An Bord Pleanála

Inspector's Report ABP-308906-20.

Development	Greenlink Ireland Onshore – the Irish onshore elements of a transboundary electricity interconnector to connect Great Island 220 kV substation in County Wexford and National Grid's Pembroke transmission substation in Pembrokeshire (Wales). Comprising subsea and underground high-voltage electricity cables, converter and tail station and other works.
Location	In the townlands of Great Island, Kilmannock, Dunbrody, Saltmills, Grange, Kilhile, Rosetown, Coleman, Ramsgrange, Kilbride, Ballinruan, Aldridge, Booley, Broomhill, Lewistown, Kilcloggan, Templetown, Graigue Little, Graigue Great, Lambstown and Ramstown.
Type of Application	Strategic Infrastructure Development under Section 182A.

Planning Authority	Wexford County Council.
Applicant	Greenlink Interconnector Ltd.
Observers	1. John Kelly 2. Anthony Mylett 3. John and Margaret Benson
Other Submissions	Llywodraeth Cymru Welsh Government Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media Health and Safety Authority Transport Infrastructure Ireland Department of Agriculture, Food and the Marine Geological Survey Ireland Health Service Executive South Wexford County Council Kilkenny County Council
Date of Site Inspection	15th April and 13th May 2021.
Inspector	Mairead Kenny.

Contents

1.0 **Project Overview**

1.1. The development forms part of the Greenlink Interconnector. The Greenlink Interconnector is designated as a European Union Project of Common Interest (PCI), under the provisions of European Union Regulation no. 347/2013 on Guidelines for Trans-European Network for Energy ('TEN-E Regulation'). It is one of 102 electricity transmission projects on the 2019 European Union list of PCI's. This regulation requires that PCI projects are given a 'priority status' at a national level.

1.2. The Greenlink Interconnector will comprise subsea and underground high-voltage electrical cables and associated converter stations to connect to Eirgrid's Great Island 220 kV substation in County Wexford in Ireland and National Grid's Pembroke transmission substation in Pembrokeshire in Wales.

1.3. This application for consent relates to the onshore part of the development in Ireland, meaning that part of the Greenlink Interconnector which is situated above the high-water mark in Ireland. The elements of the Greenlink Interconnector which are offshore in Ireland, offshore in Wales and on land in Wales are subject of separate consents.

1.4. The submission of this application follows pre-application consultation with the Board under case reference 26.VC 0102 pursuant to section 182E of the Planning and Development Act 2000 (as amended).

1.5. The applicant notes the conclusion in the EIAR that the interconnector project will have significant positive effects on the environment that arrive not only in the Irish state but in the transboundary state concerned. For this reason, Greenlink has been advised that sections 182A(4)(a)(i)(I) and 182A(4)(c) of the Planning and Development Act 2000 as amended apply. Reference to the development being likely to have significant effects on the environment of a transboundary state has been included in the published newspaper notice and notice given of the application to the prescribed point of contact for the UK.

1.6. The Welsh Government has declined the invitation to take part in formal consultations.

2.0 Site Location and Description

2.1. The site is situated in the southwest of County Wexford. The wider site and landscape context is diverse. At the northernmost end is the site of the converter station, located east of the major energy facility Great Island Power Station, which is widely visible. These lands are located at the meeting of three counties and at the confluence of the Suir and Barrow river estuaries. The southernmost point of the Greenlink site is Baginbun Beach and Baginbun Head. This is the landing point for the subsea cable and is approximately 16 km to the south-east of Great Island. Baginbun Beach is on the east side of the Hook Peninsula, an area of considerable landscape, cultural heritage and tourist interest.

2.2. The SEE Great Island Power Station is a gas-fired station opened in 2015 and there is also an older power station which dates from the 1960s and large heavy fuel oil tanks. It is an establishment which holds an Integrated Pollution Prevention and Control (IPPC) licence and to which the Major Accident Regulations apply. The overall facility including the two tall unused concrete chimneys are significant structures that are visible over a wide area. In the vicinity of the power station are a number of 110 kV and 220 kV electricity lines with pylons. There is also an Eirgrid substation to the north of the power station, which is partly screened by vegetation and topography. A block of mature mixed forestry planting separates the power station site from the proposed converter station / tail station site. For convenience and in view of the scale of the converter station, I refer to this site as the converter station site. The converter station site is accessed by way of a track to the north of the power station. At the northern boundary of the site and south of the former railway line is the location of a recently permitted battery storage facility (WCC Reg ref 201808506) known as the Energy Storage System.

2.3. The landscape character context for the Great Island Power Station and the site of the proposed converter station includes the steeply rising river valleys of the Barrow and the Suir and, to the north, a flat polder. To the north-east at a distance of over 7 km is Sliabh Coillte which rises to 320 mOD and is developed as a viewing point. The lands to the south east and east of Great Island include rolling low lying topography comprising agricultural lands and well-established hedgerows with some copses of woodland around the estuary and harbour near Great Island. About 5km to

the north-east of Great Island is the JFK Arboretum. The wider context to the south of Great Island is defined by an agricultural character and coastal location. Settlements in the area include small villages and towns such as Campile, Duncannon, Arthurstown, Ramsgrange and Fethard. Travelling through the area on occasion there are glimpsed views towards the sea. At the coast itself Baginbun Beach is a small sandy cove with a Martello tower at the southern end of the beach and at the other side views towards the Saltee islands and the Wexford coastline to the east.

2.4. The SSE Great Island Power plant is very prominent in views from Cheekpoint directly across the river in County Waterford. There are limited views to the converter station site from locations further south in county Waterford. The road network in the area includes the regional road R733 from New Ross and the M25 bypass road notable for the large bridge which crosses the River Barrow. In County Kilkenny to the north-west of Great Island the road network is narrow but some views to the Great Island Power Station and converter site are obtained from some local roads. To the north of the site the Rosslare to Waterford railway line may be developed as an amenity Greenway for cycling and walking by the three county councils. The existing archaeological and cultural heritage features in the landscape include Dunbrody Abbey which is under 2 km east of the site and Kilmokea Church and graveyard. Apart from the Martello tower at Baginbun Beach there is also a promontory fort.

2.5. The converter station site is a 9.3 ha plot located immediately east of the Power Station and substation and to the south of the railway line. The converter station, tail station, the MV substation and some of the HVAC cabling will be developed within the site. The remainder of the HVAC cable is to be situated within the Great Island Power Station and Eirgrid Great Island substation.

2.6. The converter station site is presently used for grazing. It is accessed by way of a track to the north of the existing power station and substation facilities over which there is a way leave. The separate plot 1.15 hectares of land between the converter station and the railway line is the site of the permitted Energy Storage System. The subject lands contain steep topography particularly to the south and east where there are sections of steeper slopes. Along the southern and eastern boundaries, the land is at 3 to 5 mOD and rises to 33 mOD in the centre and western areas.

2.7. The HVDC cabling will be along a 23 km route through the townlands of Great Island, Kilmannock, Dunbrody, Saltmills, Grange, Kilhile, Rosetown, Coleman, Ramsgrange, Kilbride, Ballinruan, Aldridge, Booley, Broomhill, Lewistown, Kilcloggan, Templetown, Graigue Little, Graigue Great, Lambstown and Ramstown. This cable is in the public road except where it enters agricultural land for short distances in the townlands of Great Island, Kilmannock, Dunbrody, Ramsgrange, Templetown, Graigue Great and Ramstown. An underground section of cable will traverse the Campile river estuary. This location is of landscape significance and sensitivity due to the presence of an old stone bridge and Dunbrody Abbey in the distance.

2.8. The overall site area is stated to be 83.8 ha.

2.9. Photographs which were taken by me at the time of my inspection are attached.

3.0 **Proposed Development**

3.1. **Overview.**

The proposed development would increase the current capacity of interconnection between Ireland and Great Britain and onwards to mainland Europe by a nominal capacity of 500 MW.

In Ireland the requirements for consents extend to:

- Planning permission.
- Foreshore licence. Application submitted to Department of Housing, Planning and Local Government – Foreshore Unit on 1 August 2019. Formal consultation commenced on 13 November 2019. Determination pending.
- Authorisation to construct an interconnector. Draft application submitted to CRU PCI unit on 12 June 2020.
- Licence to operate and maintain an interconnector. This is an end-stage consent which will be granted automatically by CRU on application to recipients of an authorisation to construct an interconnector.

- If agreement cannot be reached with landowners a special order will be sought from CRU.

Llywodraeth Cymru Welsh Government advises that consenting for those parts of the project which will take place within Wales has been completed. The relevant consents are:

- Permission for major development (outline planning).
- Planning permission major development (full planning).
- Permission major development (full planning).
- Marine licence
- Marine works licence.

3.2. Proposed development - description

3.2.1. The proposed development comprises Greenlink Interconnector Onshore elements in Ireland. The definition of onshore means the land above the foreshore, i.e. the land above the high-water mark of ordinary or medium tides, indicated as HWM on ordnance survey maps.

3.2.2. The main elements of the proposed development are described below.

Landfall Compound.

3.2.3. This is a temporary compound at Baginbun. At this location the high-voltage direct current (HVDC) cable will be installed underground by horizontal directional drilling (HDD). The cable will be underneath the beach and cliff.

HVDC cables.

3.2.4. Two HVDC electrical cables with nominal capacity of 500 MW will be installed from Landfall at Baginbun to the converter station adjacent Great Island substation.

3.2.5. The 23km route between the convertor station and the landfall site will be entirely underground and will generally pass along local roads except where diversion off the road is required for engineering reasons.

3.2.6. Infrastructure along the cable route will include jointing bays and ground-level marker posts along the route.

3.2.7. The cable route and its noteworthy features may be described as follows:

- Between the converter station and the R733, Kilmannock townland. The 2.7km route passes through agricultural lands, in a north easterly direction first and then in a south easterly direction, crossing the Campile river estuary at a depth of 10 m minimum below the riverbed and at a location downstream of Dunbrody bridge. The corridor width varies significantly. Services along the route include telecoms and overhead medium voltage (MV) electrical lines.
- Between the R733 and L4050, Dunbrody, Saltmills and Grange townlands. South of the estuary crossing the cable will follow the R733. This involves passing under the disused Waterford to Rosslare railway, a proposed Greenway. For distance of 5 km the cable will be laid within the road verge. This area is dominated by farmland and there are a few farmhouses along the route which also passes by Dunbrody Abbey visitor centre. Services along this section of route include water mains, telecoms and overhead electrical lines. At the junction of the R733 and the L4050 the cable route leaves the regional road and traverses southwards along the local road.
- L4050 to R733 at Sutton's Cross, Kilhile, Rosetown and Coleman townlands. The cable follows the L4050 in a southerly direction for 2.8 km at a location where there is a higher level of ribbon development and associated services crossing the cable route in a number of locations. The final position of the cable will be dependent on the exact location of the services. At Sutton's Cross the cable route joins the regional road and follows an easterly direction towards Ramsgrange village.
- R733 to the Templar's Inn passing through Ramsgrange village and the townlands of Ramsgrange, Kilbride, Ballinruan, Aldridge and Booley and Lewistown and Kilcolgan (Templetown). From Sutton's cross the cable follows the regional road in an easterly direction through the village encountering various services along the way until it meets the junction with the L4045. The cable route then follows the local road directly southwards for 7.5 km as far as Lewistown where a temporary construction compound will be located. The

compound site will be accessed by way of a short access road off the local road and will be in a field beside forestry and a farm holding. From the construction compound access road, the route continues southwards on the L4045 to the junction with an unnamed local road at the Templars Inn.

- Templar's Inn (Templetown) to Landfall at Baginbun Beach, Graigue Little, Graigue Great, Lambstown, Ramstown townlands. The route takes a south-easterly direction for 2.1 km. In two locations it passes through farmland for 250 m and 200 m respectively. It then follows the unnamed road for 3 km travelling east and north-east before turning north and east and then south through a sharp bend towards the coast to reach the landfall site. At the landfall site the cable route crosses to the proposed landfall compound. Services along this route where there is ribbon development includes water mains, telecoms and overhead electrical cables.

3.2.8. Regarding the technical details of the cables the following are noteworthy:

- The HVDC cables will have a nominal voltage of 320 kV. The HVAC will be 220 kV rated.
- Typically, the HVDC will be two onshore cables buried underground in a single trench with cover of 850mm to 1000mm and they will be installed in plastic ducts separated by approximately 300mm with protective covering and warning cable and marker posts.
- Where cables need to be at a greater depth in order to avoid existing services or at a HDD crossing the cable spacing has to be increased in order to maintain the cable rating. Onshore cable depths for a HDD will be in the range of 5m to 10m depending on ground profile. The cable spacing will depend on the cable ratings. The maximum axial spacing between HDD's will be 10 m. For the onshore cable the expected outer diameter of the HDD will be 200 mm to 250 mm and the expected outer diameter of the HDD at the sea/land interface will be in the range of 350 mm to 450 mm.
- At the HDD locations as it is not possible to surround the duct with a special backfill the ducts will be installed at a greater spacing to improve heat dissipation and avoid drying out of the soil.

- The cable route will be confirmed by trial holes and will avoid any areas of fuel ash, made ground or peat. There is sufficient scope within the permanent way leave and red line boundary to achieve a route through suitable material.
- A single reel of HVDC cabling is about 1.8km. Jointing bays are likely however to be around every 1km. Once the joint is made the cable will be buried in the same way as the remainder of the underground cable.
- The offshore and onshore cables are to different specification and will be connected at a location adjacent Baginbun Beach.
- The landfall site comprises a large field in tillage on the eastern side of Baginbun Beach and bounded on the other sides by access roads. It is of stated area of 6.63 hectares. It is slightly undulating and has ground levels between 11mOD and 16mOD.
- The connection between the land cables and the marine cables will be made in a Transition Jointing Bay (TJB) which will be buried in the field inland from Baginbun Beach.
- Maintenance will comprise an inspection inside the link boxes, which will be at every fifth jointing bay, every two years.
- When Greenlink ceases to operate the HVDC, HVAC and fibre-optic cables will be decommissioned at the same time as decommissioning of the converter station and tail station. It is envisaged that the HVDC and HVAC cables will remain in situ, that the link boxes and fibre-optic joints will be removed, and their locations reinstated.
- The tail station which will be known as Loughtown substation or Loughtown tail station will be connected to Great Island substation by HVAC cables.

Converter Station and Tail Station.

3.2.9. The converter station site is of stated area of 9.3 ha, of low ecological interest and within an area of pasture in a single field. There will be a requirement to create a level platform at an elevation of 23 mOD for the converter station and also the tail station. Of this area approximately 1.85 ha of the proposed levelled platform will be allocated to the converter station.

3.2.10. The converter station will accommodate a 500MW nominal capacity station for the conversion between the HVAC and HVDC electrical currents. The stated gross floor area of the proposed converter station buildings is 5613 m². This includes a 123m long converter building, 21m high and 53m wide at its widest point. The converter building is to be finished with dark grey/green cladding. A 20m x 18m x 8.4m high spare parts building is proposed along the northern side of the site compound with external electrical compound comprising transformers, 26m tall lighting masts and related on the southern side of the building.

3.2.11. The converter station will include buildings, apparatus and equipment including a converter hall, converter transformers, AC switchgear and busbars, harmonic filters, lightning towers, ancillary plants such as a cooling bank and a diesel generator, and a control building. The main elements of the converter station are described in detail in the application submissions and include:

- The converter hall which will house the valve, reactor and DC switches. The valve equipment will convert electrical power from DC to AC. The proposed building will be rectangular, shallow pitch, single-storey piles structure which will provide a weatherproof enclosure over the electrical plant, instrumentation and switchgear. The lightning towers at 26m high and the converter hall at up to 21m high are the tallest components.
- The converter hall and main building will be a continuous building divided into a reactor hall, valve hall and DC hall and have a total area of 4305 m². The roof cladding will be standing seam roof cladding. Wall cladding will be an appropriate composite. The cladding design will give the appearance of an ordinary industrial building and colours will be selected to minimise visual impact.
- The control room will accommodate equipment housed in panels to provide the functionality of operation, control and protection of the converter stations electrical equipment. It will be a single-storey structure of approximately 740 m². Welfare facilities will be provided in this building. It will share a superstructure and substructure with the converter hall. There will be a belowground cable basement designed as a fully reinforced retaining wall for surcharge loading and constructed as a water retaining structure. An

appropriate roof cladding system for the 8° pitch roof and an appropriate wall cladding and colours to minimise visual impacts are proposed.

- A spare parts building (storage building) will house equipment used to replace worn or faulty equipment and will be of area of 360 m². A separate cable store of 300 m² and height of 6.1 m is planned. This will be a dual pitched piled portal frame structure. Suitable roof cladding and wall cladding are proposed and building will have an appearance of an industrial building.

3.2.12. The tail station will have a footprint of 33 m x 35 m and will have an approximate height of 11m. It will be designed to comply with Eirgrid specifications. It will comprise a 220 kV gas insulated switchgear (GIS) circuit and control panels and a small diesel generator. It will be surrounded by a perimeter fence of 2.6 m in height.

3.2.13. Two converter station configurations are illustrated in various documentation including figures 2.16 and 2.17 in the Planning Report and in the photomontages. There are alternatives outlined in the photomontages and in the drawings, but the applicant has advised that alternative two is no longer to be pursued. I have described alternative one above.

3.2.14. The converter station and tail station will have utility connections to potable water, foul drainage, surface water drainage, telecoms and IT and electricity. The notable elements are:

- Potable water supply by way of a new watermain which will connect to an existing watermain close to the site and will be laid along the site access road.
- There will be two site personnel at the converter station at all times and infrequent visits by personnel to the tail station. Foul wastewater generated is minimal and it will be collected and removed from the site periodically by a licensed provider to a local sewage treatment plant.
- Surface water drainage will be by way of a new surface water drainage system. Surface water from the proposed access road will connect to the existing great Island substation road drainage. Surface water from yards and building roofs of the converter station and tail station will pass through the proposed filter drains and surface water sewers, through bypass interceptor, to a proposed attenuation pond which will be constructed at the south-east side

of the site and provide 800m³ of storage. Discharges from the attenuation pond will be by way of an outfall to Newtown stream at the eastern side of the site and will be controlled to greenfield rates.

- New telecoms and electrical supply connections will be provided from existing utility services which are adjacent the site. At a location outside the converter station and tail station perimeter fences a new MV substation building will be constructed and will connect the electricity supply to the converter substation and tail station.

3.2.15. The significant ancillary infrastructure at the converter station/tail station includes:

- Landscaping within the converter site and Loughtown tail station will be subject to a comprehensive scheme incorporating significant earthworks, berming, zones of grassland and planting of approximately 15,000 native mixed woodland trees.
- Security fencing at the converter station will be in the form of two fences one inside the other with access by way of security gates. The fences are likely to comprise a 2.4 m high weld mesh fence with perimeter gates for access and a 3.4m high electrified fence. CCTV cameras will be along the perimeter and intruder alarms will operate.
- An external lighting system will provide adequate illumination to allow personnel to move around without risk to health and safety. Lighting will be installed against the building and lighting poles of 6m height will be installed. In normal circumstances external lighting would be switched off during hours of darkness. High-level illumination would be switched on during emergency repairs to outdoor equipment if needed. Motion sensor technology will be implemented as appropriate.
- The new access road providing access and egress from the site will connect to the existing Great Island substation road. Surface water will drain to infiltration trenches in the verge area of the access road. Filter drains connected to the surface water drainage system will collect surface water run-off from the site road and yard areas.

3.2.16. The following describes other significant elements of the development at this site:

- The converter station transformers will be within a reinforced concrete bund connected to an underground tank, sited to meet fire design and electrical clearance requirements, using precast firewalls to provide suitable separation between adjacent transformers and electrical circuits and designed as waterproof structures.
- A hydrocarbon interceptor system which will be fully capable of isolating all upstream oil flow if the installed high-level oil alarm is activated.
- The only liquid stored in bulk on site will be coolant and fuel for the standby generator. The coolant will be either distilled water or glycol and it will be stored in special standby tanks.
- The standby generator will be self-contained with two days of fuel storage.

The following information is provided in relation to operation and maintenance:

- In all the Greenlink proposal will provide permanent employment for 20 people for the overall project in Ireland of which 5 people will have particular responsibility for the operational phase. Various other inspections will be undertaken.
- The operation and maintenance of the tail station will be by Eirgrid and will be mainly done remotely.

3.2.17. Regarding the decommissioning of the converter station and tail station the following is stated:

- The design life of these assets will be 40 years. The current trend is to refurbish HVDC equipment and extend the lifetime of the interconnector.
- On decommissioning of the converter station and tail station equipment will be removed for management based on waste regulations at the time. All above ground structures within the proposed converter station and tail station footprint will be removed and the site returned to its previous state.
- The landscaping berms and planting will stay in place. The attenuation pond will be infilled with subsoil from the original site works used to form the landscaped berm.

MV substation.

3.2.18. An ESB MV substation will be developed in the same holding as the converter station and tail station. The substation will provide the MV and LV connections for the development. It will be separated by perimeter fences from the converter station and tail station.

