrity test Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of this European site.					

Table 1.4

Cork Harbour SPA (004030) Summary of likely significant effects <ul style="list-style-type: none"> • Water Quality deterioration • Noise Disturbance Conservation Objectives: To maintain the favourable conservation status of bird species within Cork Harbour SPA.					
		Summary of Appropriate Assessment			
Qualifying Interest feature at risk	Targets and attributes in relation to population trend and distribution	Potential adverse effects	Mitigation measures	Significant In-combination effects	Can adverse effects on integrity be excluded?
Black-headed Gull (Chroicocephalus ridibundus) [A179] Common Gull (Larus canus) [A182] Cormorant (Phalacrocorax carbo) [A017] Curlew (Numenius arquata) [A160] Dunlin (Calidris alpina) [A149] Grey Heron (Ardea cinerea)	Population trend - Long term population trend stable or increasing Distribution - No significant decrease in the range, timing or intensity of use of areas other than that occurring from natural patterns of variation	Potential for noise and visual disturbance during construction works at various locations where these SCIs may forage or roost. Potential for water quality deterioration via underground conduits which has the potential to affect foraging grounds within Cork Harbour and	Use of noise attenuation, monitoring for birds during construction and ceasing of works when required. Use of silt traps and curtains, designated bunded areas for refuelling, stockpiling of excavated material in designated contained areas. Steel casing for pile foundations Monitoring of works during	None.	Yes

[A028] Lapwing (Vanellus vanellus) [A142] (lough Aderry and Ballybutler pNHA – desktop data) Lesser Black- backed Gull (Larus fuscus) [A183] Oystercatcher (Haematopus ostralegus) [A130] Red-breasted Merganser (Mergus serrator) [A069] Wigeon (Anas penelope) [A050] Teal (Anas crecca) [A052] (lough Aderry and Ballybutler pNHA – desktop data)		therefore affect food source for SCIs of this SPA.	construction and operation.		
Overall conclusion: Integrity test Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of this European site.					

Table 1.5

Ballymacoda Bay SPA (004023) Summary of likely significant effects <ul style="list-style-type: none"> • Visual and Noise disturbance Conservation Objectives: To maintain the favourable conservation status of bird species within Ballymacoda Bay SPA			
		Summary of Appropriate Assessment	

Qualifying Interest feature at risk	Targets and attributes in relation to population trend and distribution	Potential adverse effects	Mitigation measures	Significant In-combination effects	Can adverse effects on integrity be excluded?
Wigeon (Anas penelope) [A050] Lapwing (Vanellus vanellus) [A142] Dunlin (Calidris alpina) [A149] Curlew (Numenius arquata) [A160] Teal	Population trend - Long term population trend stable or increasing Distribution - No significant decrease in the range, timing or intensity of use of areas other than that occurring from natural patterns of variation.	Potential for noise and visual disturbance during construction works at various locations where these SCIs may forage or roost.	Use of noise attenuation, monitoring for birds during construction and ceasing of works when required.	None.	Yes
Overall conclusion: Integrity test Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of this European site.					

Table 1.6

Blackwater Estuary SPA (004028) Summary of likely significant effects <ul style="list-style-type: none"> Visual and Noise disturbance Conservation Objectives: To maintain the favourable conservation status bird species within Blackwater Estuary SPA					
		Summary of Appropriate Assessment			
Qualifying Interest feature at risk	Targets and attributes in relation to population trend and distribution	Potential adverse effects	Mitigation measures	Significant In-combination effects	Can adverse effects on integrity be excluded?
Wigeon (Anas penelope) [A050]	Population trend - Long term population trend	Potential for noise and visual disturbance during	Use of noise attenuation, monitoring for birds during	None.	Yes

Lapwing (Vanellus vanellus) [A142]	stable or increasing	construction works at various locations where these SCIs may forage or roost.	construction and ceasing of works when required.		
Dunlin (Calidris alpina) [A149]	Distribution - No significant decrease in the range, timing or intensity of use of areas other than that occurring from natural patterns of variation.				
Curlew (Numenius arquata) [A160]					
Teal					
Overall conclusion: Integrity test					
Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of this European site.					

Table 1.7

Mullaghanish to Musheramore Mountains SPA (004162) Summary of likely significant effects <ul style="list-style-type: none"> Visual and Noise disturbance Conservation Objectives: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:					
		Summary of Appropriate Assessment			
Qualifying Interest feature at risk	Conservation Objectives	Potential adverse effects	Mitigation measures	Significant In-combination effects	Can adverse effects on integrity be excluded?
Hen Harrier (Circus cyaneus) [A082]	its natural range, and area it covers within that range, are stable or increasing, and <ul style="list-style-type: none"> the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and 	Potential for noise and visual disturbance during construction works at various locations where these SCIs may forage or roost.	Use of noise attenuation, monitoring for birds during construction and ceasing of works when required.	None.	Yes

	<ul style="list-style-type: none"> • the conservation status of its typical species is favourable. <p>The favourable conservation status of a species is achieved when:</p> <ul style="list-style-type: none"> • population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and • the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and • there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis 				
<p>Overall conclusion: Integrity test</p> <p>Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of this European site.</p>					

9.0 Conclusion

- 9.1. In overall conclusion, having regard to the foregoing assessment, I consider, based on the information submitted, that the proposed development, in terms of the principle

of development, the likelihood of significant environmental effects and the likelihood of significant adverse effects with regard to European designated sites is acceptable subject to conditions set out hereunder. As is outlined above, the potential for adverse impacts has been adequately mitigated for and no significant residual impacts remain.

- 9.2. The proposed development is recognised as a Project of Common Interest at a European level whereby the interconnection of European energy supply is recognised as essential to the achievement of sustainable energy targets across the jurisdiction. The provision of a secure and reliable energy supply within Ireland is essential to the country's economic growth and the prosperity of the population and this is supported in policy at a European, national, regional and local level . The proposed development is an essential infrastructure project which will assist in Ireland's move to a low carbon economy and is in accordance with the sustainable development of the country and the area within which the development will be located.

10.0 Recommendation

- 10.1. Having regard to the foregoing I recommend that permission is granted subject to conditions hereunder.

11.0 Reasons and Considerations

In coming to its decision, the Board had regard to the following:

European legislation, including of particular relevance:

- Directive 92/43/EEC (Habitats Directive) and Directive 79/409/EEC as amended by 2009/147/EC (Birds Directives) which set the requirements for Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union.
- EU Renewable Energy Directive 2009/28/EC which aims to promote the use of renewable energy

National and regional planning and related policy, including:

- National Development Plan
- National Planning Framework

- Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure, July 2012,
- Policy Statement on Security of Electricity Supply, Department of the Environment, Climate and Communications. 2021

Regional and local level policy, including the:

- Regional Spatial Economic Strategy for the Southern Region

The local planning policy including:

- Cork County Development Plan 2014
- Draft Cork County Development Plan 2022-2028
- other relevant guidance documents
- the nature, scale and design of the proposed development as set out in the planning application and the pattern of development in the vicinity, including the proposed offshore element of the development,
- the likely consequences for the environment and the proper planning and sustainable development of the area in which it is proposed to carry out the proposed development and the likely significant effects of the proposed development on European Sites
- the submissions made to An Bord Pleanála in connection with the planning application, and
- the report and recommendation of the Inspector, including the examination, analysis and evaluation undertaken in relation to appropriate assessment and environmental impact assessment.

11.1. Proper Planning and Sustainable Development

11.2. It is considered that the proposed development would accord with European, national, regional and local planning and that it is acceptable in respect of its likely effects on the environment and its likely consequences for the proper planning and sustainable development of the area.

Appropriate Assessment:

The Board agreed with and adopted the screening assessment and conclusion carried out in the inspector's report that the Great Island Channel SAC, Ballymacoda (Clonpriest and Pillmore) SAC & Ballymacoda Bay SPA, Blackwater River (Cork/Waterford) SAC, Cork Harbour SPA, Blackwater Estuary SPA, Mullaghanish to Musheramore Mountains SPA are the European sites for which there is a likelihood of significant effects.

The Board considered the Natura Impact Statement and all other relevant submissions and carried out an appropriate assessment of the implications of the proposal for the Great Island Channel SAC, Ballymacoda (Clonpriest and Pillmore) SAC & Ballymacoda Bay SPA, Blackwater River (Cork/Waterford) SAC, Cork Harbour SPA, Blackwater Estuary SPA, Mullaghanish to Musheramore Mountains SPA, in view of the Sites Conservation Objectives. The Board considered that the information before it was adequate to allow the carrying out of an appropriate assessment.