Converter station construction compound.

3.2.19. This compound will serve for the construction of the converter station and tail station.

Cable contractor compounds.

3.2.20. Cable contractor compounds will be required at the Landfall site close to Baginbun Beach, at the proposed converter station and at a point along the onshore route in Lewistown.

HDD compounds.

3.2.21. At Baginbun Beach HDD contractor compounds and at either side of the Campile river estuary crossing where HDD there will be a requirement for large construction compounds.

High voltage alternating current (HVAC) grid connection and cables.

3.2.22. A 220 kV HVAC electrical cables circuit of length of 420 m (three cables in the one circuit) will be installed underground and will connect the converter station to the existing Great Island substation by way of the proposed Loughtown tail station. Great Island is a node on the 220kV transmission grid. The cable will cross under the Gas Networks Ireland high pressure pipeline which is in the SSE lands and which serves the Great Island substation.

Fibre-optic cables.

3.2.23. Fibre-optic cables required for operation and control will be laid underground with the HVDC and HVAC cables. The length required is 23.42 km.

Car parking near Baginbun Beach.

3.2.24. As part of a community gain package, 54 no. parking spaces will be provided at Baginbun Beach. Aspects of the proposed development have been revised and clarified in the response provided by the applicant to the comments of DAU including in relation to drainage. The applicant submission describes the proposed car park

which it is stated were welcomed by the local authority and residents. The purchase of a strip of land at the north of the approach road will be required.

Ramsgrange village works.

3.2.25. This is a further community gain element involving new streetlights, extension to existing footpaths and speed activated signage in the village of Ramsgrange. This includes provision of a footpath along the regional road eastbound between the village centre and a recently constructed housing. In addition, 4 no. new streetlights will be provided on the northern side of the road to the east of the school entrance and a speed activated sign will be provided at the western approach to Ramsgrange.

Land requirements and deviations.

3.2.26. The acquisition of lands will be by agreement. A permanent wayleave will be acquired along the route of the HVDC and HVAC cable for the purposes of access for future maintenance. A 15m permanent way leave has been agreed with landowners where the route crosses agricultural land. A working width of 30m applies.

3.2.27. Ongoing agricultural activity will be facilitated along the permanent way leave subject to avoidance of deep-rooted plants and building construction.

Construction strategy.

3.2.28. Aspects of the construction strategy are briefly described below.

- Enabling works and site clearance will include implementation of the Construction Traffic Management Plan and the surface water management strategy, construction of temporary access to the construction compounds, removal of vegetation and installation of hoarding and fencing and welfare facilities.
- A construction strategy and sequence to be employed at the converter station site is described in section 2.7.2 of the planning report. It involves the creation of a level platform as the site of the converter station and tail station.
- There are a number of steps in the installation of the cable. Installation in roads, footpaths and verges will be done in sections between 100 and 300m long which will be fenced off and worked for a week at the end of which road

surfacing will be reinstated over the completed trench section. In general, the full depth trench will be open for less than 24 hours.

- Duct installation off road will be within a 30 m construction working width centred on a permanent wayleave, which has been agreed with landowners. This will facilitate a temporary haul route for the movement of vehicles and delivery of materials.
- Duct installation by horizontal directional drilling will be used at Baginbun Beach and the cable crossing of the Campile River Estuary. Mini horizontal directional drilling is the preferred method for crossing the underground gas pipeline at Great Island and Kilmannock stream.
- Cables will be supplied to site on very large drums of 1.8 km of cable. Jointing bay locations are likely to be required at approximately 1 km centres depending on route geometry.
- A landfall transition jointing bay (TJB) will be located below ground level in the HDD contractor compound adjacent to Baginbun Beach and will provide for connection of the onshore cables to the marine cables.
- At Kilmannock stream (Newtown stream) while the preferred option is mini HDD the use of open cut trench crossing is also identified.
- At the gas pipeline HDD crossing is the preferred method to install cables at suitable depth below the pipeline. Hand digging will be used to locate the pipeline and all work supervised by GNI.
- At a number of off-road locations, the cable diverts from the public road and a greater construction area is required. At these locations there will be removal of hedgerow or field boundaries and fencing installed to secure the area. Vegetation removal outside the breeding season is recommended and reinstatement of field boundaries is to be undertaken.
- Construction compounds and working areas will include 3 no. Construction compound/lay areas, one close to the converter station, one in the middle at Lewistown and one at the Landfall site close to Baginbun Beach.
- HDD drilling compounds will be required adjacent to Baginbun Beach and at either end of the Campile River Estuary crossing.

- Regarding site management, the construction management team will be responsible for ensuring compliance with conditions attached to consent and implementation of mitigation measures in the EIAR.
- A Construction Environmental Management plan has been prepared and will be implemented in full. A Construction Traffic Management Plan including specific traffic mitigation measures has been prepared and will be implemented in advance of any works. It will include appropriate planning of traffic flows and scheduling.
- The Invasive Species Management plan which has been prepared will be implemented in advance of any works in areas where such species have been identified.
- Management of construction waste and specific mitigation measures has been included in the CEMP and will be implemented in advance of any works.
- Emergency response will be subject to the strategy which will be prepared by the applicant following liaison with emergency response services. It will cover all foreseeable risks such as fire, flood and collapse and address storage of potentially polluting materials and response to spillage.
- The anticipated workforce in the peak construction period is approximately 250 construction employees. The core construction hours will be 7 AM to 7 PM on weekdays and 8 AM to 2 PM on Saturdays.

Other elements of the overall project.

3.2.29. The subsea cable between Ireland and Wales is described in section 2.8.1 of the Planning Report. The subsea cable will follow the offshore cable route illustrated on figure 1 between the Landfall at Baginbun Beach and the Landfall site in Wales. The chosen route informed by surveys is stated to offer the optimum route while maintaining a short distance. It is 160 km long of which 86km is in Irish waters.

3.2.30. The cable configuration will be in the order of 10 to 20 m wide but to allow for flexibility a 500m wide corridor is included in the consent applications for the offshore cable. The marine cables will be tied together in a bundle with a fibre optical cable and laid in a single trench. The fibre optical cable will be for control and communications purposes.

3.2.31. A burial depth of 1m in loose sediment (sand or gravel) and 6m in areas of glacial till is the target. Subsea surveys indicate that burial will be achievable for 89% of the route. 16 km of the subsea cable route in Welsh waters will require external cable protection due to seabed conditions. External cable protection will be required where Greenlink crosses the existing subsea telecommunications cable in both waters.

3.2.32. There is a full description of the overall project in the application submissions and the EIAR and NIS for the Ireland Offshore Marine section has been received.

3.3. Documentation and Procedures

3.3.1. The application which was received on 15 December 2020 was accompanied by:

- Planning Report, including Consultation Report Ireland.
- EIAR – Ireland / Onshore.

  EIAR Volume 1 – Part A – Non-Technical Summary.

  EIAR Volume 1 – Part B – Main Chapters

  EIAR Volume 2 – Appendices including Appendix 1.6 Joint Environmental Report – Greenlink Summary of Offshore and Onshore Environmental Effects
- Natura Impact Statement / Ireland Onshore
- Electromagnetic Field Environmental Report
- Greenlink Marine EIAR – Ireland

  EIAR Volume 1 – Part A – Non-Technical Summary.

  EIAR Volume 1 – Part B – Main Chapters

  EIAR Volume 3A – Appendices A-G

  EIAR Volume 3B – Appendices H-L
- Greenlink Marine Natura Impact Statement
- Greenlink Consent Applications Overview
- Drawings.

3.3.2. The following documentation is also relevant:

- A copy of newspaper notices published on 8 December 2020, site notices which were erected at 8 no. locations, cover letter, application form and fees.
- Letters of consent of landowners. The sites for the converter station and tail station are to be permanently acquired and it is stated that the landowners have given their consent to the making of the application. Wayleave agreements have been made with relevant landowners. The applicant indicates sufficient legal interest for the application to be made.
- Schedule of prescribed bodies and copies of letters.
- Details of application were uploaded to the website on 16 December 2020. Portal ID number 2020210. Acknowledgement receipt is enclosed.
- An Bord Pleanála permits and consent confirmation letter dated 1 September 2020.

3.3.3. The legislative context includes:

- This is an application for approval under section 182A of the Planning and Development Act, as amended. It is an application which would be likely to have significant effects on the environment in a transboundary state, Wales.
- In accordance with Article 124 of the Planning and Development Regulations, 2006, as amended the Board notified the Minister for the Environment, Climate and Communications in Ireland.
- In accordance with article 126 of the Planning and Development Regulations, 2006 the Board notified the Ministry of Housing, Communities and Local Government in the United Kingdom of receipt of the application, provided a description of the development, noted that an EIAR has been submitted with the application and that the Board as the competent authority would not take a decision until the views, if any of the transboundary state has been received or the consultations are otherwise complete.
- The Welsh Government was requested to indicate to the Board if it wished to take part in the decision-making procedures in relation to the proposed development. The Welsh Government has responded and does not wish to be involved in formal consultation.

- Wexford County Council was also notified of the transboundary status.

3.3.4. The following prescribed bodies were invited to make submissions:

- Minister for Housing, Local Government and Heritage
- Minister for Tourism, Culture, Arts, Gaeltacht, Sport and Media (DAU)
- Minister for Environment, Climate and Communications
- Minister for Agriculture, Food and the Marine
- Transport Infrastructure Ireland
- Environmental Protection Agency
- Irish Water
- Commission for Regulation of Utilities
- Failte Ireland
- An Taisce
- The Heritage Council
- An Chomhairle Ealaion
- Health Services Executive (Seveso Sites)
- Inland Fisheries Ireland
- Waterways Ireland
- Southern Regional Assembly
- Córas Iompair Eireann
- Commission for Railway Regulation
- Health and Safety Authority

4.0 Submissions

4.1. Transboundary Consultation

4.1.1. Llywodraeth Cymru Welsh Government by letter of 25 February 2021 confirmed that it has devolved responsibility for environmental and planning matters in Wales and that it does not want to actively participate in the decision-making procedures save for consideration of matters set out in the letter.

4.1.2. The likely significant impact of detonating unexploded ordnance is identified as the only transboundary concern which Llywodraeth Cymru Welsh Government would like to be taken into account. It is requested that the imposition of suitable mitigation be included within any consent granted.

4.1.3. Llywodraeth Cymru Welsh Government advises that consenting for those parts of the project which will take place within Wales has been completed.

4.2. Planning Authority

4.2.1. Wexford County Council in a submission dated 12 February 2021 stated that the Planning Section considers that the development subject to mitigation measures and additional screening of temporary and permanent structures complies with the development plan and the proper planning and sustainable development of the area.

4.2.2. The Draft Wexford County Development Plan 2021 – 2027 has been published and consultation carried out. The Chief Executive's Report on submissions is currently being prepared.

4.2.3. Relevant policy under the current Wexford County Development Plan 2013 – 2019 is identified.

- Provisions relating to climate change (section 5.2).
- Renewable energies, energy crops and sustainable construction (section 6.4.4).
- Section 11.2 relating to energy and in particular section 11.2.1 relating to electricity network and objective EN 04.

- Sections 14.2, 14.4.2 and 14.5 relating to natural heritage, landscape character assessment and archaeological heritage.
- Section 18.8 and 18.29.3 relating to accessibility and sightlines.

4.2.4. There are no specific planning applications that would impact on the proposal.

4.2.5. There are a number of heritage assets of national importance adjacent the route. These have been identified and assessed in the EIAR. The proposed construction compounds could have a negative visual impact for a temporary period and measures must be put in place to ensure these compounds are screened particularly when viewed from popular heritage sites.

4.2.6. There are no known flood events or identified flood risks on the site of the converter station. Field drainage systems would appear to be in good working order. No additional issues arise in relation to surface water and flooding subject to normal attenuation requirements.

4.2.7. The application site is in a Landscape of Greater Sensitivity, Lowlands, Coastal and River Valley Landscape Character Units. Most impacts are temporary and with screening the compounds would have limited impacts.

4.2.8. The main impact is the Great Island Site which falls within the River Valley. The converter station site buildings and structures are identified as having moderate and negative effect on the landscape. The Council remains unconvinced that the mitigation measures will reduce the impact of the converter station and additional measures are sought to reduce the visual impact from the south and east.

4.2.9. There are no significant concerns relating to the road network during the operational phase. A pre and post road survey will be required, and a development bond would be recommended to repair any road services damage during the construction period.

4.2.10. The ecological assessment is considered to be comprehensive. Mitigation measures should be conditioned if permission is provided.

4.2.11. The proposals for community gain are noted. It is recommended that a one-off payment of €200,000 be paid to the council to be managed and ring fenced for community development in the local area given the disruption to the wider area during construction.

4.2.12. Planning contributions would normally be based on the floor space of new buildings. Underground power lines are excluded from the Development Contribution Scheme.

4.2.13. Subject to a bond for the protection of roads during construction there is no requirement for special development contributions.

4.3. Kilkenny County Council

4.3.1. Kilkenny County Council considers that the project is of national and regional interest and strongly supports its development. Greater international energy interconnection is an imperative National Objective. The report sets out a range of National and Regional policy objectives which provide support for the development of international electricity interconnectors. The project to develop an electricity interconnector would be an important addition to Ireland's electricity grid.

4.4. Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media

4.4.1. Heritage related observations/recommendations are summarised below.

Underwater Archaeology

4.4.2. All potential impacts to water courses should be archaeologically assessed as part of the AIA that will be undertaken for the works onshore. This UAIA should be in accordance with the requirements set out.

Nature Conservation

4.4.3. The Department has reviewed the NIS and the EIAR and the ancillary reports and drawings and makes the following recommendations.

- The draft invasive species management plan must be amended to include early management of three-cornered leek and Japanese knotweed.
- The car park provides opportunity for fly tipping which could lead to the further establishment of invasive species and will require regular management.
- The impacts of the use of herbicide should be assessed.

Baginbun car park.

4.4.4. The recommendations are as follows:

- In accordance with objective NH08 of the development plan there is a requirement that applicants/developers reinstate hedgerows.
- It is not clear if the proposed French drain will replace an open drain. The biodiversity impacts of the loss of the open drain must be assessed.
- The proposed drain outfall which is not shown may impact on the adjacent Hook Head SAC. The lack of any hydrocarbon interceptor at the car park adjacent to an SAC is noted.
- Consideration should be given to an ecological buffer between the car park and the SAC including landscaping with suitable native species.

Disturbance of Wintering Birds and Peregrine Falcon

4.4.5. The works with the potential to generate the greatest noise and vibration impacts will take place at the converter station site and is within 320 m of Waterford Harbour which forms part of the River Barrow and River Nore SAC. While Waterford Estuary is not designated as an SPA for protection of birds it is nonetheless considered nationally important for wintering waterbirds and a Peregrine Falcon nest box is within the Great Island compound. Blasting and rock breaking at the converter station site should take place outside the peak season for wintering birds. The Peregrine Falcon nesting box should be inspected and mitigation measures to minimise impacts of blasting put in place.

Transport of Abnormal Loads by Sea

4.4.6. The delivery of abnormal loads by sea may be necessary and may involve removal of part of the jetty bridge. The jetty is situated entirely within the River Barrow and River Nore SAC. If jetty removal is required it should be subject to appropriate assessment screening.

Nesting Birds

4.4.7. The EIAR states that where possible vegetation will be removed outside of the breeding season and in particular, removal during the peak breeding season (April – June inclusive) will be avoided. A planning condition should be included.

4.5. **Health and Safety Authority**

4.5.1. The HSA states that it can confirm, from the details received, that the development will not constitute a new COMAH establishment but is in the vicinity of a notified establishment. If technical advice is formally requested by the Board, the authority would assess whether the development could increase the likelihood of a major accident (or its consequences) at the COMAH establishment.

4.6. **Transport Infrastructure Ireland**

4.6.1. TII advises that it has no observations to make.

4.7. **Department of Agriculture, Food and the Marine**

4.7.1. This sets out requirements in relating to the felling or removal of trees if required. A felling licence from the Department shall be obtained before trees are felled or removed.

4.8. **Geological Survey Ireland**

Geoheritage

4.8.1. All geological heritage sites are categorised as CGS pending any further NHA designation by NPWS. There are a number of CGSs in the vicinity of the proposed development. The HVDC has the potential to impact on the Baginbun Head CGS site. The assessment recognises the moderate adverse impact to the site which will be minimised by drilling up to 10m below the CGS. The potential impacts on the integrity of the CGS have been assessed as 'moderate adverse'. Ideally the sites should not be damaged, or their integrity impacted or reduced in any manner.

Other comments

4.8.2. We request that any site investigation and drilling below the CGS be shared with GSI and that we are notified in advance of commencement of drilling.

4.8.3. Consideration should be given to use of information panels to describe the CGS.

4.8.4. If any significant bedrock cuttings are created, we would ask that they would be designed to remain visible as rock exposures or a digital record made.

4.9. Health Service Executive South

4.9.1. The comments of the Environmental Health Service (EHS) are as follows.

- There has been adequate public consultation, which should be maintained.
- The CEMP and mitigation measures detailed in the Planning Report, the Traffic Management Plan and the Construction Waste Management Plan will ensure protection of public health.
- The area was visited and is described in detail.
- There will be a long-term increase in noise and activity at the converter station during operation. The noise mitigation measures integrated into the design of the converter station are noted including with respect to the siting or enclosure or acoustic shielding of generating plant.
- Controls should be in place to minimise the impact of construction and operation of the development on bathing water quality.
- The risks to surface and groundwater from the converter and tail station and temporary compounds would be mainly during the construction phase.
- The main drinking water scheme serving the area is the South-West Regional Public Water Supply. There are no private wells in the development area.
- Sulphur hexafluoride is subject to regulatory controls for management, reporting and monitoring of the gas under Regulation (EU) No. 517 of 2014 on fluorinated greenhouse gas.
- The CEMP should consider the seasonal nature of recreation activities and tourism to minimise disruption to traffic routes and access to beaches during the summer season and consider sensitive receptors including schools.
- The CEMP should ensure protection of ground and surface water from contaminated run-off during construction particularly the designated shellfish area of Waterford harbour. Measures relating to water supply and surface water and wastewater are recommended.

- Due to the proximity to sensitive receptors construction activity should be routinely limited to Monday to Friday 08.00 to 18.00 hours and Saturday 08.00 – 13.00. Only exceptional work should be undertaken outside these hours.
- The operator will be required to comply with the nonionizing radiation emissions limits for general public exposure specified in the guidelines published by the ICNIRP and other guidance and standards.
- A separate report provided by HSE South Emergency Management states that it does not have any specific recommendations to make with respect to the application but sets out particular recommendations in the context of site operations.

4.10. **Anthony Mylett**

4.10.1. The main points of this observation are:

- I reside at Great Island Campile directly beside the L4033 road.
- I request information relating to the protection of my property against damages that may occur due to constant passing of high volumes of heavy vehicles and machinery for the construction of the project.

4.11. **John Kelly**

4.11.1. The main points of this observation are:

- The estuary route would have avoided health and safety concerns for residents and property owners along the current route. The proposed route creates health and safety concerns and devalues property and potential housing sites.
- Health impacts related to EMF are of concern as my house is 2.3 m from the edge of the road. I found no reference in the EMF report to allowable levels for continuous EMF exposure from the HVDC cables to residents that will be in close proximity to the cables on a full-time basis.
- What assurance or regulation will we have that the cables or power will not change over time?

- What exclusion zones will apply around the operating cables for future service providers to properties or sites?
- In recent years the road outside my property was upgraded and the surface raised by 200 – 250 mm above floor level of the property creating a sharp drop of 300 – 350 mm along the road edge fronting the property. This has made safe access to the property very difficult. If the cables are installed as indicated on the drawings it will not be possible to alter/rectify the road surface fronting the property at a later stage.
- I hope that international best practices apply to the installation of the cables to reduce as far as possible any omissions/exposure risks.

4.12. **John and Margaret Benson**

4.12.1. The main points of this observation are:

- Impacts on health due to electromagnetic fields which will affect our house which is 7 m from the centre of the road.
- Adverse impacts on property values and development potential
- Need for increase in depth of cable to 1.2 m to address EMF.

5.0 **Response**

5.1.1. The applicant was invited to respond to the submissions received from public authorities, prescribed bodies and observers.

5.1.2. The significant points of the response address the following:

- It is clarified that the converter station alternative no. 2 is no longer to be pursued.
- Comments provided in relation to the UAIA refer primarily to aspects of the EIAR.
- The Invasive Species Management Plan measures will not now rely on herbicides to address winter heliotrope. Implementation of the plan will be based on revised surveys closer to the date and will be agreed with the planning authority. The avoidance/eradication techniques are well understood,

and no particular difficulties would prevent effective treatment. There are inherent difficulties in treating invasive species on third-party lands prior to a grant of permission.