In completing the assessment, the Board considered, in particular, the

- i. Likely direct and indirect impacts arising from the proposal both individually or in combination with other plans or projects, specifically upon the Great Island Channel SAC, Ballymacoda (Clonpriest and Pillmore) SAC, Ballymacoda Bay SPA, Blackwater River (Cork/Waterford) SAC, Cork Harbour SPA, Blackwater Estuary SPA, Mullaghanish to Musheramore Mountains SPA,
- ii. Mitigation measures which are included as part of the current proposal,
- iii. Conservation Objective for these European Sites, and
- iv. Views of prescribed bodies in this regard.

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the Inspector's report in respect of the potential effects of the proposed development on the integrity of the aforementioned European Sites, having regard to the site's conservation objectives.

In overall conclusion, the Board was satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Sites, in view of the site's conservation objectives.

Reasoned Conclusion for EIA

The Board considered that the Environmental Impact Assessment Report, supported by the documentation submitted by the applicant, provided information which is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the proposed development on the environment, taking into account current knowledge and methods of assessment. The Board is satisfied that the information contained in the Environmental Impact Assessment Report is up to date and complies with the provisions of EU Directive 2014/52/EU amending Directive 2011/92/EU. The Board considered that the main significant direct and indirect effects of the proposed development on the environment are those arising from the impacts listed below.

The main significant effects, both positive and negative, are:

- Negative impacts on **human health and population** arising from construction include noise, traffic and dust disturbance to residents of neighbouring dwellings. All of these impacts are low to moderate. Adequate mitigation measures are proposed to ensure that these impacts are not significant and include adequate mitigation for operational noise.
- Benefits/positive impacts on the **Air and Climate**, the proposed development will have a significant positive effect on human health and population due to the displacement of CO₂ from the atmosphere arising from a reduction of fossil fuel energy production.
- Negative impacts on **Water** could arise as a result of accidental spillages of chemicals, hydrocarbons or other contaminants entering watercourses, the sea or groundwater via piling activities during the construction phase of the development. These impacts will be mitigated by measures outlined within the application and can therefore be ruled out.
- Negative impacts on **biodiversity** relate to the disturbance of breeding birds as a result of noise disturbance, the removal of habitat in the form of hedgerows and treelines, the temporary removal of habitat within the Ballyvregan Marsh and the translocation of habitat within the Ballyadam Converter station and the potential translocation of species within works areas. Such impacts are not

considered significant and can adequately be mitigated for within the scheme. Other impacts relate to the removal of treelines and hedgerows, such areas will be reinstated where small areas cannot be reinstated, vegetation will be planted in the vicinity to bolster existing treelines and hedgerow. Significant impacts are therefore not expected in this regard.

- **Noise and Dust** impacts arise during the construction phase from construction activities. These impacts will be mitigated through adherence to best practice construction measures and the use of noise abatement at sensitive locations such as Ballyvergan Marsh and Claycastle. Noise disturbance from the operation of the development is not likely to arise and noise disturbance from decommissioning is similar in impact as construction. Impacts arising from noise and dust disturbance during the construction, operational and decommissioning stages can therefore be ruled out.
- Negative **traffic** impacts arise during the construction phase of the development, these impacts will be mitigated through the implementation of a traffic management plan and a construction management plan. Whilst some localised impacts arising from road closures may arise, significant impacts arising from traffic can be ruled out.

Having regard to the above, the Board is satisfied that the proposed development would not have any unacceptable direct or indirect effects on the environment. The Board is satisfied that the reasoned conclusion is up to date at the time of making the decision.

12.0 Conditions

1. The proposed development shall be carried out and completed in accordance with the plans and particulars lodged with the application, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the proposed development shall be carried out in accordance with the agreed particulars.

Reason: In the interest of clarity.

2. (a) All mitigation, environmental commitments and monitoring measures identified in the EIAR shall be implemented in full as part of the proposed development.

(b) All mitigation and environmental commitments identified in the Natura Impact Statement shall be implemented in full as part of the proposed development.

Reason: In the interest of development control, public information, and clarity.

3. In accordance with the EIAR, all works shall be monitored by an Ecological Clerk of Works. Where appropriate, monitoring shall be specialists including ornithologists (Ballyvergan), freshwater ecologists (watercrossings) and botanists (habitat removal and re-instatement works at Claycastle, Ballyvergan, Ballyadam and Roadside/Field boundaries). Monitoring schedules shall be included in Site Specific Habitats Protection and Re-instatement Method Statements.

Reason: In the interest of environmental protection

4. Noise monitoring shall be carried out at all times during the construction phase of the development.

Reason: In the interest of environmental protection and public health.

5. Water supply and drainage arrangements, including the attenuation and disposal of surface water, shall comply with the requirements of the planning authority for such works in respect of both the construction and operation phases of the proposed development. Details of attenuation within the Ballyadam Converter Station site shall be agreed in writing with the local authority prior to the commencement of development.

Reason: In the interest of environmental protection and public health.

6. All new surface water outfalls shall be constructed in a manner which protects riparian habitat and does not result in excessive erosion of such habitat.

Reason: In the interest of habitat protection.

7. Construction works will be undertaken in accordance with best practice and relevant guidance to prevent any deterioration of water quality and disturbance to bird species, as set out in the preliminary CEMP. These measures will be integrated in full into the final CEMP by the eventual contractor as a means of effective implementation of all measures. This plan shall provide details of intended construction practice for the development, including hours of working, noise management measures, surface water management proposals, the management of construction traffic and off-site disposal of construction waste.

Reason: In the interests of public safety, protection of ecology and residential amenity.

8. The developer shall monitor queuing time / delays at each works location on the N25 and record traffic flows on the local road network at locations to be agreed with the Local Authority. Such monitoring information shall be provided in a report to the Local Authority on a weekly basis.

Reason: In the interest of orderly development.

9. The detailed design of the interconnector shall consider future road improvements and shall be agreed with the Local Authority prior to the commencement of construction.

Reason: In the interest of orderly development.

10. A pre-condition survey will be carried out on all public roads and bridges that will be used in connection with the development to record the condition of the public roads in advance of construction commencing. A post-construction survey will also be carried out after the works are completed. The specification and timing of the surveys will be agreed with the local authority

Reason: In the interest of orderly development.

11. Details of Joint Bay design shall be agreed in writing with the local authority prior to the commencement of development.

Reason: In the interest of sustainable development

12. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that may exist within the site. In this regard, the developer shall – (a) notify the relevant planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development, (b) employ a suitably-qualified archaeologist who shall monitor all site investigations and other excavation works, and (c) provide arrangements, acceptable to the planning authority, for the recording and for the removal of any archaeological material which the authority considers appropriate to remove. In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

All archaeological pre-construction investigations shall be carried out in accordance with the details specified with the EIAR submitted with the application.

Reason: In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any remains that may exist within the site.

13. Site development and building works shall be carried out only between the hours of 0800 to 2000 Mondays to Fridays inclusive, between 0800 to 1400 hours on Saturdays and not at all on Sundays or public holidays. Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from the planning authority.

Reason: In order to safeguard the amenities of property in the vicinity.

14. Noise levels from the proposed extension to the substation at Knockraha and the Converter Station located within Ballyadam IDA lands shall not exceed 55 dB(A) rated sound level (corrected sound level for any tonal or impulsive component) at dwellings between 0800 hours and 2200 hours on any day and shall not exceed 45dB(A) at any other time. Procedures for the purpose of determining compliance with this limit shall be submitted to and agreed with the planning authority prior to commencement of development.

Reason: To protect the residential amenities of property in the vicinity.

15. The delivery of abnormal loads for the construction of the development shall be managed in accordance with a Traffic Management Plan, which shall be submitted to, and agreed in writing with the planning authority prior to commencement of development. This plan shall provide details of the road network to be used by construction traffic, including over-sized loads, and detailed arrangements for the protection of bridges, culverts or other structures to be traversed, as may be required. The plan should also contain details of how the developer intends to engage with and notify the local community in advance of the delivery of oversized loads.

Reason: In the interests of public safety and residential amenity

16. (a) All lighting shall be operated in such a manner as to prevent light overspill to areas outside of compounds and works areas.

(b) Prior to the commencement of development the applicant shall submit a detailed lighting plan for the written agreement of the planning authority. The plan shall include the type, duration, colour of light and direction of all external lighting to be installed within the external areas of the development site.

Reason: In the interests of clarity, and of visual and residential amenity and protection of local biodiversity.

17. Prior to the commencement of development, the applicant shall submit for the written agreement of the planning authority, details of an obstacle warning light scheme which can be visible to night vision equipment.

Reason: in the interest of aviation safety.

18. Prior to the commencement of development, the applicant shall submit an Invasive Species Management Plan to the local authority, which includes details of a pre-construction survey to be carried out. The plan shall include full details of the eradication of such invasive species from the development site prior to construction or if discovered during construction as soon as is practicably possible.