- Regarding the car park drainage, the French drain is now omitted. A hydrocarbon interceptor would not be consistent with the existing drainage regime.
- Regarding the potential for noise impacts on overwintering birds at Great Island further surveys are reported and research summarised. Noise levels during construction work including rock breaking and blasting will not exceed 70 dB at which disturbance would be predicted. The nest box has not been used to date. No ex-situ impacts on SCI birds have been identified.
- The transport of abnormal loads by sea is an option for the transformers which are 8.5 m x 5 m x 5 m. A trans-shipment flattop barge would enable a roll off operation at the Power Station. Depending on the specification of the flattop barge temporary removal of part of the jetty bridge as described may be necessary. Enclose drawings refer.
- The potential effects on European sites are considered. The potential for significant water quality is of negligible risk and in the absence of any impact on water quality or direct impacts on estuarine substrata there would be no impact on qualifying habitats or qualifying species or on prey for otter. The levels of noise would not be significant and no ex-situ impacts on SCI birds is predicted.
- Based on the above it is concluded that the transport of abnormal loads by sea and land either alone or in combination with other plans and/or projects does not have the potential to significantly affect any European site in light of their conservation objectives.
- If there is a requirement to remove vegetation in the breeding season, then vegetation will be inspected for nesting birds. The guidelines relating to protection of trees and hedges will be followed.
- The integrity of the CGS will be preserved and the residual significance of impact on the surrounding ground is negligible and imperceptible.

- Greenlink will provide notice and facilitate the GSI with any additional survey or drilling works. Information panels will be facilitated. Multiple datasets from the GSI were reviewed as part of the desk study. If possible, significant bedrock cuttings will remain visible or alternatively digital photographic records will be made and visits from GSI facilitated.
- The implications in terms of the proximity to the lower tier Seveso (COMAH) establishment have been assessed in chapter 17.
- The response to comments made relating to the CEMP primarily refer to the relevant sections of the EIAR.
- Adherence to appropriate requirements and suitable measures relating to drinking water, stormwater attenuation, chemical storage and drainage are described.
- Regarding the hours of working and the request of EHS this would increase the duration of the project. The suggested hours in the EIAR are therefore considered preferable. The duration of underground activities such as HDD works will be limited. At most the estimated duration at Baginbun Beach for example is eight days.
- The development contains a number of embedded design measures which aim to reduce the visual impact of the development within the constraints of the site including available land, topography and environmental and technical constraints.
- The extent and height of mounding is maximised. The converter station nevertheless will be visible within the landscape as noted in the EIAR and a range of mitigation measures are set out.
- A very similar approach to screening a large building which is illustrated is shown in the application photomontage and the actual results 10 years later.
- It would take considerable quantity of fill to create more screening mounds and the importation of additional soil material is considered inappropriate.
- The estimated costs of the parking spaces and street upgrade works is €222,100.

- The magnetic fields will be significantly below the advised levels.
- The estuary route was discounted at an early stage for reasons of impact on European site and navigation.
- No evidence has been presented to suggest that this infrastructure would lead to property devaluation. The cable will not be a constraint except in the way as other services in a roadway are.
- The large percentage increase in HGV traffic is reflective of the existing low-level traffic volumes on the road. Impacts will be managed through the CTMP. HGV deliveries will avoid passing schools at opening and closing times. The roads will be returned to their original condition.
- The community gain proposals are a fulfilment of the obligations and in the pre-application consultation the applicant undertook to make this proposal.

6.0 **Planning History**

6.1.1. The application form lists a large number of planning applications for development in the vicinity of the proposed development, the majority of which are for residential and agricultural development. The planning history is further described in Appendix C of the planning report. Wexford County Council has advised that there are no recent permissions which would have any implications for the proposed development.

6.1.2. Relevant permissions related to the electricity network are those listed below.

6.1.3. Reg ref 2018 0506 relates to an application for development of a grid system services facility including a TSO Compound, TSO electrical substation, customer substation in the townland of Great Island on the site immediately north of the proposed converter station. This is described as an **Energy Storage System** and I refer to the permitted development as the ESS.

6.1.4. Reg ref 2018 1228 is an application for permission for development at the existing Great Island to Kilkenny 110 kV overhead line which is approximately 49 km long and of which 2.6 km of the existing circuit is within the functional area of Wexford County Council. The development will consist of the **Uprate of the Great Island Kilkenny 110 kV** overhead line which will primarily include restringing the conductor with a higher capacity conductor, replacement of existing structures and works to

existing masts. No additional structures are proposed along the existing circuit. The application is accompanied by an NIS. This application site includes elements in the townland of Great Island in the vicinity of the converter station.

6.1.5. The planned **Rosslare to Waterford Greenway** utilising part of the railway line to the north of the site is on hold pending a request by the Minister in relation to the future of the railway network in the region.

6.1.6. Reg ref 2018 0581 relates to an application for retention of construction support buildings and other development and for permission for construction of alterations to buildings and other development at an establishment which holds an integrated pollution prevention and control (IPPC) licence and to which the major accident regulations apply. This is in the townland of Great Island on the site in the vicinity of the proposed converter station.

6.1.7. Reg ref 2015 1274 and 2017 1116 and 2017 1117 relate to applications for works at Great Island Power Station, Campile.

7.0 Policy Context

7.1. International

EU TEN-E Regulation 347/2013

7.1.1. The EU TEN-E Regulation 347/2013 sets out guidelines for the timely development and interoperability of priority corridors and areas of trans-European energy infrastructure. Amongst its provisions are the identification of projects of common interest which are necessary to implement priority corridors including in the electricity sector. Such projects shall contribute to at least one other set of specified criteria set down in Article 4(2) relating to market integration, sustainability and security of supply. There is a requirement for priority in administrative processing under Article 7. A Consultation Report is required pursuant to Article 9(4) of the TEN-E Regulations.

Energy Union (COM/2015/080)

7.1.2. The European Commission Framework Strategy for a Resilient Energy Union (COM/2015/080) launched the ‘Energy Union’. This was endorsed by member states

of the European Commission in 2015 and it set out related and mutually reinforcing dimensions relating to energy security and diversification, energy integration and efficiency, innovation, and climate action. The European electricity transmission system was described as being not sufficient to make the internal energy market work properly. A specific minimum interconnection target of 10% of installed electricity production capacity of member states was set as a target to be achieved by 2020. A 15% interconnectivity target was to be considered for 2030.

7.2. National

Ireland's Transition to a Low Carbon Energy Future 2015 – 2030

7.2.1. The Energy White Paper was a wide-ranging document. Included in its provisions it outlined the potential benefits of electricity interconnection and committed to promoting and facilitating interconnection with other countries and regions. It committed to policies that encourage diversification of energy supply.

Ireland's Grid Development Strategy, Your Grid, Your Tomorrow, 2017

7.2.2. Eirgrid's Development Strategy 2017 identified the need for investment in the electricity transmission system and for a long-term strategy to develop the electricity grid. The objective is to optimise the existing grid to meet projected demand levels, policy objectives and to ensure a long-term sustainable and competitive energy future for Ireland.

7.2.3. The need to explore more interconnection with other countries is identified in the context of the need to change to a competitive, low carbon energy system. The level of interconnection capacity is currently in line with the EU objective of 10%. By 2030 at least 15% interconnection will be required. The document references the existing East-West interconnector and the planned Ireland France interconnector and notes that private developers are also exploring further interconnection between Ireland and Great Britain.

National policy on Electricity Interconnection in Ireland, 2018.

7.2.4. The EU wide goal of completing the internal energy market requires physical infrastructure of interconnection to be in place. The National policy statement on electricity interconnector is designed to augment policy certainty for potential

developers and others. Most interconnectors will come through the PCI process. The commitment to the support of appropriate interconnection development is reiterated.

The Climate Action Plan 2019.

7.2.5. The National Mitigation Plan 2017 – 2022 was published in 2017 but in 2020 the plan was deemed by the Supreme Court not to comply with the requirements of the Climate Action and Low Carbon Act 2015. Consultation is ongoing in relation to the 2021 Climate Action Plan.

7.2.6. The Climate Bill embeds the process of setting binding and ambitious emissions reductions targets in law. It provides that in the first two carbon budgets a total reduction of over 51% should be achieved.

The National Planning Framework Project Ireland 2040.

7.2.7. National Strategic Outcome 6 seeks to create a strong economy supported by enterprise, innovation and skills which is underpinned by a range of objectives related to job creation, enterprise and innovation.

7.2.8. National Strategic Outcome 8 relates to transition to a low carbon and climate resilient society. New energy systems and transmission grids will be necessary for a more distributed and renewables focused energy generation system. Effective north-south electricity grid interconnection and exploration of other EU interconnection options will strengthen energy security and resilience. Supports solutions that offer the potential to connect Ireland to the EU electricity grid system.

National Development Plan 2018 – 2027.

7.2.9. The National Development Plan identifies the transition to a low carbon and resilient society as a national strategic outcome. Amongst the measures which are required to decarbonise energy generation and enhance energy efficiency are the development of further interconnection, which will increase energy security and facilitate the more variable electricity generation on the grid.

7.3. Regional

Regional Spatial and Economic Strategy for the Southern Region 2020.

7.3.1. This came into effect in January 2020. The region is described as being particularly rich in renewable energy resources and containing significant energy generation infrastructure of national and regional importance. It is stated that even with significant energy demand centres the region is currently generating more electricity than demand. The region has a strategic role in terms of energy assets in national energy generation and transmission.

7.3.2. **RPO 219** sets out the objective to support sustainable reinforcement and provision of new infrastructure to ensure that energy needs of future population and expansion within designated growth areas 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.

7.3.3. **RPO 222** sets out the 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 to serve the existing and future needs of the region and strengthen all Ireland energy infrastructure and interconnection capacity.

7.3.4. **RPO 223** sets the objective of supporting the sustainable development of international energy connection infrastructure and to support the sustainable development of the Celtic interconnector project between Ireland and France from a location in the region.

7.4. Development Plan

Wexford County Council Development Plan 2013 – 2019

7.4.1. **Objective EN 04** refers to facilitating the provision of and improvements to energy networks in principle subject to demonstrating that the development is required to facilitate the provision or retention of significant economic or social infrastructure, that the proposed route has been identified with due regard to impacts, that the design will achieve least environmental impact consistent with not incurring excessive cost, that mitigation features are included and that proposals are assessed in accordance with article 6 of the Habitats Directive.

7.4.2. Section 11.2.1 addresses the electricity network. It notes that Eirgrid's Strategy Grid 25 envisaged major reinforcements to the existing network across all regions. Reference was made to the East-West interconnector project which was then being progressed and which would provide a 500MW link with the UK to strengthen the security of supply and provide opportunities to export and/or import electricity.

7.4.3. The Council will support the reinforcement of the electricity transmission grid to improve energy supply to the county. It will support the statutory providers of national grid infrastructure by safeguarding corridors from encroachment provided these corridors do not have adverse impacts on residential amenity or the environment. Where proposed high voltage lines traverse existing or proposed residential areas they should be located underground where appropriate, in the interest of residential amenity.

7.4.4. Section 11.3.4 in the context of wave and tidal energy notes that Grid 25 will provide for connection of further interconnectors along the south-east southern coast. It references that an interconnector from Wexford could be linked to a tidal test site at Tuskar Rock to allow developers to test tidal prototypes.

7.4.5. Provisions relating to climate change are set out in section 5.2.

7.4.6. The cable site is within a Landscape of Greater Sensitivity, 'Lowlands', Coastal and River Valley Landscape Character Units. As described in the Wexford Landscape Character Assessment these areas are of scenic appearance and sensitive to development due to the presence of the sea.

7.4.7. The Great Island Site falls within the River Valley. These are described as being of more scenic appearance due to the presence of the rivers and their associated riparian and woodland habitats and are very sensitive to development.

7.4.8. Sections 14.2, 14.4.2 and 14.5 set out policies relating to natural heritage, landscape character assessment and archaeological heritage.

7.4.9. Section 18.8 and 18.29.3 contains provisions relating to accessibility and sightlines.

Draft Wexford County Development Plan 2021 – 2027

7.4.10. Wexford is noted to have made a significant contribution to the state's installed renewable energy. Objective CA04 is to implement the energy strategy in volume 10 to facilitate the transition to a low carbon county.

7.4.11. Section 9.12 states that the Council will support the reinforcement of the electricity transmission grid. Where proposed high-voltage lines traverse existing or proposed residential areas, they should be located underground.

7.4.12. **Objective PT 01** is to facilitate the provision of and improvements to energy networks in principle subject to criteria including that the development is required in order to facilitate the provision or retention of significant economic or social infrastructure and route selection.

7.4.13. **Objective PT 03** is to support the upgrade of existing and development of new electricity substations in locations that do not have a significant negative impact on residents and are subject to landscape screening.

7.5. Waterford County Development Plan

7.5.1. Appendix 9 identifies a scenic route in the area along the regional road to the south of Cheekpoint.

7.5.2. The coastline, estuaries and banks of rivers are identified as ‘Vulnerable’. Cheekpoint is described as ‘Robust’.

7.6. Kilkenny County Landscape Character Assessment

7.6.1. This identifies the following areas of relevance to the proposed development:

- South Eastern Hills’, including areas which overlook Great Island.
- ‘Suir Valley’ includes the river corridors of the Suir and Barrow where the rivers are the dominant visual and landscape features.

8.0 Planning Assessment

I propose to assess the significant planning issues in this case under the following headings:

- policy and need
- landscape and visual impact assessment
- traffic and access

- biodiversity
- electromagnetic fields
- community gain.

8.1. Policy and Need

8.1.1. The strong support at EU and national level for the development of enhanced electricity infrastructure is evident from plans and policies adopted in the last decade. I will set out below aspects of the policy which provide a justification for the proposed development in terms of the need for the development and benefits arising. In this respect I have had regard in particular to section 5 of the applicants Planning Report and the policy provisions outlined earlier in this report.

8.1.2. As a project of common interest (PCI) it may be considered that the Greenlink Interconnector has already been adjudicated at EU level to be a priority project in the electricity sector and one which will contribute to security of supply and sustainability. At EU level the achievement of interconnection targets will be met primarily through the PCI process as outlined in Ireland's National Policy on Electricity Interconnection. The overall project will result in an increase in nominal capacity of 500 MW interconnection between Ireland and Great Britain. To put that in context the existing East – West interconnector is stated to provide 1000 MW interconnection and the planned Celtic Interconnector would be a 700 MW interconnector to France.

8.1.3. The proposed Greenlink Interconnector supports EU and national policy through the provision of physical infrastructure necessary for strengthening the internal energy market and for the drive to low carbon energy. With increased generation in the renewable energy sector curtailment can be minimised through greater connectivity to a wider market. Thus the development through the provision of additional interconnection is expected to support renewables including offshore wind generation in Ireland.

8.1.4. As a significant interconnection project between Ireland and the UK there is strong policy support for the project under the NPF in terms of strengthening energy security and resilience. Greater interconnection will allow for reductions in the future peaking plant requirement. The impact of supply shocks or unplanned power station

outage or faults at peak demands will be mitigated. It will allow for linkage of pools of supply and demand and thus introduce resilience.

8.1.5. Through the extension of the electricity market by providing greater interconnection to the larger UK market, the proposed development would protect customers from overreliance on one source and promote competition and potentially lead to lower energy prices.

8.1.6. Referencing the exit of the UK from the EU, section 5.7 of the Planning Report notes that there can be a high volume of electricity exchange between member and non-member states. Modelling undertaken by the Commission for Regulation of Utilities suggested that the social benefits of the project would remain broadly unaffected in that scenario. The development would still provide for improved integration of renewable energy sources, improved security of supply and lower costs of electricity through improved efficiency.

8.1.7. In terms of the regional context, the Southern Region has a strategic role in terms of energy assets in national energy generation and transmission. The future of the solar sector is relatively strong and the potential for offshore wind is also noteworthy. Objectives of the RSES support sustainable reinforcement and provision of new infrastructure including international energy connection infrastructure. Such new infrastructure will ensure that the energy needs of future population and expansions within designated growth areas can be delivered and that a safe, secure and reliable source of electricity is available to the region.

8.1.8. At the level of the County Development Plan policies objective EN 04 refers to facilitating the provision of and improvements to energy networks in principle subject to demonstrating that the development is required in order to facilitate the provision or retention of significant economic or social infrastructure and that the proposed route has been identified with due regard to impacts. Elsewhere the plan sets out support for the renewable energy sector. I consider that the provisions of the development plan provide high level support for the type of infrastructure subject of this application and I note that this support is reiterated in the draft County Development Plan.

8.1.9. In conclusion I consider that the proposed Greenlink Interconnector will be of key strategic importance by providing significant additional interconnection between

Ireland and Great Britain and onwards to mainland Europe. It will provide additional transmission network capacity, will deliver increases in efficiency and security of supply and will greatly assist the drive to reliance on renewable energies.

8.1.10. I conclude that the proposed development is in accordance with the proper planning and sustainable development of the area.

8.2. Landscape and visual impact assessment

Introduction

8.2.1. Following inspection of the site and consideration of the prevailing development plan policies and the application submissions I agree with the applicant's assessment that the permanent landscape and visual impacts arising will be clustered at the site of the converter station at Great Island. The temporary landscape impacts at the coastal areas to the south in particular will have a short-term negative effect on a scenic landscape which is of value in terms of recreational use and cultural heritage. Such temporary effects would not be of sufficient significance to influence the Board's decision on the application. Therefore, I address these matters under the EIA section below.

8.2.2. The focus of this assessment is therefore on the Great Island site. It is evident that at this location the most significant landscape change and visual effects will arise. The landscape context is scenic and includes Dunbrody Abbey to the east, Cheekpoint village and a designated scenic route in Waterford to the south and a planned amenity Greenway / revitalised railway to the north. The proposed converter station (alternative 1) includes a 123m long 21m high 53m wide converter building to be located with the tail station on a level platform at 23m OD to the east of the SSE Power plant. I consider there is potential for significant visual impacts, which could affect the character of the landscape and impinge on views including from residential receptors and historic features.

8.2.3. Regarding the applicant's submissions as relevant to the Great Island site I note:

- The submission includes photomontages focused on the Great Island site.

- The proposed development including the design of the landscape and the proposed buildings emerged from an iterative process informed by the potential landscape and visual assessment conclusions.
- Two alternatives for the converter station were presented in the application. Alternative 2 is not to be pursued.
- Cumulative effects from the potential development of the permitted ESS between the site of the converter station and the former railway/Greenway is included.
- Relating to the photomontages the applicant states that the worst case has been assessed and also notes that the night landscape and effects due to site lighting is taken into account.

8.2.4. The planning authority expressed concern relating to the visual impact of the converter station and requests additional measures to reduce the visual impact from the south and east.

8.2.5. I assess the landscape and visual impacts related to the Great Island site under the following headings:

- Landscape character and significance.
- Permanent landscape and visual impacts and mitigation.
- Conclusions.

Landscape character and significance and potential impacts

8.2.6. The Great Island site is prominently located at the confluence of large rivers and the meeting point of three counties. Due to the landscape presence of a long-established major energy facility combined with the steep topography of the river valley and the broad expanse of water I consider that the area has a very particular landscape character. The SSE Power plant is a dominant feature in relation to which the tall chimneys, or in some cases the entirety of the facility are prominent landscape features. A chimney at Bellevue port from which there is a plume is also evident in views, sometimes in combination with views of the SSE plant. From Cheekpoint and from other locations to the south-east the SSE plant is prominent or at least clearly

visible in the landscape. In the general area however the wide river valley and steeply sloping wooded valley appear as a natural and pleasing landscape.

8.2.7. Under the development plan the River Valley landscape context is attributed some value. The view along the regional route between Cheekpoint and Passage East in Waterford is designated as a scenic route. There is a protected view in County Kilkenny which is represented by photomontage 10. No particular landscape designations apply to the actual site of the converter station and tail station.

8.2.8. Following inspection of the site and surrounds and consideration of the photomontages I consider that the views of note which have potential for significant impacts are:

- Views from county Wexford to the south and east of the site including from Dunbrody Abbey and the adjacent regional road (photomontages 5, 6 and 7).
- Views from the south in Waterford including Cheekpoint (photomontage 9).
- The view from the planned Greenway / railway line to the north of the site.

8.2.9. I consider that there are no likely significant adverse visual effects on the following for the stated reasons:

- Kilmokea Manor and Gardens to the north of the converter station site and JFK Arboretum to the north-east and Kilmokea church and graveyard. There would be no significant unimpeded views from these amenities.
- The protected view (photomontage 10) in County Kilkenny. Following inspection of this viewpoint I note that the existing power plant is within the view in the distance. The proposed development would comprise a small element in the landscape and would not militate against the protection of the scenic qualities of the protected view. Kilkenny County Council has not raised any issues regarding this viewpoint and supports the proposed development.
- Slievecoillte Hill to the north (photomontage 4). I did not inspect this viewpoint as it is even more distant than viewpoint 10. There would be clear expansive views from the viewing point at the top of the hill as represented in photomontage 4. The proposed development would not be highly visible from this viewpoint and would not detract from the landscape.