Reason: In the interest of nature conservation and mitigating ecological damage associated with the development.

19. Trees to be felled and buildings to be demolished shall be examined prior to felling and demolition to determine the presence of bat roosts. Any works shall be in accordance with the TII Guidelines for the Treatment of Bats during the construction of National Road Schemes.

Reason: In the interest of wildlife protection.

20. The developer shall ensure that all plant and machinery used during the works should be thoroughly cleaned and washed before delivery to the site to prevent the spread of hazardous invasive species and pathogens.

Reason: In the interest of the proper planning and sustainable development of the area.

21. Boreholes present within the Zone of Influence of proposed works shall be monitored and tested prior to works commencing to establish the baseline conditions of such boreholes. Such boreholes shall be monitored during construction and re-examined after construction works are completed.

Reason: In the interest of public health.

22. Monitoring of piling operations shall be carried out during construction works within the proposed converter station site. Should any voids be encountered during such works, adequate mitigation shall be implemented to prevent any impacts to sub surface karst features and groundwater.

Reason: In the interest of ground water protection and ground stability.

23. In accordance with the EIAR, the applicants shall provide detailed method statements setting out proposed methods for the translocation and re-instatement of habitats at Ballyvergan Marsh pNHA, Ballyadam and Claycastle, for the agreement of the Planning Authority prior to the commencement of works. The

statements shall include details of measures to be undertaken to protect habitats of ecological value proximal to the works areas, to re-instate habitats which will be disturbed as a result of the works and monitoring of same and to prevent disturbance of protected species.

Reason: In the interest of local biodiversity

24. Detailed proposals for roadside and field boundary removal and re-instatement must be agreed with the Local Authority prior to the commencement of development. The proposals must provide for habitat creation in the event that it is deemed not practicable to re-instate roadside /field boundaries. No field or roadside boundaries should be removed where an alternative proposal which would require the active management of invasive alien species exists.

Reason: In the interest of local biodiversity

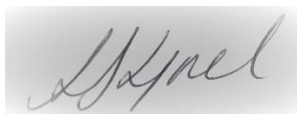
25. No ground clearance shall be undertaken and no vegetation shall be cleared during the bird breeding season, unless otherwise agreed with the local authority.

Reason: In the interest of local biodiversity

26. The developer shall pay to the planning authority a financial contribution in respect of public infrastructure and facilities benefiting development in the area of the planning authority that is provided or intended to be provided by or on behalf of the planning authority in accordance with the terms of the Development Contribution Scheme made under section 48 of the Planning and Development Act 2000, as amended. The contribution shall be paid prior to commencement of development or in such phased payments as the planning authority may facilitate and shall be subject to any applicable indexation provisions of the Scheme at the time of payment. Details of the application of the terms of the Scheme shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála to determine the proper application of the terms of the Scheme.

Reason: It is a requirement of the Planning and Development Act 2000, as amended, that a condition requiring a contribution in accordance with the

Development Contribution Scheme made under section 48 of the Act be applied to the permission.

A handwritten signature in black ink, appearing to read 'S. Lynch', is enclosed within a light gray rectangular box.

Sarah Lynch
Senior Planning Inspector

31st January 2022

Appendix I – List of Observers

1. **SSE Renewables**
2. **Declan and Margaret Kenneally**
3. **Stephen and Mary O'Brien**
4. **Catherine and Dermot O'Driscoll**
5. **Fergal Gough**
6. **Knockraha Area Community Association**
7. **Alan Fitzgerald**
8. **Ann Moore**
9. **Barry Fitzgerald Roxborough Stud Ltd**
10. **Barry Fitzgerald**
11. **Caitriona Murphy**
12. **Denis Kelleher**
13. **Feargal & Kay Abernethy**
14. **Gary & Clare Crowley**
15. **Giancarla and Michael Alen-Buckley**
16. **Kieran O'Driscoll**
17. **Churchtown North Residents Association**
18. **Mark Douglas**
19. **Mary O'Neill and Others**
20. **Maurice and Ann Ahern**
21. **Michael Coleman**
22. **Noelle Murphy - L6989 Residents Association Knockraha Co. Cork**
23. **Paul Burke**
24. **Simone O'Flynn**

- 25. **Tom Fitzgerald**
- 26. **Tom Fitzgerald Roxborough Stables**
- 27. **Cork Chamber of Commerce**