- Various residential receptors in the rural environment. Residential properties and roads from which there are views of the converter station site are described in section 11.2.6 of the EIAR an shown in figure 11.5. A group of residents at Newtown/Great Island (RG01) are as close as 500m from the site and another group of residents over 1.8 km to the north-east (RG03) are deemed to be of high sensitivity and photomontages 1 and 2 refer. There will be temporary landscape and visual effects that would reduce in time and be mitigated by the applicant's landscape proposals. In addition, rural housing sites are typically bounded by screening vegetation. Taking into account the low numbers of residents affected, the proposed development is acceptable.
- There is a Scenic Route along the R683 between Cheekpoint and Passage East (photomontage 8). The planning authority Waterford County Council did not make any comment on the application. At the time of inspection, I drove part of this route (close to viewpoint 8) in both directions. I can report that views to the site are very limited. There is no formal viewing point and few places to stop safely. I conclude that there is no likelihood of significant visual impacts which would detract from the value of this view.
- I refer to the very charming coastal area Nook Bay, which is represented by photomontage 7. I inspected this location and concluded that the converter station development and the temporary works and landscaping would result in significant visual effects which would be likely to be adverse including by reason of detracting from the natural qualities and extending the visual presence of the industrial style facilities. The converter station building would be clearly visible albeit as a simple building which breaches the skyline but would be located to the rear of landscaped berms. It is important to note that this viewpoint is quite inaccessible being located at the end of a long narrow county road, which is a cul-de-sac. This location would not be a regular destination for many people. In this context and having regard to the lack of development plan protection, the proposed development would not give rise to significant implications for the Board's decision and is acceptable.

Landscape and visual impacts and mitigation

8.2.10. The applicant describes a number of embedded mitigation and design choices which contributed to the finalised proposed development. I note the applicant's submission that in selecting the site for the converter station the aims included that the proposed development appears as an extension to the existing energy facility. I agree that this is a desirable objective and I consider that the objective is largely achieved. The alternative site options were north of the railway line and their development would have read as new landscape features of industrial character in a rural area. However, the alternative sites to the north would be low lying and the landscape and visual impacts would affect a different and perhaps less sensitive zone of influence. These sites would however be closer to residential properties and be associated with different potential adverse effects. On balance therefore I agree with the applicant's position that the selected site is preferable to the other options in the area.

8.2.11. To address the elevated site the embedded design approach involved consideration of the ground levels for the converter station and tail station and alteration of topography to achieve a level area at 23 mOD. The creation of the platform for the converter station and tail station would require cuts of 9m in places and the excavated material is to be used to create earth mounds to the south and east, which will be planted. As seen from the drawings the landscape mitigation proposals are extensive, in keeping with the scale of the proposed development. In addition to the introduction of the additional buildings the landscape appearance will be altered from green fields to a wooded environment with some views to the 21m high converter station. It is therefore concluded that there would be significant landscape and visual effects.

8.2.12. At this point I would refer to the accuracy of the submitted photomontages. I have no doubts about the representation of the proposed development in the sense that they provide a useful means of comparing particularly the existing power plant and the proposed development and setting the proposed development in a landscape context. However, I would advise the Board of my opinion that when used on site and following the advised viewing distances, the images fail to give an accurate impression of the scale of structures on the ground. The images are nevertheless a useful aid to the assessment of this case.

8.2.13. I consider that the proposed earth form on maturation will greatly screen the views to the new building from the south including from Cheekpoint and note that the

topography and site position ensure that the viewer would not be directly drawn to the converter station. However, the proposed mounds would not fully screen the 21 m high building. The selected alternative is acknowledged by the applicant as giving rise to greater visibility on view locations and visual receptors to the north. This is due to its east west length in comparison to the other option. I consider that this conclusion is also relevant to views from the south including from Cheekpoint.

8.2.14. I accept that in time the views to the proposed development from relevant locations would be significantly mitigated. I consider that this conclusion may be drawn in particular in relation to views from the south. The views from the south are already most significantly impacted by views to the SSE Power plant. From Cheekpoint the existing energy facility is an unavoidable and dominant element in the landscape. The proposed development would be sited at a less dominant position relative to the village core and riverside amenity area. Therefore, on maturation of the landscaping I conclude that the proposed development would not greatly detract from the enjoyment of the landscape.

8.2.15. Regarding the views from the east I consider that the most significant adverse impact would be on Dunbrody Abbey. I note the visibility of the existing power plant within the view to Dunbrody Abbey from the curtilage of the monument and from the regional road. The area which would be most affected is the rear of the monument and from the regional road. If achievable the provision of additional earthen mounds and planting to the east of the converter station site would assist in screening the 21m high facility located at 23m OD and which visible at a distance from Dunbrody. As an alternative there may be opportunities for some carefully positioned tree planting which would assist in integrating this large development. Further discussion with the planning authority as part of the agreement of the detailed landscape plan is therefore recommended.

8.2.16. Separately, I note the comments of Wexford County Council which reference the construction phase screening. I consider that no additional construction phase screening measures would effectively reduce the visual impact of the proposed development from Dunbrody Abbey. In the construction phase in particular my opinion is that the proposed development would be quite visible, and it would detract slightly from the landscape setting of the historic monument. However due to the

distance I consider that the cultural heritage value and enjoyment of the Abbey would not be affected to an extent as to warrant a refusal of permission.

8.2.17. Finally, I refer to the views from the north from the planned Greenway / future active railway line. The linear route is very close to the northern boundary of the converter station site and the site of the ESS is closer again. The applicant states that the railway line has extensive mature vegetation along the route and that there will be filtered views of the site. I consider that for a section of the route to the east of the site, boundary trees and vegetation are absent and where the level of the railway line is relatively elevated, there are likely to be clear views to the converter station site. There may be opportunities within the applicant's lands to provide some planting to screen such views. In the context of a long-distance cycle route or a railway journey a changing landscape character would be part of the experience and I do not consider that the proposed development would give rise to a significant adverse effect.

8.2.18. Regarding the applicant's response to the planning authority's request for additional mitigation I note the comments relating to the amount of material which would be required to create additional screening mounds and the reference to the use of a restricted selection of colours that are natural to the surrounding environment. I consider that it is appropriate in the circumstances of this case that the landscaping plan and external finishes be subject to further agreement with the planning authority.

Conclusion

8.2.19. I conclude that subject to the condition recommended above, the development is acceptable in terms of landscape and visual impacts.

8.3. Traffic and access

8.3.1. While traffic levels in the area are low and the traffic generated by proposed development would not be described as very high, there are some issues which warrant particular consideration as part of the planning assessment. In the EIA section below, I also set out an overview of the existing environment, the likely significant impacts, mitigation and residual impacts.

8.3.2. In this section I address the significant construction phase effects arising from the various component elements of the project and in the context of the particular roads which will be affected and uses in situ. I also briefly reference operational phase and decommissioning phase traffic.

8.3.3. The applicant's traffic impact assessment provides an assessment of the HGV and light vehicle trips which would be generated at the various sites. The Great Island site dominates with the predicted total trip number approximately four times higher than trip levels associated with the landfall site or with the Lewistown compound. At the converter station site, the applicant notes that due to the arrival and departure times of staff the effects on peak hour traffic will be negligible. I accept this point. Further, as the applicant notes the overall traffic volumes will remain below the carrying capacity for the road types. I consider that the evidence presented can be accepted.

8.3.4. In the context of this rural area perhaps the more significant issues relate to the relative increase and the composition of traffic. HGV traffic increases would be keenly felt including by local residents some of whom have referenced this matter in terms of amenity and damage to their houses. The proximity of many of the houses to the narrow road network has been referenced and it is undoubtedly a characteristic of the entire study area.

8.3.5. Regarding the **Great Island site** tables 6.10 – 6.12 in Chapter 6 of the EIAR refers to the increases in traffic for a range of times at two locations, the local road near the site and the nearby R733. Increases in overall traffic are predicted to be in the order 70% at the local road close to the Great Island site and under 20% at the R733. As an example, I note the typical 24-hour traffic at the local road is presently 744 vehicles of which 13% are HGV and this would increase during construction to 1270 of which HGVs would comprise 10%.

8.3.6. It is reasonably assumed in the traffic assessment that all construction traffic will access the site from the north. Traffic from other directions including by way of the Passage East / Ballyhack ferry would not be likely to be significant and would not include HGVs.

8.3.7. In terms of the impact on **regional and local roads** I am in agreement with the applicant's conclusion that works at the Great Island site will not give rise to

unacceptable construction phase traffic levels, which is assessed in the EIAR as moderate to significant temporary negative effects on traffic conditions. The 70% increase in traffic at the local road is undoubtably significant in the context of the low volumes on the local road. The arrival and departure of construction workers will clearly be noticeable in terms of increased traffic on the local and regional roads but will not give rise to capacity or safety issues. The increase in HGVs on the local road as extrapolated from the information for the 24-hour period with and without the development from table 6.11 is in the order of 31 HGVs. I do not consider that this level of heavy traffic would be detrimental to the amenities of residents in the area, notwithstanding the proximity of some houses to the road, subject to appropriate traffic management. At the time of my inspection I noted a 50 kph was in operation on the local road accessing the power plant site. A similar speed limit could be considered for the L4033 between the Great Island site and the R733, as part of the CEMP incorporating a CTMP.

8.3.8. The southern part of the study area contains most significance for recreational tourists including cyclists and beach users and is the location of much of the cable route and the landfall. The Hook Head peninsula would be a particular draw for many tourists and noteworthy amenities in the area include the EuroVelo 1 cycle route. Therefore, in this part of the study area the protection of tourist and recreational users including cyclists is of heightened significance. This is acknowledged in the EIAR which states that the regional and local roads are lightly trafficked but also subject to high levels of tourism and designated for amenity purposes. Health Service Executive South states that it would be appropriate that consideration be given to tourist and recreational users in the adoption of any detailed traffic management plan. Particular uses in Ramsgrange are also noted including schools. I recommend that these groups be referenced in any condition relating to traffic management.

8.3.9. Regarding the **landfall site at Baginbun Beach** construction will generate considerably lower traffic volumes than the converter station site. It is assumed that traffic will come from the north by the regional road by way of Fethard on Sea. A particular issue will be mobilisation and demobilisation for transporting HDD plant. The applicant proposes that these trips will be spread out over the day to give a maximum of one trip per hour in each direction. A further issue relevant to this area

is the delivery of large cable drums. During normal HDD and cable work at this location there would be up to 40 light vehicle trips per day in each direction, which would fall outside peak traffic hours. As the baseline traffic in the area during the summer is significantly higher than in the winter the construction phase traffic would constitute a higher proportion of traffic in the area in the winter season. For instance, in the vicinity of the landfall site in winter the increase in typical traffic along the R 734 Hook Head Rd is given as high as 341.7%. The applicant notes however that the increase traffic volumes in winter would still remain lower than the existing summer volumes.

8.3.10. As part of the mitigation the applicant proposes that construction works at the landfall and along public roads will not be carried out from 1 July to 31 August. I consider that this is a valuable measure which will ease congestion and provide for safe use of the amenities in the area. The Board may wish to consider whether it would be appropriate that the additional car parking be required as part of the first phase of the development. In the context of the cessation of works for the peak summer months such a requirement would appear unnecessary. Any condition relating to the traffic management plan should however address the matter of parking at this and other amenity areas to ensure that there is adequate provision for the season.

8.3.11. I now make some further points regarding the **cable route**. The applicant has set out some of the traffic management measures which will be necessary during the laying of cable along the road network. These include where necessary some road closures in relation to which there is stated to be suitable alternative routes. The applicant acknowledges that in the preparation of the Construction Management Plan Ramsgrange village will require careful consideration. The inevitable delays and disruption to local residents and businesses as a result particularly of the cable laying are acknowledged by the applicant.

8.3.12. I now briefly address the matter of **indicative haul routes** which are shown on figure 6.11 of the EIAR. Broadly speaking the site of the proposed development benefits from proximity to the ports and to the M25, which is 12 km to the north of the study area and will serve as the main conduit for construction related traffic. The causeway which is along the local road north of the Great Island site may be unsuitable for large loads. The possibility of utilising the jetty at Great Island for deliveries of abnormal loads has been identified as an alternative for the delivery of the

transformers, which will have maximum dimensions of 8.5m x 5m x 5m height. As there are a range of options available I am satisfied that there should be no difficulties in relation to delivery of abnormal loads.

8.3.13. Wexford County Council has indicated that there are no significant concerns relating to the road network during the **operational phase**. I agree with this conclusion and note the assessment by the applicant that the level of traffic generated in the operational phase will be minimal and the impact imperceptible. Similarly, I note the applicant's comments relating to decommissioning phase traffic which would be less extensive than the construction works and in the context of higher baseline traffic on the road network. The assessment that effects are predicted to be short-term and slight is reasonable.

8.3.14. It is indicated by Wexford County Council that a pre and post road survey will be required, and that development bond would be recommended to repair any road services damaged during the construction period. The surveys have been committed to already by the applicant as part of the traffic management plan. The applicant has indicated no objection to a contribution regarding a bond. I consider that these matters are appropriate for conditions and have made a recommendation in that respect.

8.3.15. Health Service Executive South reference the need for communication channels between residents and contractors to address any issues that might arise during construction. I am satisfied that this is adequately addressed in the EIAR.

8.3.16. I note the request of **Mr Anthony Mylett** who states that his house at Great Island Campile it is directly beside the L4033 road. Due to the construction traffic he has requested information relating to the protection of his property against damages that may occur due to constant passing of heavy vehicles and machinery for the construction of the project. The observer would be one of a number of property owners resident along the local and regional roads connecting the HGV and other traffic to the national road network. I have previously referenced the possibility of a lower speed limit to be considered for agreement between the applicant and planning authority under the CTMP. As well as providing for better conditions for pedestrians and cyclists in the area such a condition would also reduce the potential for vibration. Notwithstanding that recommendation I consider that due to the

relatively low HGV which would be generated, there is no requirement in this case for measures to address potential adverse impacts on property and the observer has not given any reasonable basis or substantive information to support such a condition.

8.3.17. Mr Mylett also sets out a suggestion regarding the L4033 off the R733, specifically the implementation of traffic management at either side of Causeway to allow residents to use the local roads without meeting heavy vehicles. He notes that traffic lights which were used in the past were not successful and that the route is used by school buses. The applicant in response notes the relatively small increase in traffic and the agreement of a detailed Construction Traffic Management Plan which will include laision with the Council and coordination of deliveries. I consider that the particular specific requirements relevant to the local roads are in general best addressed through agreement with the planning authority and I do not propose to intervene in this respect save for a few measures already identified.

8.3.18. I note the comments of the observer and the applicant in relation to the hours of working. I accept the applicant's proposal for core working hours of 07.00 to 19.00 Monday to Friday and 08.00 to 14.00 on Saturday. The restriction on deliveries in relation to the operation of the local school is noted in this respect.

8.3.19. I refer the Board to the observation of **Mr John Kelly** who states that in a recent upgrade of the public road adjacent his house the level was raised by 200 – 250 mm above floor level of the property creating a sharp drop of 300 – 350 mm along the road edge fronting the property. He states that this has made safe access to the property very difficult and if the cables are installed as indicated on the drawings it will not be possible to alter or rectify the matter at a later stage. I consider that this is a detail to be addressed at a local level and is not a matter for the Board to deal with by planning condition including for the reason that it appears to relate to a pre-existing situation.

8.3.20. In conclusion I am satisfied that subject to adherence to the proposed construction traffic management plan, the development would not give rise to any unacceptable traffic related impacts during the construction of the proposed development. Any impacts in the operational phase or decommissioning phase would not be significant in terms of the consideration of the proper planning and sustainable development of

the area. The proposed development is therefore acceptable in terms of traffic and access impacts.

8.4. Biodiversity

Introduction

8.4.1. Having regard to the site context including the location of the development in a rural area close to a major river and estuary and to the scale of the works at the converter station site and along the cable route, there is potential for adverse effects including indirect effects due to construction phase impacts including noise, vibration, disturbance, water quality impacts and spread of invasive species. Direct effects would include a net permanent loss of seminatural terrestrial habitat.

8.4.2. I propose to consider the biodiversity aspects of the proposed development under the following headings:

- terrestrial and aquatic habitats
- birds
- mammals.

Impact on Terrestrial and Aquatic Habitats.

8.4.3. The range of potential effects on terrestrial and aquatic habitats include direct removal of habitats and effects from the spread of invasive species. These are summarised in table 9.16 of the EIAR. The potential impacts on terrestrial and aquatic habitats are discussed below.

8.4.4. At the site of the proposed converter station there will be direct impacts on recolonising bare ground, scrub, improved grassland and a discharge of surface water during operation to a small watercourse. These impacts are assessed in the EIAR as being negative and slight impacts, which I consider is a reasonable conclusion. I note that one of the recommendations of DAU refers to a requirement to reinstate hedgerows to ensure no net loss of biodiversity. I consider that the extensive planting which is proposed at the earth and berms at the converter station site address this recommendation.

8.4.5. At Campile river estuary crossing where the tidal rivers and upper saltmarsh habitats are of international importance the EIA indicates that there will be neutral, imperceptible temporary impacts as these habitats will be unaffected due to use of HDD technology. In the vicinity are other habitats of local importance and include mixed broadleaved woodlands, hedgerows and embankment, which will be unaffected. I accept these comments and note that the only habitat to be significantly impacted at this location is improved grassland.

8.4.6. At Baginbun Beach landfall site and site of the proposed parking area the removal of a raised bank alongside the road will give rise to loss of feeding and nesting resources and have a limited localised impact which is negative, slight and permanent. The submission of NPWS noted the value of brambles as pollinators and the need for replacement planting. The applicant's response to submission provides a lot of detail on the Baginbun Beach car park area. A detail is set out for replacement planting of a hedgerow of native species, which is suitable mitigation for the loss of a hedgerow.

8.4.7. The rocky sea cliffs, sedimentary sea cliffs and sand shores habitats at Baginbun Beach are all described as being of international importance and these will be unaffected due to use of HDD technology. The applicant has responded to other issues mentioned in the DAU, which I refer to under the appropriate assessment section of this report.

8.4.8. Along the cable route where there are artificial surfaces, buildings, stone walls, trees and hedgerows negative, slight permanent impacts are predicted in the EIAR in the absence of mitigation. Significant stands of trees along the route have been identified and mature trees are avoided as far as possible and no significant loss of trees or hedgerow is predicted. Following inspection of the area and consideration of the application documentation, I note that in general the cable route in particular is virtually devoid of mature mixed species hedgerows and mature trees.

8.4.9. Regarding the potential for invasive species spread this matter is addressed in detail in the submission of DAU. The species which are present in the area are three-cornered leek, Japanese knotweed, rhododendron and winter heliotrope. The applicant submission is that based on the invasive species management plan

presented in appendix 9.6 there is no impediment to the removal of invasive species and no risk to local ecology identified.

8.4.10. The submission of DAU provides detailed comments relating to the four species present and indicates concern that the proposed development may lead to the spread of three-cornered leek and Japanese knotweed. Areas identified as requiring specific treatment during the planning phase should be demarcated and designated control measures implemented. Three-cornered leek is present at Baginbun Beach and Japanese knotweed along the cable route in a single stand close to Templars Inn car park and in relation to both species indicates concern that avoidance may not be possible. Regarding Winter Heliotrope which is ubiquitous along roadside verges DAU considers that the eradication of the species from the works area post construction should be reconsidered after the species is mapped. The impact of use of herbicide requires further assessment. The Department agrees with the preferred option to avoid any works within the area where rhododendron is present.

8.4.11. The approach taken by the applicant is first and foremost avoidance of invasive species. A commitment has been given, including in response to the DAU submission, to undertake repeat surveys and to update the ISMP. That plan will then be submitted to the planning authority. The applicant's position is that while early treatment of invasive species can be advantageous it is not a prerequisite for effective avoidance or eradication and notes that there are difficulties in gaining access to third-party land at an early stage. The applicant in response to the submission of DAU has reconsidered the use of an extensive herbicide treatment program, which will not now be used in relation to the species.

8.4.12. Having considered the submissions of the two parties in relation to invasive species I consider that the proposed resurvey and revision of the ISMP and submission of that document to the planning authority is the appropriate means to address any significant issues in respect of threats to habitat from invasive species. I recommend a condition to this effect.

8.4.13. Having regard to the above I consider that it may be concluded that the proposed development by reason of direct and indirect effects including from the spread of invasive species does not have the potential for significant impacts on habitats of ecological value.

Birds

8.4.14. The basis for the assessment of impacts on birds includes general bird surveys as part of habitat surveys undertaken throughout the year and specific breeding bird, barn owl and winter bird surveys. I consider the surveys together with consultation with NPWS provides a strong basis for assessment of the impact on birds.

8.4.15. In terms of the potential impacts on terrestrial bird species it is notable that no rare or uncommon species or species of high conservation value were recorded at the site. A Peregrine Falcon nest box at the Power Station site has not been utilised to date as a breeding site and it will be kept under review and if necessary, mitigation measures will be specified by the supervising ecologist. There would be no significant impact on the species. Hen Harrier has been recorded frequenting Campile estuary and the assessment of the applicant is that impacts will be avoided by use of HDD, which I accept and in relation to which DAU has not made any comment.

8.4.16. The loss of seminatural habitats and in particular the loss of scrub at the site of the proposed converter station will affect feeding and nesting resources. The habitats impacted are ephemeral and are widely lost and created in rural areas. Small areas of grassland will be lost. Overall, it is reasonable to conclude that the loss of habitat for breeding birds within the development site is a long-term, slight effect. Disturbance of terrestrial and breeding birds during construction as a result of noise and disruption will be short in duration and the effect may be described as temporary and slight.

8.4.17. As mitigation for loss of seminatural habitats which would be of importance for breeding birds, the EIAR states that where possible vegetation will be removed outside of the breeding season and in particular, removal during the peak breeding season (April – June inclusive) will be avoided. I note the comments of the Department of Agriculture, Food and the Marine includes a recommendation that this be addressed by condition as specified. The recommended condition requires that clearance of vegetation from the site should only be carried out in the period September to February inclusive i.e. outside the main bird breeding season. Other requirements are set out relating to removal of vegetation outside of this period involving inspection for nesting birds by a suitably qualified ecologist and suitable

mitigation should nesting birds be found. These requirements are reasonable and appropriate, and I have incorporated them below.

8.4.18. Regarding potential impacts on birds associated with shoreline/estuarine habitats and in particular important populations of overwintering waders and waterfowl, I note the undertaking by the applicant of winter bird surveys in 2015/2016 and in 2018/2019 at Baginbun Beach and Campile river estuary. Supplementary surveys of mud flats close to the Great Island site were undertaken in 2021. In terms of the effect of disturbance and displacement on bird species this is described as not being significant on their overall survival rate due to the close proximity of identical habitat, roosting and foraging sources. I have addressed this matter in more detail in the appropriate assessment section of this report and I have responded to the recommendation of DAU that blasting and rock breaking at the site should be prohibited between October and March. The conclusions drawn therein in relation to European site special conservation interests are relevant to wintering wildfowl in Waterford harbour.

8.4.19. Regarding the HDD crossing at Campile river estuary this work will take place outside the peak season for wintering birds. The applicant notes that due to the value of adjoining habitats as well as visual screening of the HDD sites in the short-term nature of the works the impact on wintering birds will be temporary and imperceptible. I consider this is a reasonable conclusion to draw. I accept overall that the scale and temporary nature of the works when considered in combination with the duration of works and the avoidance of works in key areas during their bird wintering., It may be concluded that there would be no significant effect on bird populations using estuarine and marine habitats.

8.4.20. In addition to the mitigation measures relating to avoidance of the peak season for wintering birds the applicant states that vegetation should not be removed outside the breeding season and NRA guidance will be followed in relation to the protection of trees and hedges prior to and during construction. In addition, a full survey for evidence of barn owl occupation to ensure that no birds are nesting and, if necessary, to provide compensatory habitat is proposed. Subject to the implementation of these measures, I consider that the Board can be satisfied that there would be no significant residual impact on birds.

Mammals

8.4.21. In terms of the mammals present within the zone of influence of the proposed works and the protection afforded to these species I refer to the potential for impacts on bats and badgers. I separately consider otter under the appropriate assessment section of this report.

8.4.22. The EIAR reports on surveys undertaken to identify potential bat roosts. At the area close to the HDD crossing at Campile river estuary the masonry bridge and nearby mixed broadleaved/coniferous woodland including a number of large Scots Pine was surveyed and at Great Island an abandoned building in close proximity to the proposed converter station was surveyed. As reported in the EIAR the surveys demonstrate that no structures which have the potential to be of value as bat roosts will be affected by the proposed development.

8.4.23. The EIAR in assessing the impact on bats has given consideration to reduction of net feeding areas available. At the Great Island site and along short lengths of the proposed cable route there will be a requirement to remove immature woodland, scrub, hedgerows and tree lines. In the long term the impacts will be mitigated by the implementation of a comprehensive landscaping scheme particularly at the converter station site where 15,000 native mixed woodland trees are to be planted.

8.4.24. Impacts on bats may arise as a result of lighting at the HDD compounds. It is proposed to direct lighting away from woodland and treeline habitats, to minimise any temporary effects. At the converter station site there will be a requirement for external lighting but apart from necessary emergency lighting it is proposed to extinguish lights during hours of darkness.

8.4.25. Regarding mitigation measures for the protection of bats these are outlined in section 9.5.9 of chapter 9. The developer in accordance with relevant guidance will take all reasonable steps to ensure works do not harm individuals by altering working methods or timing to avoid bats. Measures relating to felling of trees are the particular focus of the mitigation measures as well as minimising light spillage. If bats were to be recorded roosting within the proposed works site work would be halted and specific measures implemented including where relevant seasonal restrictions and provision of replacement roosting habitat. A derogation licence from NPWS would also be obtained. Having regard to the above I consider that there would be

localised slight and long-term impacts on bats which would not significantly affect the overall populations in the area.

8.4.26. Within the woodland habitat at the HDD river crossing badger setts (a main sett and an active annex sett) were recorded. Due to the separation distances of over 50m it is concluded that the works would not have any effect on badger using those setts including for breeding. A very small area of potential badger feeding habitat will be temporarily impacted and this effect may be described as not significant. I consider that the conclusions presented by the applicant are reasonable and that the proposed works will not have significant effects on badgers apart from changes in feeding patterns which may arise during construction. This effect is predicted to be temporary and slight.

8.4.27. It may be concluded that there would be no significant adverse effects on bats or badgers.

Conclusion

8.4.28. In conclusion, I am satisfied that the proposed development and in particular the undertaking of works at Baginbun Beach, the converter station site and along the cable route will not give rise to any significant adverse effects on biodiversity by reason of direct or indirect effects on habitats or species.

8.5. Electromagnetic Fields

8.5.1. Observers have set out concerns relating to possible health and safety issues arising from electromagnetic fields. The observers reference the close proximity of houses to the proposed HVDC cables. Two observers for instance state that their houses are as close as 2.3m and 7m to the cable. The pattern of development in this area is such that similar separation between other residential properties and the route of the cable would not be uncommon.

8.5.2. The assessment by the applicant of this issue in chapter 15 of the EIAR notes that the closest house to the cable is 1 m from the centre of the cable circuit. The applicant's submission is that the static magnetic fields which can be expected on the surface level are well below the limits provided by the International Commission on Non-Ionising Radiation Protection (ICNIRP). It is also pointed out by the applicant that DC lines create a magnetic field that is very similar to the Earth's magnetic field.

In Ireland the static magnetic flux density associated with the Earth's magnetic field is about 49 micro Telsa.

8.5.3. The EMF report refers to guidelines for allowable levels and the report indicates that when operating under full load the cables will comply with the guidelines. The allowable level under the relevant standard as modified by the EU EMF recommendation is 40,000 micro Telsa and a level of 500 micro Telsa set for persons with active implanted medical devices such as pacemakers.

8.5.4. In terms of the predicted results arising from the HVDC cable at a point directly above the line, it will produce a magnetic field of 19 micro Telsa. The technical reports presented in Appendix 15.1 of the EIAR are based on the cables being 0.9 m below ground, which is stated to be the shallowest burial depth. The results show that the predicted levels are substantially below the lowest of the levels set in the EU recommendation. In terms of the validity of these results, I consider that there is no reason to doubt them and no evidence in submissions to undermine them.

8.5.5. In terms of the allowable levels of EMF the applicant points out that the ICNIRP limits adopted by the European Commission are for both public and occupational application. I consider that this addresses the point made by one observer who states that there is no reference in the EMF report to allowable levels for continuous exposure.

8.5.6. Regarding the suggestion that the cable depths be increased to at least 1.2 m to address EMF I consider that there is no justification for that proposal in the context where the exposure levels are predicted to be so low.

8.5.7. The observer has questioned what assurance or regulation we will have that the cables or power will not change over time and what exclusion zones will apply around the operating cables for future service providers to properties or sites? in the applicant's response it is noted that the Greenlink infrastructure would be a constraint in the same way as any other service located within the road. It will not sterilise the roadway from installation of other services or future maintenance and improvement. I accept this response.

8.5.8. I am satisfied that the proposed development has been properly assessed and that it will comply with the relevant standards, does not pose a threat to human health

including to the health of people resident very close to the cable and would not adversely impact on property development.

8.6. Community Gain

8.6.1. The applicant proposes two community gain measures:

- At Baginbun Beach provision of 55 car parking spaces along the access road.
- In Ramsgrange village provision of footpaths and street lighting.

8.6.2. The planning authority does not provide a specific response to these measures. The response which is set out in the report received is as follows:

> Wexford County Council note the proposals to provide some elements of community gain but would recommend that a one off payment of €200,000 be paid to the council to be managed and ring fenced for community development in the local area given the disruption to the wider area during construction.

8.6.3. My inspection of the landfall area took place at midday on a fine day in the month of April. At the time there was a cluster of cars parked close to the steps leading to the beach. The parking arrangements which presently exist would appear to me to be insufficient to meet the likely peak demand. The beach is an important amenity in the area and would draw people from some distance. For many people access by car is likely to be the only viable option.

8.6.4. While the Chief Executive's report does not comment on the proposed parking the applicant in appendix 3.1 indicates that the proposal emerged as a result of consultation with the Council. I consider in this context that the proposed community gain measure at Baginbun Beach is appropriate.

8.6.5. Ramsgrange village is the settlement which would be most impacted by traffic and general disruption during the construction phase. The applicant states that the potential for provision of community gain in the form of improvements to pedestrian amenity emerged during public consultation. In the interim an argument has been made that the entire area should be beneficiaries as a wide area is impacted.

8.6.6. As a remedy to redress the construction phase impacts it is reasonable that Ramsgrange village be targeted. However, I consider that the observers have made

a good point in relation to the widespread area affected. In particular I note that the burden of much of the construction traffic will affect the Great Island community. I note the comment that the community of Great Island would be most impacted and the suggestion of the establishment of a ring-fenced community fund for that area as well as some street lighting near Horeswood National School. I also consider that the village of Fethard on Sea which would appear to have businesses which would rely on tourists would be impacted indirectly.

8.6.7. Therefore, regarding the Council's suggestion for a once off payment of €200,000 for community development, I would support this measure. I have set out a condition below to this effect. The applicant has provided an estimate of €222,100 for the works at Baginbun Beach and Ramsgrange. That figure is not dissimilar to the amount suggested by the planning authority.

8.6.8. The observation of GSI suggests that some information panels be put in place at Baginbun Beach to highlight the County Geological Site at this location. I do not propose to make a recommendation to this effect. I consider that it is a small intervention which might be undertaken by Wexford County Council or other party. The applicant would appear to be willing to facilitate such a measure but has not proposed to implement the suggestion.

8.7. Conclusion

8.7.1. The proposed Greenlink Interconnector will be of key strategic importance by providing significant additional interconnection between Ireland and Great Britain and onwards to mainland Europe. It will provide additional transmission network capacity, deliver increases in efficiency and security of supply and will greatly assist the drive to reliance on renewable energies. The proposed development complies with international, national, regional and local policy provisions.

8.7.2. Having considered the major planning and issues in this case I am satisfied that the development would not give rise to unacceptable adverse landscape and visual, traffic, biodiversity or health impacts.

8.7.3. I conclude that the proposed development is in accordance with the proper planning and sustainable development of the area.

9.0 Environmental Impact Assessment

9.1. Introduction

9.1.1. The application submissions include an Environmental Impact Assessment Report entitled *Greenlink Environmental Impact Assessment Report – Ireland Onshore*. The document addresses the proposed development namely the onshore Ireland components of the overall Greenlink project. A copy of the EIAR relevant to Greenlink EIAR Marine – Ireland was also submitted. Where relevant I have had regard to that document. Two other EIARs have been prepared for the remainder of the overall Greenlink project. Each EIAR addresses the cumulative effects of the entire project.

9.1.2. This section of the report comprises an assessment of the likely significant effects of the proposed development. It addresses compliance with legislation, describes and assesses the likely significant direct and indirect effects of the development against the factors set out under Article 3(1) of the EIA Directive 2014/52/EU. It considers cumulative effects and interactions and the vulnerability of the proposed development to major accidents and disasters.

9.2. Compliance with Legislation

9.2.1. The legislation relevant for the purpose of considering whether the information contained in the EIAR is adequate is A94 of the Planning and Development Regulations 2001, as amended, and the provisions of A5 of the EIA Directive 2014.

9.2.2. It is the applicant's submission that there is no legal requirement for an EIA. The applicant states that planning officials of Wexford County Council advised that an EIAR should be submitted. This issue also arose during public consultation and members of the public were informed of the decision made to undertake a voluntary EIA in support of Greenlink. This was described as being in recognition of the length of the permitting process and the evolving interpretation of the EIA regulations in Ireland. The issue was discussed during the pre-application consultations and the applicant advised that this approach would negate the need for EIA screening.

9.2.3. The EIAR is in three separate documents. Volume 1 Part A comprises the non-technical summary. Volume 1 Part B comprises the Main chapters. Volume 2 comprises the appendices.

9.2.4. Following examination of these documents I consider that the EIAR identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the project on the following environmental factors:

(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;

(c) land, soil, water, air and climate;

(d) material assets, cultural heritage and the landscape

and equally considers the interaction between factors referred to in points (a) to (d).

9.2.5. In accordance with article 5 and Annex IV, the EIAR provides a description of the project comprising information on the site, design, size, characteristics and other relevant features. It also provides a description of the likely significant effects of the project on the environment and a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment.

9.2.6. The EIAR provides a description of the evidence used to identify and assess the significant effects on the environment. The EIAR provides an adequate description of baseline information used to identify and assess the significant effects on the environment. I consider that there is evidence of good knowledge of the local conditions and environmental receptors. The submitted detail of information in relation to the nature of the proposed works and the manner in which the construction will proceed provides a good basis for understanding and for assessment of likely significant impacts. Any difficulties which were encountered in compiling the required information are identified.

9.2.7. In relation to documentation I note the use of site-specific investigations and the availability and use of other high-quality data and reliance on and use of recognised guidance and assessment methodologies. I am satisfied that the EIAR has been prepared by competent experts.

9.2.8. My assessment below is based on the information provided by the applicant, including the EIAR and the submissions made in the course of the application.

9.2.9. I am satisfied that the information provided in the EIAR is sufficiently up-to-date and is adequate for the purposes of the environmental impact assessment to be undertaken.

9.3. Alternatives

9.3.1. Chapter 2 of the EIAR is devoted to the issue of alternatives considered.

9.3.2. The ‘do nothing’ alternative was ruled out as it would not address the current constraints on the export of electricity when the amount of renewable energy exceeds demand and on the import of electricity when demand exceeds the amount of renewable electricity generated.

9.3.3. The initial decisions relating to the option to provide a connection to Great Britain are described including with respect to environmental effects. The next consideration was the distance between the two markets and the suitability of existing infrastructure to which connections could be made. In Ireland Great Island has the advantage of having 3 no. 220 kV circuits converging as well as a number of 110 kV lines. It is a robust node in the south of the country. The location in Pembroke in Wales was similarly deemed to be a very robust node on that network. The Greenlink project links these points by the shortest feasible subsea cable route. All decisions took into account environmental effects of different options as set out in table in chapter 2.

9.3.4. At a more detailed level the consideration of the site for the converter station and tail station identified three possible plots of land close to the existing Great Island facility. Constraints included overhead power lines and gas pipeline routes. A plot of land to the south of the railway line was selected for reasons including proximity to the likely landfall and for landscape considerations.

9.3.5. The identification of the landfall site involved assessment of 10 potential locations. Early on the decision was made to discount a route up the estuary for reasons related to impacts on a European site and navigation. Following assessment of environmental effects, the options for landfall sites were reduced and then the site at Baginbun Beach was selected.

9.3.6. Baginbun Beach provided the shortest offshore route thereby resulting in least disturbance of offshore biodiversity and through use of HDD techniques avoidance of archaeology and cultural heritage was feasible. Cable route options between Baginbun Beach and the converter station site focused on the avoidance where possible of private lands and the use of the road network. A multi-criteria analysis undertaken of the possible routes is presented in chapter 2. Table 1.10 provides a summary including a comparison of environmental effects. Table 2.11 further assesses variations within the selected route between Baginbun Beach and Great Island.

9.3.7. Technological options for the interconnector and its configuration are described in section 2.7. The selection of HVDC was deemed preferable as a mechanism for transmitting electricity over long distances. It requires only two cables thus reducing the level of environmental impact from horizontal directional drilling and trenching. HVAC transmission would require electrical compensation involving installation of large shunt reactors and two of these would be offshore.

9.3.8. As part of the application details submitted two options for the converter station layout were presented and the worst-case assessment undertaken. In the original documentation it was stated that the successful contractor would choose its preferred configuration. That has now been amended in the applicant's cover letter accompanying the response to observations received by the Board on 30 April 2021 and only Alternative 1 is put forward for consideration by the Board. This option was described as having the greater landscape and visual effects.

9.3.9. Two options were considered for the tail station utilising either AIS or GIS technologies. GIS was selected on the basis of the smaller footprint and disturbance, as well as less construction activity and ultimately less visual impact.

9.3.10. The preferred option for cable installation is open cut except where that would cause too much disturbance in which case the alternative of HDD is proposed. That technology will be used at Baginbun Beach and at Campile river estuary crossing and mini HDD is the preferred option for crossing the transmission gas pipeline and Newtown / Kilmannock stream.

9.3.11. Car parking options with different configurations were agreed with Wexford County Council according to the EIAR and are described in section 2.9. The alternatives relating to community gain in Ramsgrange were also agreed.

9.3.12. There are alternatives relating to the delivery of abnormal loads which include potential use of Bellevue and Rosslare reports and loading onto an existing jetty at the Great Island site.

9.4. **Public participation.**

9.4.1. I have summarised earlier the submissions and observations received in response to this application. This section concerns the pre-application consultation.

9.4.2. In terms of the applicant's submission on the issue of public participation I refer to appendix 1 of the Planning Report, in particular the report entitled Consultation Report (Ireland). Section 1.3 identifies the consultation requirements and responsibilities which arise as a result of the project being designated as a project of common interest (PCI). The requirement emanating was to prepare a concept of public participation (CoPP) outlining how meaningful consultation would be delivered and this was approved by An Bord Pleanála in December 2019. The consultation report aims to demonstrate compliance with the CoPP, and it outlines the consultation strategy undertaken in Ireland. The consultation report is a requirement pursuant to article 9 (4) of the TEN-E Regulations. The applicant states that it has gone beyond the requirements of these regulations in the design and implementation of the consultation strategy.

9.4.3. In terms of the Greenlink team and resourcing of the consultation process the key representatives are available to respond detailed queries. Regarding the tools used and resources these include a project website, which is a requirement, public exhibitions, roundtable meetings, house visits, public notices and other. A public information leaflet which satisfies the requirements of Annex VI(5)(a) has been produced in four editions. The project website was set up in April 2016 and is stated to satisfy the requirements of Annex VI(5)(b) and Annex VI(6).

9.4.4. Apart from describing the public engagements undertaken the applicant provides information which demonstrates how such measures have influenced the proposed development. As an example, the applicant describes consideration of plans for

cable routing and installation through the village of Ramsgrange and the measures taken to avoid direct impacts at the beach and to avoid the peak tourist season. The report addresses the consultations which took place with sectoral interests including agencies involved in navigation, fisheries protection, government departments and relevant NGOs.

9.4.5. Regarding the undertaking of a voluntary EIA the public were informed of this decision in January 2019. The preferred cable route and converter station site and selected offshore cable route were presented. In March 2019 a public exhibition was held and in response to earlier public queries an expert in EMF was made available to discuss concerns in this respect. Further consultation meetings were held in three village locations in December 2019. Face-to-face meetings and public events were suspended in March 2020, but the project community liaison consultant remains available and dialogue by way of email and updating of the website continues.

9.4.6. In the preparation of my report I have had regard to the relevant submissions relating to the views expressed during consultation, including information driving from the pre-application process. The applicant indicates that engagement with the local community will continue and will include economic measures such as maximising the use of locally based contractors and personnel, which will be a commitment by the main contractor. Engagement with the community will continue also in the area of traffic management.

9.4.7. I consider that it is clearly demonstrated that all relevant agencies and sectoral interest groups and individual members of the public as well as elected representatives were afforded a number of opportunities to be informed of the project and to report their views. I consider that there is evidence that the issues of concern identified were responded to by the applicant and taken into account in the making of this application.

9.5. Population and Human Health

9.5.1. In consideration of population and human health under the EIA section below I present an overview of the existing environment, the impacts arising and relevant mitigation. Population and human health are assessed in chapter 15 of the EIAR.

Existing Environment

9.5.2. The information presented in the EIAR is that the population is gradually declining in four of the five electoral divisions in which the proposed development would be located. Population increases are recorded in the Kilmokea ED, which is the location of the converter station and tail station. While the socio-economic profile of the local population is generally similar to that of the wider county there are significantly higher proportions engaged in agriculture, forestry and fishing and construction industries. There is also generally higher proportion of retired people in the local population.

9.5.3. The onshore cable route passes by agricultural land and rural areas. The largest residential area through which it passes is Ramsgrange where there are various community, recreational and other facilities. It is a notable feature of the area that houses are located close to the road and there are several residential properties located close to the cable route. The landfall at Baginbun Beach provides for various recreational activities and as a destination for local residents and also for tourists.

Potential Impacts

9.5.4. In the construction phase dust, noise and vibration emissions have the potential to affect amenity, business activities, population and human health. Potential effects on the local transport network will disrupt vehicle, pedestrian and cyclist movements and give rise to short-term effects on residents and road users. The avoidance of works at the landfall and on roads during July and August avoids disturbance during the peak tourist season. Similarly, disturbance to amenities in Dunbrody close to the Campile river crossing would be outside the peak season.

9.5.5. Over the 23km of HVDC cable there would be a number of road closures. Access to local residents, shops and community facilities will be maintained. The potential effect on accessibility in Ramsgrange village is a slight, negative temporary effect.

9.5.6. The provision of 54 parking spaces at Baginbun Beach once completed will have a permanent positive effect on beach amenity.

9.5.7. Employment of 250 people during the construction phase and investment in materials and services will result in positive short-term effects on the local economy. There is potential for short-term disturbance to tourists in the form of noise and air emissions and possible visual effects and there will be an effect on recreational

amenity. This disturbance is assessed as a slight negative and temporary impact for the duration of the construction works.

9.5.8. Noise and vibration which could give rise to potential effects on human health during construction. Dust from construction related activities would be expected to have a short-term, slight negative effect. Due to the undertaking of the construction of the cable the potential for effects along the onshore cable route is limited to short durations.

9.5.9. At the Great Island site and throughout there will be a noticeable increase in traffic volumes. The absolute volumes of HGV traffic are not high but are significant in the context of the increase and having regard to the use of roads including in association with schools.

9.5.10. The undertaking of works during the construction phase in compliance with relevant safety, health and welfare regulations will minimise the likelihood of any impacts in this respect. I separately address any issues related to unplanned events including major accidents and disasters including in the context of the adjacent COMAH site.

9.5.11. Observers have raised concerns relating to EMF. I have addressed this separately in the planning assessment section of my report above. I am satisfied having regard to the technical information presented that there is no cause for any concern relating to potential impacts on the population and human health. The levels of EMF to which the resident population would be exposed are greatly below the relevant thresholds.

Mitigation

9.5.12. The implementation of a CEMP is the overarching mitigation measure which will address air quality, noise and vibration which could give rise to potential effects on human health during construction. Subject to implementation of this measure and compliance with the conditions of any permission, it can be anticipated that there will be no significant effect on human health as a result of the construction of the proposed development. Any increase in air pollutant concentration would not exceed air quality standards. Noise levels will not exceed the daytime criteria and will be temporary and discontinuous along the cable route. No exceedances of noise criteria are predicted during construction of the converter station site. Vibration limits will not exceed the relevant standard.

9.5.13. The CEMP will incorporate a Construction Traffic Management Plan which will contain detailed and robust measures. I consider that this measure is sufficient to mitigate impacts and avoid adverse effects on the population and human health. The measures to avoid works in certain months is also substantial mitigation which will benefit recreational users and avoid disruption in the tourist season.

Residual Impacts

9.5.14. In the construction phase there will be short-term adverse effects on population and human health from increased dust, noise and traffic. The relevant standards for air pollution, noise and vibration are set taking into account the possible effects on human health. Subject to mitigation as described there is no likelihood that the relevant standards will be exceeded. Those measures include installation of acoustic barriers where required and traffic management measures.

9.5.15. The residual effects on population and human health would be short-term temporary disruptions to journey amenity and access for local roads in the vicinity of the cable route works. It may also be concluded that the employment and economic spin-off during construction would be a short-term positive impact. The community gain proposals would result in moderate residual permanent effects in the local area. The delivery of the project will result in significant long-term positive effects to the population.

Cumulative impacts

9.5.16. Together all elements of the Greenlink project will result in cumulative effects which will be positive in terms of the socio-economic benefits on population and human health from the operation of the project.

9.5.17. Cumulative effects related to other projects are considered in the EIAR. The identified projects are the Great Island Kilkenny 110 KV line Uprate project and the Great Island ESS. I consider that the conclusion in relation to the Great Island – Kilkenny 110 kV line operate project that the works would not adversely affect population and human beings is reasonable as it effectively consists of replacement works. The Great Island ESS is considered to have a positive effect in terms of the transition to a low carbon economy. The consequences are therefore positive in terms of avoidance of air pollution which might affect human health. I consider that can be accepted also.

9.5.18. In terms of overlaps during the construction phase there is little geographic overlap with the 110 kV project. There is potential for cumulative effects if the construction of the ESS is concurrent with the majority of works on the site of the converter station. Noisy construction activities would be planned and phased in that case to ensure that relevant noise limits are achieved and thereby avoid cumulative negative noise impacts. Due to the 450m separation and the suggested measures, no significant cumulative effects on population and human health are likely.

9.5.19. Cumulative effects from EMF in the operation phase related to the 110kV Uprate project and the ESS could in combination give rise to potential impacts on human health. However, I have previously assessed that the proposed development would give rise to very low levels of electromagnetic radiation and for this reason significant cumulative effects would be highly unlikely. In addition, there are no residents living near the two projects and therefore there is no potential for cumulative negative impact on human health. I have separately addressed this matter in relation to the HVDC cable and there are no potential cumulative effects as there are no similar developments near the cable or near human beings.

Transboundary Effects

9.5.20. It is considered that there are no negative transboundary effects on population and human health. Any transboundary effects will be positive and relate to the socio-economic effects arising from the improved energy system and the environmental and health benefits resulting from supporting the transition to renewable energy.

Conclusion

9.5.21. I have taken into account the contents of the EIAR and the submissions on file and on that basis I am satisfied that potential effects on population and human health would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions.

9.5.22. I am satisfied that the proposed development would not have any unacceptable direct, indirect, cumulative or transboundary effects on population or human health.

9.5.23. I conclude that following mitigation the significant effects on Population and Human Health are as described below.

Positive long-term transboundary impacts to population and human health through provision of the interconnector which will support renewable energies and provide for security and continuity of electricity supply.

Positive long-term impacts through the provision of community gain measures.

Short-term negative impacts on population and human health as a result of noise and road closures.

9.6. Biodiversity

9.6.1. There is an overlap between this section, the Appropriate Assessment section and my consideration of biodiversity under the planning assessment above. In considering the topic of biodiversity under the EIA section below I present an overview of the existing environment, the likely significant impacts arising and relevant mitigation. The relevant chapter of the EIAR is chapter 9 and there are various supporting documentation including in appendices. The information presented is based on a number of surveys which I have considered elsewhere and deemed to be adequate. In particular I note the frequency and number of surveys undertaken of wintering birds.

Existing Environment

9.6.2. This rural coastal area contains a range of habitats and species of varying significance in terms of its value for biodiversity. The wider area contains important populations of overwintering waders and waterfowl including within European sites and an Important Bird and Biodiversity area at Bannow Bay. The Waterford harbour area is highlighted by NPWS as being of particular relevance in terms of the population of shoreline/estuarine birds which use the extensive mudflats at this location. These and the associated pNHA border the Great Island power plant lands and extent past the site of the converter station and into the Campile river crossing. The estuary at Camile river crossing is noteworthy for the presence of bats, otter, badger and birds as well as woodlands with mature trees. There is a main sett and an annex sett close to the river crossing. No bat roosts have been identified either at this location or at buildings at Great Island. At Baginbun Beach the cliff and beach

habitats are of international importance and the area is used by wintering birds and otter.

9.6.3. Fish which are present includes migratory species which are protected and fish such as stickleback which may be of value as prey.

9.6.4. Small pockets of invasive species including rhododendron, three-cornered leek and Japanese knotweed are found close to the works area and winter heliotrope is found throughout the road verges and has not yet been mapped.

Potential Impacts

9.6.5. At the site of the converter station there will be significant clearance of scrub/woodland and a requirement for rock breaking and blasting which could impact birds by habitat loss and noise and disturbance. The Great Island site works will take place close to the mud flats in Waterford Harbour, the importance of which has been referenced by NPWS. The potential for impacts has been subject of an assessment by the applicant of the species using these areas and the known response of birds to noise.

9.6.6. The use of HDD drilling at Baginbun Beach and Campile river estuary crossing avoids direct impacts on cliff and beach habitats and birds and otter but there is potential for noise and disturbance at this location. Habitats which would be impacted by the laying of the cable and the construction compounds are of limited local ecological value.

9.6.7. Potential for impacts on bats arise including related to the felling of mature trees and lighting of the completed converter station. Potential impacts on badger arise in the construction phase at Campile river estuary and relate to possible direct impacts and noise and lighting.

9.6.8. Water quality impacts could affect fish which as well as being of high ecological value can be of importance as prey for otter. Potential impacts on fish and aquatic ecology arise at Newtown stream and Campile river estuary in particular.

9.6.9. Due to the nature of the project and the presence of various invasive species there is potential for impacts on habitats.

Mitigation

9.6.10. The implementation of noise mitigation measures during construction at the converter station site will be within levels to avoid significant impacts on birds using the mud flats.

9.6.11. The main mitigation measure relating to trees and wood lands is avoidance. A felling licence will be obtained from DAFM prior to trees being felled or removed. Where this is not possible such as at the converter station site and removal of short sections of hedgerow along the cable route, replanting is proposed. At the converter station site an extensive area of wooded berm is to be provided.

9.6.12. Bat mitigation measures are set out in section 9.5.9 and include measures to avoid felling of mature trees and the timing of works as well as operational phase lighting requirements. . Badger mitigation measures include the setting back of machinery/works to avoid impacts on known badger setts during the breeding season. Works close to badger setts or removal of badgers will be under the supervision of a qualified ecologist under licence from NPWS. In the unlikely event that destruction of a badger sett is required this would be carried out under licence and an alternative sett would be required.

9.6.13. Extensive water quality mitigation measures are described in the CEMP. The Campile river estuary would be crossed at a depth of 10 m below the river. An open cut crossing not been ruled out at Newtown stream and the works methodology is described.

9.6.14. Regarding invasive species NPWS has called for revisions to the applicant's plans for management and in particular for more direct intervention rather than avoidance and for the updating of surveys closer to the works date. One of the invasive species winter heliotrope is described as ubiquitous but otherwise the species present are in isolated locations. I consider that the applicant has made considerable progress in survey work and in setting out appropriate measures. The applicant's response to NPWS is to focus on avoidance and the future implementation of more detailed management in agreement with the planning authority. I am satisfied that the mitigation proposed can be successfully implemented.

Residual Impacts

9.6.15. In overall terms there will be a loss of common terrestrial habitats, but high-value habitats have been avoided at the design stage. Therefore, there is no significant effect due to habitat fragmentation and no loss of rare or uncommon plant species.

9.6.16. The removal of scrub/woodland at the converter station site is assessed by the applicant as a long-term localised, imperceptible impact. It will be mitigated in time and maturity of the planting proposed at the site. I consider that it is reasonable to conclude that there is a short-term adverse slight impact on biodiversity.

9.6.17. Due to the use of HDD methodology at the Campile river estuary and at Baginbun Beach significant effects on these habitats and dependent species are avoided and there are no residual impacts. The timing of works avoids effects on wintering birds.

9.6.18. Regarding the bat and badger mitigation measures NPWS has not raised any concerns relating to these proposals and the licensing process would apply. There are no significant residual effects on mammals.

9.6.19. Through the use of appropriate water quality protection measures and appropriate measures for stream crossings there would be no significant effect on aquatic habitats, migratory fish or fish which are prey for otter.

9.6.20. Subject to implementation of an updated Invasive Species Management Plan there is no likelihood of any significant residual effects relating to the spread of invasive species.

Cumulative impacts

9.6.21. The potential for cumulative effects arises at the Great Island site in the event of the ESS and the 110 kV upgrade being undertaken at the same time. There is limited geographic overlap between the Greenlink project and the 110 kV project which would limit any cumulative effects. The site of the ESS however is immediately adjacent to an area of significant works associated with the construction of the converter station and tail station. The applicant is committed that in the event of overlap in the construction of these projects the works would be planned in phase to ensure that the noise predictions are not exceeded.

9.6.22. There is no potential for cumulative effects related to the Greenlink offshore development.

Transboundary

9.6.23. There is no likelihood of any significant transboundary effects on biodiversity. The Welsh government has highlighted the potential for detonating unexploded ordnance and requests that the imposition of suitable mitigation be included in any consent granted. I consider that this request does not have relevance to the Ireland onshore Greenlink section of the project which is subject of this application.

Conclusion

9.6.24. I have taken into account the contents of the EIAR and the submissions on file , particularly the submission of NPWS and I am satisfied that potential effects on biodiversity would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions.

9.6.25. I am satisfied that the proposed development would not have any unacceptable direct, indirect, cumulative or transboundary effects on biodiversity.

9.6.26. I conclude that following mitigation the significant effects on Biodiversity are as described below.

Short-term negative impacts on biodiversity as a result of the removal of scrub woodland at the site of the proposed converter station.

9.7. Land, Soils, Geology and Hydrogeology

9.7.1. These environmental topics are addressed in Chapter 12 of the EIAR.

Existing Environment

9.7.2. The baseline environment was assessed with site-specific investigations including boreholes and geophysical investigation. The Conceptual Site Model prepared is summarised in table 12.12. The converter station site topography varies between 0m and 30 m OD. That site and much of the northern part of the overall site overlie a regional aquifer. At Campile river estuary crossing there is estuarine deposits and glacial till over bedrock, with an approximate soil and subsoil depth of 9 m. At the landfall the ground conditions comprise glacial tills over interbedded mud stones and sand silt stones.

9.7.3. The features ranked of most importance comprise agricultural soil across the whole cable route and the regionally important aquifer. The bedrock/aggregate resources at

Great Island converter station are deemed to be uneconomic for extraction and therefore attributed a moderate ranking of importance. The marine sediments at the landfall are small in volume and of low ranking.

9.7.4. There is no evidence of unstable ground or contaminated lands. In some areas including at the converter station and cable sites groundwater vulnerability is high to moderate and at the Lewistown and Baginbun Beach compounds is high/extreme. Wells close to the cable route are in the region of 750 m away. There are industrial boreholes at the Power Station site.

9.7.5. The EIAR in section 12.3.3.8 indicates the cable route passes by a county geological site Booley Bay and Baginbun Head is attributed the same status. GSI notes the significance of these sites and other CGS sites and that all geological heritage sites are categorised as CGS pending any further NHA designation by NPWS.

Potential Impacts

9.7.6. The potential effects at the Great Island site include the loss of agricultural land and removal of 23,000 m^3 of rock which is an uneconomic aggregate. The converter station and tail station will be on a 2-hectare level platform which will be formed from an area with the existing site levels between 21.5 and 26 m OD. Precast piles will penetrate as far as the weathered top of the bedrock.

9.7.7. Along the cable route and the compound at Lewistown there is a loss of agricultural land which is a slight impact. The impact on bedrock aquifer productivity due to the drilling through a regionally important aquifer at the Campile river estuary crossing is a slight effect. Due to the depth of the cable trench and the methodology impacts on groundwater quality or groundwater dependent ecosystems will be imperceptible.

9.7.8. Works at Baginbun Bay where the high-voltage direct current cable will come ashore has the potential to impact on the Baginbun Head CGS site, as noted by GSI. In the response to this submission the applicant notes that a potential effect is recognised in the description of the baseline environment provided. It is noted that the integrity of the CGS will be preserved as none of the beach exposures will be directly affected by the HDD works and no site works are to be undertaken on Baginbun Beach. Regarding the collection of data for the future the applicant has agreed to facilitate the request of GSI.

9.7.9. At Baginbun Beach in general including at the construction compound impacts are of similar character to those described at other locations and of significance slight/imperceptible.

9.7.10. It is considered that the operational phase will have an overall neutral long-term effect on soils and geology. Due to the separation distance between the cables and the cliffs there would be no effects related to coastal erosion.

Mitigation

9.7.11. The relevant mitigation measures address the potential construction effects and include regulatory compliance with the requirements of statutory bodies and completion of the construction in accordance with the CEMP. In addition, measures are set out to contain any hotspots of contamination which might be encountered and to ensure no cross contamination.

9.7.12. Potential soil and water pollution will be minimised by implementation of best practice including bunding for oil containers, well waters and dust suppression as well as regular plant maintenance. The CIRIA guidance has been considered in the preparation of the CEMP. A contingency plan for pollution emergencies will be developed. Implementation of the CEMP will be monitored.

Residual Impacts

9.7.13. Subject to the implementation of the mitigation measures there will be no significant residual effects on land, soils, geology and hydrogeology.

Cumulative

9.7.14. The projects relevant in terms of the potential for cumulative effects on land, soils, geology and hydrogeology are the 110 kV line Uprate project and the Great Island ESS. The EIAR also takes into account the existing development at Great Island. The cumulative loss of agricultural land and overburden will be significant in the immediate local area. The impact on the bedrock aquifer in combination with existing and planned development is at most of moderate significance. No cumulative effect on groundwater abstraction is anticipated.

Transboundary Effects

9.7.15. No transboundary effects are predicted.

Conclusion

9.7.16. I have taken into account the contents of the EIAR and the submissions on file and on that basis I am satisfied that potential effects on Land, Soils, Geology and Hydrogeology would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions.

9.7.17. I am satisfied that the proposed development would not have any unacceptable direct, indirect, cumulative or transboundary effects on land, soils, geology and hydrogeology.

9.8. Hydrology

Existing Environment

9.8.1. The site falls within two catchment areas Ballyteigue-Bannon catchment and the Barrow catchment. Baginbun Beach is surrounded by the Celtic Sea. The proposed converter station site is close to the River Suir / Barrow estuary. Several streams and rivers cross the onshore cable route. In terms of the surface water features which will be subject to potential impact Newtown / Kilmannock Stream will be crossed by mini HDD or possibly by open cut and the Campile river by HDD. The River Suir / Barrow Nore estuary is assigned an intermediate status by the EPA.

9.8.2. Newtown Stream is within a drainage district defended by two networks of embankments which protect the land from coastal inundation. Part of the cable route passes through the drainage district. The converter station site is located adjacent the drainage district and both it and the landfall site are not at risk of flooding.

Potential Impacts

9.8.3. There is potential for adverse water quality effects arising from spillages of substances utilised as part of the construction and from excessive siltation entering the watercourse. In the unlikely event that Newtown stream is crossed by open trench crossing potential release of silt into the water courses could impact fishery sensitive streams.

9.8.4. Apart from standard water quality effects which might be associated with any form of construction project, the applicant describes the potential for bentonite releases

associated with the HDD works. The benign nature of the material notwithstanding there is a risk to water quality and the environment if such occurred. The HDD will have 6m of stiff clay and 10m of rock overlying it, which is more than sufficient to avoid risk of drilling fluid breakout.

9.8.5. In general watercourse crossings along the cable route utilise existing bridge structures and would not impact on the conveyancing or floodplains. Some of the river crossings are in areas which are at risk of flooding. The launch and reception pits for the HDD at the Campile river are outside the flood risk area.

9.8.6. In the operational phase potential effects on hydrology relate to maintenance of the proposed development and contamination by hydrocarbons, concrete/cementitious products and faecal coliforms. Fire suppression systems in the converter station will be dry and do not give rise to any risk of pollution from uncontrolled fire water discharge. Stormwater discharge will be attenuated to greenfield rates.

Mitigation

9.8.7. Mitigation measures include the measures described above in relation to land, soils geology and hydrogeology. The primary measures are the CEMP, which is a live document and the Emergency Incident Response Plan. Appropriate bodies will be notified in the event of spillage and/or pollution of a watercourse. All discharges will comply with the relevant surface water regulations. Specific measures will be implemented at the construction compounds, at the onshore cable route and converter station site.

9.8.8. Surface water drainage from the converter station site will be treated by oil separator facilities. Treated water will discharge directly to the surface water drainage system connecting to the local watercourse.

9.8.9. Detailed arrangements are set out in relation to HDD controls on drilling fluid and other matters related to the works at the Campile river crossing.

9.8.10. If the crossing of Newtown river is by open cut methodology, there would be a requirement for temporary damning and for over pumping.

9.8.11. Foul drainage at the construction compounds will be tankered off site to license disposal facilities. Best practice construction measures will apply in relation to the

siting of construction compounds, storage locations, the undertaking of works in the context of the potential for flood risk.

9.8.12. Operational phase mitigation measures at the converter station site relate to the surface water drainage and foul water services (portable welfare units) and storm water attenuation.

9.8.13. Included in the CEMP are monitoring measures which would be relevant to working in adverse weather conditions which could give rise to surface water quality effects.

Residual Impacts

9.8.14. No significant residual effects on water and hydrology are envisaged in the construction, operation or decommissioning phases.

Cumulative

9.8.15. In the Offshore EIAR it is noted that the HDD at the landfall site may result in a tiny imperceptible breakout to the coastal waters.

9.8.16. The possible upgrade works by Irish Water in Ramsgrange which were mentioned during public consultation do not appear to have been committed and there appears to be no likelihood of temporal overlap with the proposed development.

9.8.17. No significant cumulative effects on water and hydrology are envisaged in the construction, operation or decommissioning phases.

Transboundary Effects

9.8.18. No transboundary effects are predicted.

Conclusion

9.8.19. I have taken into account the contents of the EIAR and the submissions on file and on that basis I am satisfied that potential effects on hydrology would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions.

9.8.20. I am satisfied that the proposed development would not have any unacceptable direct, indirect, cumulative or transboundary effects on hydrology.

9.9. Air and Climate

9.9.1. The environmental topics of air and climate are addressed in Chapter 7 of the EIAR. The assessment utilises recognised methodology and assesses the effects relative to standard air quality criteria. In accordance with the TII guidelines emissions from construction vehicles are not modelled as the threshold of over 10% increase in AADT flows near sensitive receptors on local roads is not reached, except for short periods.

Existing Environment

9.9.2. Local air quality is assessed based on the location of the site in Zone D. The average concentration of monitored pollutants is well below the air quality standard limits. Regarding climate the current predictions are that Ireland will exceed its greenhouse gas emissions reduction targets for certain sectors including electricity.

Potential Impacts

9.9.3. Dust and exhaust emissions are the primary air quality issues associated with the construction phase. Significant dust emissions will only arise in dry weather and have potential to result in soiling effects within 50m and PM_{10} vegetation effects within 15m. These effects on residential and other receptors along the route of the onshore cable are noted. Air emissions from exhausts of construction machinery and haulage trucks are likely to give rise to short-term increases in concentrations of a NO_x, SO_2 and particulates. The predicted levels of emissions are considerably below the air quality standards. The predicted emissions increase in air pollutants associated with increased traffic is negligible, in the region of 2% along the R733 for example. CO_2 emissions predicted as a result of the construction phase are not considered significant. The effect on biodiversity is not expected to be significant. Short-term increases in background levels of relevant parameters would not result on impacts on human health as the standards are set for the protection of health.

9.9.4. In the operational phase there will be no routine process emissions. A standby generator is the only potential significant source of emissions. Traffic in the operational period will also be of minimal significance. At two locations in the converter station sulphur hexafluoride gas will be used and stored. This is an extremely potent greenhouse gas.

Mitigation

9.9.5. Dust deposition measures will be undertaken throughout the development and are presented in the EIAR and CEMP. The latter will also include a construction traffic management plan component. The types of measures involved are standard best practice.

9.9.6. Strict controls will be established to ensure best industry practice in the management, reporting, monitoring and controls of sulphur hexafluoride.

Residual Impacts

9.9.7. There will be no adverse residual effects related to elevated air emissions during construction or operation or decommissioning. There would be no breaches of the air quality standards.

9.9.8. The interconnector has the potential to save 59 million tonnes of carbon dioxide emissions over its 40-year lifespan by enabling export and import of electricity generated by renewables. It will result in significant long-term beneficial effects on climate due to reduction in greenhouse gas emissions associated with fossil fuel generation.

9.9.9. The replacement of fossil fuel generation with renewables will result in significant long-term positive effects on air quality, biodiversity, population and human health.

Cumulative

9.9.10. It is not anticipated that there would be a cumulative inter-project effect on air quality during construction. The only location at which this would arise is the HDD works at Baginbun Beach and a minimal time overlap between the two activities is anticipated.

9.9.11. The construction of the proposed development could give rise to cumulative effects on air quality and climate with the Great Island – Kilkenny 110 kV Uprate Project and the Great Island Energy Storage System. There are very limited construction works associated with Great Island – Kilkenny 110 kV Uprate Project in the area close to the proposed development. Similarly, the construction activities associated with Great Island Energy Storage System are not significant. Even in the event of simultaneous construction of the three projects it is considered there would not be an exceedances of air quality standards. The level of greenhouse gas generated by the

three projects will be small scale and of short duration. In operation the Great Island Energy Storage System would have a storage capacity of 500 GWh. Together with Greenlink this would have positive climate effects and beneficial effect on air quality.

Transboundary Effects

9.9.12. No adverse transboundary effects are predicted. There would be significant positive transboundary effects from the operation of the overall project.

Conclusion

9.9.13. I have taken into account the contents of the EIAR and the submissions on file and on that basis I am satisfied that potential effects on air quality and climate would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions.

9.9.14. I am satisfied that the proposed development would not have any unacceptable direct, indirect, cumulative or transboundary effects on air quality and climate.

9.9.15. I conclude that following mitigation the significant effects on Air and Climate are as described below.

> Positive long-term transboundary impacts to air and climate through provision of the interconnector which will support renewable energies and provide for security and continuity of electricity supply.
>
> Significant long-term beneficial effects on climate due to reduction in greenhouse gas emissions associated with fossil fuel generation.
>
> The replacement of fossil fuel generation with renewables will result in significant long-term positive effects on air quality, biodiversity, population and human health.

9.10. Noise and vibration

9.10.1. The assessment of noise and vibration follows relevant guidance and legislation including TII and British standard guidance and has regard to EPA guidance for the operational phase in addition. There is no requirement for an EPA licence. Baseline noise environment assessment included undertaking of surveys at sensitive

locations and consultation of noise data associated with the existing power plant. This included attended noise measurements.

Existing Environment

9.10.2. All elements of the proposed development are located in rural areas with low ambient noise levels. Sensitive receptors are 450m or more from the proposed converter station. 250 residences are close to the cable route which also traverses a village and areas of importance for amenity. There is a dwellinghouse 100 m from the HDD works at Campile river and 150 m from the planned drilling at Baginbun Beach.

9.10.3. Baseline noise levels for the representative noise sensitive locations are described in table 8.10. The dominant noise sources are typical of a rural area with the exception of survey location NML1 where the dominant noise source includes the SSE power station.

Potential Impacts

9.10.4. The highest potential noise and vibration impacts are associated with site preparation works at the converter station and tail station site. The closest receptor is 450m away and no exceedances of the 65 dB(A) criterion are predicted. This assessment has taken into account the normal construction activities as well as ground-breaking/rock breaking and piling which will be required.

9.10.5. Along the cable route the excavation and joint bay activities will contribute to predicted noise levels. The HDD activities are of relatively long duration but relatively lower noise levels. Even in the absence of hoarding the daytime limits at the nearest house close to the Campile river crossing will be complied with. Temporary negative impacts would be experienced in the unlikely event that drilling was carried out at night-time.

9.10.6. At Baginbun Beach the HDD works will be a 24-hour operation which could give rise to significant negative impacts at the closest receptor. Subject to the use of hoarding close to the HDD works at Baginbun Beach and Campile daytime and evening noise limits will be complied with. At Baginbun Beach it is anticipated there will be slight temporary negative impacts at night-time at the closest receptor.

9.10.7. At the converter station site, the rock breaking and blasting is assessed as being below levels which would affect residential properties. Along the cable route the use of vibratory roller compaction close to residential properties is assessed as being well below the level likely to give rise to complaints.

9.10.8. Predicted construction noise along the cable route will exceed the daytime 65 dB_{Laeq}.

9.10.9. There is potential for construction activities at Great Island and Campile river to affect wildlife receptors. The assessment of the effect on wintering birds using the mudflats near Great Island and the prohibition on HDD at Campile between October and March have been assessed under biodiversity.

9.10.10. There is potential for noise and vibration effects associated with traffic along a local road and a section of the R733 where the largest percentage increases in traffic are predicted. There are 86 residential receptors along this route. The temporary increase in traffic noise will be noticeable at these locations. Vibration associated with construction traffic movements is not predicted to exceed the level at which complaints would be anticipated.

9.10.11. In the operational phase the converter station and tail station which will operate full-time could give rise to significant noise levels. A noise propagation modelling exercise was undertaken. The identified receptors include houses to the north and at Cheekpoint to the south-west. At some locations the worst case predicted change is an increase of 5dB(A). While this would be noticeable and is assessed as a long-term slight negative impact, at this receptor and all others there is no exceedances of the EPA guidelines.

Mitigation

9.10.12. Specific noise abatement measures will be undertaken to comply with the relevant recommendations of BS 5228 – 1. The specific measures set out in section 8.5.1.1 include measures relating to the operation and location of equipment, the provision of acoustic barriers around construction works to minimise the effects of noise generating activities in the vicinity of sensitive locations, hours of working which in general will not include evening or night.

9.10.13. Notable in addition is the preparation of a Community Liaison Plan to ensure that any issues arising are addressed. At locations where significant temporary noise effects are predicted during cable route excavation specific measures including

temporary acoustic screening and discretionary precondition surveys will be developed and implemented by the contractor.

9.10.14. Assessment of potential peak particle velocity effects associated with rock removal and other activities close to the gas transmission pipeline are proposed as well as adherence to the GNI Code of Practice.

9.10.15. Specific measures are set out to minimise impulsive noise and vibration associated with the driving of precast piles.

9.10.16. The key operational mitigations are the enclosure of key noise emitting equipment and the placing of particular items of plant at the converter station within a building, which limits noise breakout.

9.10.17. Monitoring will be undertaken at sensitive receptors to demonstrate effectiveness of the mitigation measures and compliance with the limit values and to put in place alternative methodologies if necessary. Vibration monitoring will take place at the nearest sensitive receptors to the site to confirm that limits are being complied with. No operational monitoring is proposed.

Residual Impacts

9.10.18. There will be temporary locally significant noise effects at residences adjacent the cable route, which will be of short duration. The operation of the development will result in a slight to moderate negative effect at the closest receptor but will remain within the EPA limits.

Cumulative

9.10.19. It is not anticipated that there would be a cumulative inter-project effect on noise and vibration.

9.10.20. The construction of the proposed development could give rise to cumulative effects on noise and vibration with the Great Island – Kilkenny 110 KV Uprate Project and the Great Island Energy Storage System. There are very limited construction works associated with Great Island – Kilkenny 110 KV Uprate Project in the area close to the proposed development. Similarly, the construction activities associated with Great Island Energy Storage System are not significant.

9.10.21. In the event of simultaneous construction, the applicant has given a commitment to planning and phasing to ensure that relevant noise limits are adhered to. No cumulative vibration effects are anticipated.

Transboundary Effects

9.10.22. No transboundary noise or vibration effects are predicted.

Conclusion

9.10.23. I have taken into account the contents of the EIAR and the submissions on file and on that basis I am satisfied that potential effects on noise and vibration would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions.

9.10.24. I am satisfied that the proposed development would not have any unacceptable direct, indirect, cumulative or transboundary effects on noise and vibration.

9.10.25. I conclude that following mitigation the significant effects on Noise and Vibration are as described below.

9.10.26. Temporary significant noise effects on receptors adjacent to the cable route.

9.11. Archaeology, Architectural and Cultural Heritage

9.11.1. These environmental topics are assessed in chapter 10 of the EIAR. It reports on the full suite of architectural, archaeological and cultural heritage resources in the area. I focus below on the existing environment as relevant to the proposed development.

Existing Environment

9.11.2. The extensive site has a long history of occupation and extensive maritime connections which is reflected in visible monuments as well as subsurface archaeology.

9.11.3. Baginbun Beach was the site of an Anglo-Norman invasion in 1169 and an earthworks and battlefield are on a promontory over 70m south of the proposed landfall site.

9.11.4. A fortified church and graveyard in Templetown is close to the proposed cable route. There may be the remains of a deserted mediaeval village in this area also.

9.11.5. A fifteenth century tower house known as Kilcloggan is to the east of the cable route and the defined archaeological constraint zone adjoins the road where the cable route is to be installed.

9.11.6. In the vicinity of Dunbrody Abbey there will be works associated with the cable laying and the Campile river crossing. This sixteenth century fortified house is enclosed by a bawn wall and nearby is a mediaeval parish church and graveyard and other features.

9.11.7. The EIAR in section 10.4.2.5 reports on the presence of archaeological complexes at Great Island, which will not be impacted by the development. The field of the construction compound and cable contractor compound were inspected and there are no surface anomalies to suggest archaeological sites.

9.11.8. The cable route will pass under or close to 4 no. protected structures. Ramsgrange churches and graveyard include a Pugin design church which is a protected structure, but the cable is 30m from the site of the church. There is a Martello tower at Baginbun Head which is above the cable landfall location. Bridges which are used as cable crossing points are not of architectural merit in general. Dunbrody Bridge and Dunbrody railway bridge are close to the Campile river crossing are listed on the NIAH and will not be directly impacted.

Potential Impacts

9.11.9. The potential effects include effects on the archaeological landscape and on underwater archaeology. The submission of DAU sets out requirements for an underwater archaeological impact assessment report to be forwarded to national monuments or included as part of the overall archaeological assessment. It should include a walkover survey, wading survey and/or dive survey and metal detection.

9.11.10. The EIAR reports four areas where the proposed development may traverse the archaeological zone namely at Baginbun, at Templetown, Kilcloggan Castle and Dunbrody Abbey and Castle. The potential for discovery of previously unknown archaeological features or finds is noted.

9.11.11. There will be potential visual effects in the construction phase which are stated in section 10.5.2.1 to be locally moderate negative temporary at the Landfall site but discounted in terms of the proposed converter station and tail station site. In relation to the latter it is stated that there will be no long-term significant visual effects

on the known archaeological landscape. The planning authority has addressed this issue in its submission, and I deal with their comments and the applicant's response primarily under the landscape and visual sections of this report. I agree with the general trust of the submission of the planning authority and I consider that there are potential visual effects on the setting of Dunbrody Abbey, albeit that the works at Great Island will be in the distant view and visible from the regional road and the rear of the monument.

9.11.12. Due to the extent of the site the construction of the converter station and tail station at Great Island in a greenfield area may uncover previously unknown archaeological sites. This point is made also in relation to all other greenfield areas including the site of Lewistown compound.

Mitigation

9.11.13. It is reported in the EIAR that National Monuments Service advised of the requirement for archaeological monitoring in the road between Dunbrody Abbey and Castle as well as monitoring of all greenfield excavation, which the applicant indicates will be agreed as part of the licensing process. The application submission in response points to the relevant sections of the EIAR, noting the desktop study and walkover site inspection. The Campile river crossing is 400m in length and 16 m beneath the bed of the estuary and will not have affect the riverbed or riverbanks. Ground disturbance within the HDD compounds at either end will be monitored archaeologically but no underwater survey is proposed as no effect on the riverbed or riverbanks is expected. I consider that this conclusion is reasonable and that there is no likelihood of archaeological remains below the riverbed at the depth proposed which would be likely to be impacted. It is appropriate however that NMS be involved in agreeing the future assessments and I have drafted a planning condition accordingly.

9.11.14. At the crossing of the Newtown stream, if an open cut method is used it will be subject to surveying to ensure any unknown archaeological features are identified and avoided. A wade survey and metal detection survey of the crossing area will be carried out.

9.11.15. Archaeological monitoring will be undertaken under licence of all ground disturbance including disturbance of riverbanks and riverbeds, off-road locations and

at the significant sites as specified in section 10.6.1. The archaeologist will secure an excavation licence for monitoring in the event of an archaeological discovery. The monitoring archaeologist will have the authority to hold development if archaeological features or fines are uncovered. Further work on the site would require consultation with the staff of The Heritage Service. A geophysical survey will be undertaken under licence at the site of the proposed converter station, tail station and converter station construction compound. If potential archaeological material is detected it will be archaeologically resolved prior to construction. There would be sufficient financial support in sufficient time within the construction programme to facilitate excavation and recording. To address visual effects at contractors compounds, in particularly near Baginbun Beach, site hoarding would be erected.

Residual Impacts

9.11.16. The applicant concludes that with the implementation of archaeological mitigation measures no significant residual effects on archaeological, architectural and cultural heritage is predicted. I agree with this conclusion.

Cumulative

9.11.17. There is potential for cumulative effects at the converter station/tail station site in association with the nearby ESS project. Such effects arise due to the greenfield nature of these lands and the potential for discovery of hitherto unknown archaeological remains.

Transboundary Effects

9.11.18. The proposed development would not have a significant effect on archaeological, architectural and cultural heritage in another state and there are no transboundary effects.

Conclusion

9.11.19. I have taken into account the contents of the EIAR and the submissions on file and on that basis I am satisfied that potential effects on archaeological, architectural and cultural heritage would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions.

9.11.20. I am satisfied that the proposed development would not have any unacceptable direct, indirect, cumulative or transboundary effects on archaeological, architectural and cultural heritage.

9.12. Landscape and Visual

9.12.1. I refer to my earlier consideration of this topic under the planning assessment section of this report. The primary elements of the applicant's submissions are Chapter 11 of the EIAR and the photomontages. Regarding the selected viewpoints I note that 10 no. viewpoint locations focus on the converter station/tail station site and represent the existing landscape and the proposed development in the landscape context from a selection of locations. At the time of my inspection I concluded that the selected locations take into account all areas from which there would be significant long-term visual impact, but I also formed the view that the scale of the development is underestimated. I have earlier commented on the submission of the planning authority and recommended a condition for further agreement of the landscaping proposals.

Existing Environment

9.12.2. In terms of the Wexford Landscape Character Assessment the following applies:

- The converter station site is in 'River Valleys'.
- The remainder of the landscape including the landing point of the subsea cable and the lands to which the underground cable runs are described as being in a 'Coastal' landscape character type which due to the presence of the sea have a more scenic appearance which is very sensitive to development.
- The coastline has a cluster of sites of geological interest and a distinctive settlement and field pattern. The coastal area contains sites of great historic interest associated with the Normans, the Hook Lighthouse and the historical use of Duncannon port. The beaches, landscapes and villages and Hook Lighthouse are popular with tourists and development on the peninsula is tourist related.

9.12.3. In the absence of a statutory Landscape Character Assessment but noting Appendix 9 of the Waterford County Development Plan an assessment undertaken as part of the EIAR describes broad landscape character areas. These are:

- 'River Valley' which follows the shoreline of the river including Cheekpoint village in terms of its character this area is described as predominantly rural with evidence of industrial development and the prevalence of infrastructure such as the Power Station, roads, railway bridges and other infrastructure.
- 'Broad Undulating Hills' which are to the south of the River Suir. In general views to Great Island are limited due to a strong network of hedgerows and blocks of trees.
- At Cheekpoint Great Island is a prominent visual feature in the adjacent 'River Valleys' landscape character area in Wexford and has an influence on the character of 'Broad Undulating Hills'.
- 'Coastal', which follows the coast south of passage east to Woodstown and beyond and the harbour, sea and Hook Head Peninsula are prominent visual elements. Generally, views to Great Island are absent due to intervening topography.

9.12.4. In County Kilkenny west of the River Barrow the landscape character areas with potential to be affected as described in the County Landscape Character Assessment are:

- 'South Eastern Hills', including areas which overlook Great Island. There are steep slopes to the River Barrow which are heavily vegetated. The area contains rural dwellinghouses including at Ringville where there are views over the estuary and to Great Island.
- 'Suir Valley' includes the river corridors of the Suir and Barrow where the rivers are the dominant visual and landscape features. At the confluence of the two rivers at Great Island, the Power Station, rail bridge and overhead power lines are dominant elements in the area.

Regarding landscape significance and sensitivity figure 11.3 in Chapter 11 of the EIAR provides a very useful overview showing the location of key cultural

heritage/visitor attractions, scenic roads and existing and planned amenity routes. The following are noteworthy:

- The subsea cable landing at Baginbun Beach and part of the route of the underground cable falls within landscapes to which the Coastal Zone Policy Area applies and within Landscapes of Greater Sensitivity.
- The coastline, estuaries and banks of rivers in Waterford are identified under the development plan as being 'Vulnerable'.
- Cheekpoint is identified as 'Robust'.
- The R683 from Passage East towards Cheekpoint in Waterford is described as a Scenic Route.
- In Kilkenny County the riverbanks of the Barrow close to Great Island are located in an area designated 'Highly Scenic / Visually Pleasing'.
- In Kilkenny V22 is a protected view including over the confluence of the river Suir and Barrow on roads LS7483 from its junction with road LP3415 and view from road LT74831 – 15.

9.12.5. Regarding visitor attractions shown in Figure 11.3 the following are noteworthy:

- The proposed Waterford to Rosslare Greenway, which is planned along the railway line, which is described in the EIAR as a former railway line. This is close to the northern boundary of the converter building site. Filtered views of the site are likely from the east and north.
- Eurovelo Cycle Route 1. This passes along the coast and passes Baginbun Beach and follows some of the route of the underground cable. It overlaps with the Norman Way cycle route.
- Ring of Hook Coastal Drive passes by Baginbun Beach and part of the underground cable route follows this route.
- Kilmokea County Manor and Gardens, which is approximately 1.5 km north of the converter station site. Views are limited by vegetation.
- JFK Arboretum is situated 4.5 km to the north-east of the site. Views are limited by vegetation.

- The scenic lookout point and walks at the top of Slievecoillte Hill provide 360° views including Great Island.

9.12.6. Cultural heritage features of importance, which are also visitor destinations include:

- Dunbrody Abbey, 1.6 km east of the site. There are views from Dunbrody Abbey towards Great Island.
- Kilmokea Church and graveyard which is 1.5 km north of the site. Views from Kilmokea Church and graveyard are screened.

9.12.7. Residential properties and roads from which there are views of the converter station site are described in section 11.2.6 of the EIAR. For the purposes of assessment these are considered in 7 no. groups. Figure 11.5 shows the visual receptors with views of the converter station site and the photomontage location selected. In addition, there are 231 residential properties within 100 m of the cable route. These are likely to experience some level of temporary landscape and visual effects.

9.12.8. Regarding regional and local roads in the surrounding landscape with views to the converter station site and existing power station, these include:

- The L4033 Local Access Rd which provides access to the power station site, farmsteads and residential properties. Occasional gaps in hedgerows on some of the local access roads provide views of the site. 1.6 km east of the site. This is represented in view 1.
- To the north-east and east there are occasional sequential open views from the L8077 and R733 represented by views 2 and 3.
- There are elevated distance views of the site from roads leading to the viewpoint at Slievecoillte. This is represented in view 4.
- At Dunbrody Abbey on the R733 there are views towards the site is represented in view 5.
- To the south-east there are occasional views of the site from Local Rd, L80801 – 1 across Waterford harbour, view 7.
- To the south in Waterford are limited sequential views at a distance of over 4 km from the R683, a designated scenic route. This is view 8.

- At Cheekpoint village there are open views from local roads across the estuary towards the Power station. This is view 9.
- To the north-west in Kilkenny there are a number of limited sequential views from a distance of 3.5 km from local roads at Ringville. This is view 10.

Potential Impacts

9.12.9. The EIAR following an assessment of the zone of theoretical visual influence identified 10 no. representative viewpoints to assist in the assessment of effects on visual amenity and visual receptors.

9.12.10. The construction phase landscape character effects may be described as follows:

- At the converter station site, the large-scale works including the erection of buildings and structures of significant scale and undertaking of significant earthworks will have moderate negative effects on the landscape character. These effects will be on the immediate area north of the site and also on the area to the east of the site including the vicinity of Dunbrody Abbey and the R733. The context is the immediately adjacent the large-scale power station and substation and associated high-voltage power lines and the railway line.
- Due to the use of horizontal directional drilling at the landfall site the beach and coastline and areas immediately adjacent the beach will be unaffected. The presence of the drilling rig and compound in this area as well as the cable ship in the bay will result in moderate negative and temporary effects on nearby residential properties, beach visitors and nearby cultural heritage features.
- The laying of the cable will give rise to short-term construction impacts on the landscape. The lands and road structures impacted will be reinstated. The underground cabling and associated works will result in significant, negative and temporary effects. Visual receptors affected would include local residents and tourists.

The construction phase visual effects may be described as follows:

- The works at the converter station site and tail station will be particularly visible from nearby roads and residential properties including groups RG 01, RG 03 and RG06 at Newtown / Great Island, Dunbrody / Campile and Cheekpoint.

Visual impacts will fluctuate throughout the period of construction. The introduction of prominent tall features such as cranes will have temporary visual effects. Temporary lighting will be required during the winter months in particular. These visual effects are considered to be moderate, negative and temporary in nature.

- During construction of the cable landing and the horizontal directional drilling crossing at Campile river estuary temporary visual impacts would be evident due to the construction operation including use of drilling rigs, task lighting and other construction equipment. At Baginbun Beach the use of the cable ship is relevant. There would be no direct effect on the beach, coastline or estuary. Due to the sensitivity of these settings as places of residence and recreation impacts will be significant, negative but temporary in nature.
- For the majority of the route including at Lewistown where a temporary contractors compound is to be located the laying of the underground cable will give rise to impacts which are significant, negative and temporary in nature for the nearby adjoining residents and users of local roads.

The operational impacts on landscape character may be described as follows:

- Due to its large-scale nature the development of the converter station and tail station buildings and structures will result in a degree of change to the landscape character. The proposed development will intensify the developed nature of the existing site and immediate surrounding areas.
- At site level the change from agricultural to industrial use, the regrading and planting will result in significant change to the character of the site. This will be noticeable from the area immediately north in Newtown / Great Island where there will be moderate, negative and long-term effects. In the wider landscape there will be slight, negative/neutral and long-term character effects.
- Otherwise the proposed development will result in limited effects on landscape character. These would be limited to slight negative effects associated with structures such as marker posts and the enlarged car park at Baginbun.
- The proposed community gain measure involving works at Ramsgrange village would give rise to moderate positive long-term effects.

9.12.11. The visual impact assessment presented sets out a schedule of visual effects on receptors in table 11.2. The accompanying photomontages which show alternative designs and cumulative development (the permitted ESS) and depict new trees at approximately 5 to 7 years growth. Due to its scale the proposed converter building site and compound will be visible from a number of locations of varying sensitivities. The assessment undertaken concludes that for the most part the significance of effect would be slight or not significant. However, there are a number of locations where the significance of effect may be described as moderate, which are described below:

- As represented in view 1 the Newtown / Great Island area and the residents group RG01 are assessed as being of high sensitivity. At this location are a number of farmsteads as close as 500m and to the north of the site. The proposed development would be largely visible against the backdrop of topography with portions of the parapets of the building breaking the skyline. The magnitude of effect is described as medium to low. Perimeter mounding and planting will assist in reducing visual effects. The significance of effect attributed is moderate negative.
- For users of the local road in the same area the sensitivity is reduced to medium. There will be glimpsed views through vegetation whilst travelling on the local roads and the proposed development and adjoining energy storage project will be visible against the backdrop of background topography. The magnitude of effect attributed is therefore medium to low and the significance of effect slight to moderate negative.
- Regarding view 2 which represents a residents group RG03 which is of high sensitivity. The relevant residential properties in farmsteads are grouped over 1.8 km to the north-east and particularly in the winter months there are views to the existing power station, substation and overhead electricity cables. The proposed development and the adjoining ESS project will be visible against the background topography and woodland and would have a medium to low effect. Due to the high sensitivity the significance of this effect is slight to moderate negative.

- As represented by view 9 in Cheekpoint in County Waterford a residents grouping RG06 is identified as being of high sensitivity. The distance between the village and the site is about 1.1 km and there are open uninterrupted views of the existing power station which is a prominent visual feature. The southern side of the proposed site is clearly visible. The proposed development will be partially visible behind the site's topography and mounding and woodland screen planting. The upper portions of the converter station building will break the skyline. On the southern building elevation, a lighter grey cladding colour will be applied to help reduce visibility. Based on these considerations the magnitude of effect is attributed as being low and the significance of the effect is moderate negative.
- At Cheekpoint also is a public amenity area from which there are open interrupted views to the power station and clear visibility of the southern side of the proposed site. In this case the sensitivity attributed is medium, the magnitude of effect is low, and the significance of effect is moderate/slight negative.
- The impact of decommissioning will be not significant.

Mitigation

9.12.12. The mitigation measures are described in 11.4 of the EIAR and include:

- In the design process consideration was given to the design and siting of buildings, selection of material and colours and possible landscape mitigation. A number of building options were considered and evaluated.
- Embedded mitigation assumed that the power cables would be underground.
- The landscape strategy sought to ensure reduction of visual impact through consideration of aspects of layout, building and landscape. The design objectives for the development included integrating the development into the surrounding landscape, use of a restricted range of materials and colours to create visual consistency and selection of colour according to backdrop, placement of external electrical equipment behind buildings and topography where possible, measures to minimise visibility of fencing including use of a dark colour and planting with native hedgerow planting, use of native, mixed

woodland shelter planting at boundaries and retention and incorporation of existing landscape features.

- Regarding the landscape proposals to further reduce landscape and visual effects the objectives included filtering views from nearby residential properties and roads, assisting and visual integration of the development into the surrounding landscape, provision of an internal site landscape structure and implementation of a planting scheme with appropriate tree and shrub species. An outline landscape plan has been prepared for the converter station/substation site. The long-term effect will be a planting screen such that the proposed development will not create a significant visual intrusion for sensitive receptors. Planting species and specifications are set out.
- 6m pole light fittings are proposed, which will be specified and selected to achieve compliance with dark sky criteria. There would be no illuminated building mounted signage. The visual impact of lighting would be slight negative for views and areas to the north and north-east were some of the light standards will be visible from residential properties and as perimeter screen planting establishes the limited effects of lighting will diminish.

9.12.13. In terms of the likely success of the presented mitigation measures I conclude that that the selection of Alternative 1 over Alternative 2 comprises the selection of the least acceptable of the two options in terms of the landscape and visual effects. This is acknowledged in the EIAR. The selection of alternative 1 in my opinion undermines the otherwise appropriate suite of measures including with respect to the siting of the tail station and other features and the provision of mounding.

9.12.14. I consider that the selected simple form and colours of the converter station building is an effective mitigation measure.

9.12.15. I note in addition that the selected site is not optimum in terms of landscape and visual impact criteria.

9.12.16. I refer once more to the comments of Wexford County Council and to my recommendation that the detailed site landscaping be agreed with the Council. I consider it appropriate that the planning authority engage with the applicant to ensure that the best use is made of landscape screening opportunities.

Residual Impacts

9.12.17. The residual impacts are described in section 11.5 of the EIAR.

9.12.18. The development of the site will change the use of the site from open, agricultural hillside to an industrial infrastructure use with perimeter screen mounding and woodland planting. The applicant states that the proposed development including the buildings and landscaping will complement and successfully integrate the development into the landscape and visual environment. I consider that this conclusion is reasonable in the context of the SSE plant. The other way to describe this residual effect however is that it would extend the established landscape character of the SSE plant, which might be considered to be a slight adverse residual effect and that is my conclusion. The EIAR statement that there would be an intensification of use of the site is a similar conclusion.

9.12.19. The applicant states that on maturity of the landscape mitigation, in general there would be no significant impacts on landscape character. There will be moderate visual impact on views from the north and slight impacts on views to the east and south and it is acknowledged that there be an intensification of use of the site. I consider that this overall conclusion with respect to landscape and visual effects is reasonable, subject to further agreement on the detailed landscape plan.

Cumulative

9.12.20. Cumulative effects are considered in section 11.3.4 of the EIAR. The area is described as being of strategic national and regional importance for energy infrastructure and development which is part of the existing landscape River Valley character. The process of change is ongoing will continue with other proposed developments in the area including the permitted ESS north of the converter station site and the planned 110kV Uprate project, also in this area. In the short to medium-term these developments will have a cumulative impact which will be negative particularly in the areas immediately to the north and east and south namely Great Island, Newtown and Kilmore, Dunbrody and Cheekpoint.

9.12.21. The EIAR assessment is that the cumulative impact of these developments on landscape character from the wider area will be neutral. The proposed development will be seen as an extension of the existing built development of Great Island. The applicant states that the immediate landscape to the north of the site will be subject

to negative long-term effects where planting will not screen the proposed building development. I am not satisfied that the same conclusion does not apply in respect of areas to the east but I do acknowledge that the distance and mounding are mitigating measures and will reduce the apparent scale of the converter station.

9.12.22. There would be no cumulative landscape or visual effects on views from the south.

9.12.23. Overall, the conclusion taking into account the other planned developments in the area is that the surrounding areas are deemed to be capable of absorbing the development without changing the character of the river valley/harbour landscape. I accept this conclusion.

Transboundary Effects

9.12.24. There are no transboundary landscape or visual effects.

Conclusion

9.12.25. I have taken into account the contents of the EIAR and the submissions on file and on that basis I am satisfied that potential effects on Landscape and Visual would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions.

9.12.26. I am satisfied that the proposed development would not have any unacceptable direct, indirect, cumulative or transboundary effects on population or human health.

9.12.27. I conclude that following mitigation the significant effects on Landscape and Visual are as described below.

Permanent landscape change of the site from an open and widely visible agricultural hillside to an industrial infrastructure use with screen mounding and woodland planting. This will be a significant landscape change and an intensification of the industrial character.

Permanent moderate visual impact on views from the north and permanent slight impacts on views to the east and south.

9.13. Traffic and transportation

9.13.1. The traffic impact assessment undertaken by the applicant is reported in Chapter 6 of the EIAR. Effects on the transport network are separately assessed for the converter station site, the landfall site and the cable route and haulage. I assess the significant construction phase traffic effects below having regard to the applicant submission, the observations and my findings following site inspection.

Existing Environment

9.13.2. The subject site benefits from its location relative to ports and the strategic national road network. At the same time the existing environment is mainly dominated by regional and local roads which experience seasonal peaks in traffic and significant levels of recreational use. The traffic flows in the area are low apart from in the summer months. During the summer months it is the southern part of the study area which would experience the highest traffic levels of traffic including use by vulnerable users.

9.13.3. Part of the cable route intersects with and then runs along the Hook Head Coastal Drive which is an important tourist route and will be busy in the summer months. Hook Lighthouse and Loftus Hall are on the peninsula south of the development and are popular tourist attractions.

9.13.4. There are houses in very close proximity to landfall at Baginbun and there are a number of schools in the area including in Ramsgrange, which the Health Service Executive South recommends should be considered in the construction management plan. There is also a school and GAA at Horeswood which is along the haul route from Great Island – the cable route diverts across agricultural lands to the south.

9.13.5. Appropriately, the purpose of informing the EIAR traffic counts undertaken included the month of August 2018 as well as winter months. The survey locations were spread throughout the site. Cyclists were recorded as well as other vehicles. As such there is a good baseline information available for the purposes of planning the construction works.

9.13.6. Typical two-way traffic flows are presented in the EIAR for summer and winter season. In general, the percentage HGV flow is about 10% typically.

Potential Impacts

9.13.7. In the construction phase the main working areas will be:

- At the Great Island site where the converter station and other works are proposed, and 190 staff would be based at peak construction. A separate construction compound for the northern section of the cable is also to be located here with 50 staff working from it.
- At the crossing of Campile estuary where 8 staff will be based at the horizontal directional drilling compounds.
- At Lewistown compound which will be the base for the midsection of the cable laying and approximately 50 staff will be based.
- At the landfall site where there will be two contractor compounds, one for the cable laying and one for the HDD contractor.

9.13.8. The undertaking of cable laying which is mostly within the local road network will give rise to requirements for diversion and traffic management. The detail of this work is presented in section 6.5.1.4 – 6.5.1.6 of the EIAR. I consider that the following is noteworthy in terms of potential impacts:

- The northern section of the cable (section 1) between the Great Island site and Ramsgrange includes the HDD crossing at Campile estuary which will generate limited traffic on the local road network. Within the overall section there will be full road closure of 200m stretches for a total of 10 days and stop-go systems operating for 47 days in stretches of 120 m. Alternative routes have spare capacity to carry diverted traffic. The stop-go system and temporary diversions will have a slight to moderate temporary effect on traffic conditions along this section of the cable route.
- The central section of the cable (section 2) is between Ramsgrange village and the Templar's Inn. The Lewistown compound will be utilised for this section of cable laying which follows a local and a regional road. A stop-go system in 120 m stretches will be required for 66 days in total. Most of the alternative routes in the vicinity are at least 6m wide and have ample spare capacity to carry diverted traffic. The works are timed to avoid the peak tourist season. In Ramsgrange village baseline traffic volumes are relatively high (3700 vehicles daily during the summer months) in this area will require careful

consideration but no road closures are envisaged. The stop-go system is considered to have a slight to moderate temporary effect on traffic conditions along this section of the cable route.

- The southern section of the cable route (section 3) is between the Templar's Inn and the landfall site, where the construction compound will be positioned. There will be a requirement for full road closure of 200m sections for total of 10 days and a stop-go system for 25 days. Traffic volumes in this section of roadway are very low (summer maximum volumes of 360 vehicles per day) and parallel local roads also carry very low traffic volumes. The alternative roads are therefore considered to have ample capacity to carry the diverted traffic.
- Sections 2 and three coincide with the Eurovelo Cycle Route. Works along all sections of the cable route are programmed to avoid the peak tourist season to reduce the effects on the road network including for cyclists.

9.13.9. Indicative haul routes are shown in figure 6.11 and utilise the M25 to the north which connects to 2 major ports. The transportation of transformers to the site may be by way of the SSE Power plant jetty, which would avoid use of the regional and local road north of the Great Island site.

9.13.10. Operational phase traffic levels would be very low, and no perceptible impact is anticipated. The decommissioning phase works would be less extensive than the construction works and in the context of a higher baseline traffic and thus affects would be predicted to be short-term and slight.

Mitigation

9.13.11. The significant construction phase traffic mitigation measures include:

- Implementation of the CTMP which is included in appendix 6.1. This is a live document. It will evolve following detailed consultation and will require agreement with the local authority and An Garda Siochana. The contractor will appoint a single point of contact to facilitate communication.
- Under the CTMP site traffic movements associated with the proposed development will be planned to ensure traffic movements are managed efficiently and in accordance with health and safety requirements and in a

manner which minimises disturbance and provides access to businesses and residents.

- Deliveries will be planned and programmed to ensure delivery as required at the working areas and to avoid peak periods. The likes of concrete pours will be planned to ensure no queueing. Parking of trucks will be managed and suitable measures including speed limits will be implemented. School areas will be avoided at peak times.
- Measures will be included in the CTMP to avoid dust and nuisance.
- Works along the cable route will be timed to avoid the peak tourist season.
- The effectiveness of the plan will be subject to continued monitoring. This will take into account all modes of traffic including pedestrians, cycling and parking provision.

9.13.12. There is no requirement for operational phase mitigation measures. Decommissioning phase measures will be implemented in line with best practice at the time.

Residual Impacts

9.13.13. There will be no long-term significant residual impacts.

9.13.14. There will be short-term significant impacts on residents and road users in the vicinity of the cable trench excavation and cable installation for the duration of works.

9.13.15. There will also be short-term moderate impact on road users in the vicinity of the converter station.

Cumulative

9.13.16. The applicant notes that due to the separation between sections 1 and 3 which will be concurrently constructed there should be no cumulative impacts and I agree with this statement.

9.13.17. There would be no cumulative effects associated with the overall Greenlink project. There is potential that the subsea cable installation may be supported by vessels operating from Waterford or Rosslare ports and these would use the national primary route network and would not generate traffic in the same area as the proposed development.

9.13.18. It is possible that there would be a geographic and temporal overlap between the proposed development and the 110 kV line Uprate Project. The information presented is that the electricity upgrade project would generate a maximum of eight HGVs over 1 to 2 days in the area. Any cumulative impact would therefore be slight and of short duration. A similar conclusion may be drawn in relation to the ESS permitted development, which would utilise the same access road as the converter station site. It would generate a maximum of 2no. two-way HGV trips per day and would overlap with the proposed development on the local road. Due to the low volumes of traffic generated by the ESS it cannot be said that there would be a significant cumulative impact.

Transboundary Effects

9.13.19. There are no likely transboundary effects.

Conclusion

9.13.20. I have taken into account the contents of the EIAR and the submissions on file and on that basis I am satisfied that potential effects on Traffic and Transportation would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions.

9.13.21. I am satisfied that the proposed development would not have any unacceptable direct, indirect, cumulative or transboundary effects on Traffic and Transportation.

9.13.22. I conclude that following mitigation the significant effects on Traffic and Transportation are as described below.

Short-term significant impacts on residents and road users in the vicinity of the cable trench excavation and cable installation for the duration of works.

Short-term moderate impact on road users in the vicinity of the converter station.

9.14. Material Assets

9.14.1. In this section I address resource and waste management as well as material assets including land. The topics are covered in chapters 14 and 16 of the EIAR.

Existing Environment

9.14.2. The assessment presented of the baseline environment in relation to resources and waste management includes a review of construction and demolition waste management, operational wastes and natural resources in the region and nationally. This included compiling a baseline and review capacity in relation to construction and operational wastes.

9.14.3. The main use of materials will be in the construction phase. Bulk materials including concrete, crushed stone other materials will be sourced in the south-east region. Other material requirements including structural steel and reinforcing steel, electrical and fibre-optic cables and electronic and electrical equipment made of metals, plastics and composite materials will be sourced nationally and internationally. The scale of the civil engineering and building sector in Ireland and the availability and consumption of building materials is noted in terms of the economic value and the growth of the industry.

9.14.4. The baseline environment relating to material assets includes land-use and property, electricity, gas, telecommunications and others. The project will require temporary land take in addition to permanent land take. The applicant will permanently acquire the converter station and tail station site and otherwise undertake wayleave agreements. Land will be required to construct the car park close to Baginbun Beach. The power required to operate the development is available close to the Eirgrid 220 kV substation on the SSE site.

9.14.5. A gas transmission pipeline running north-south beside the western boundary of the converter station site will be crossed by the HVAC cable. GNI has been consulted.

9.14.6. A water supply mains is available at the northern boundary of the converter station and tail station site. It has ample capacity for the proposed development. No foul water services or surface water drains serve the proposed development area.

Potential Impacts

9.14.7. The significant potential effects relating to waste and resources include:

- Excavated material at the converter station platform will be used in screening berms. Export of soil will be avoided. 20,000 m^3 of structural fill will be imported.

- Along the route of the cable the surplus excavation material will be suitable for reuse. Where necessary removal of waste will be delivered for recovery or recycling at licensed facilities. It is estimated that 21,000 m³ of spoil will be excavated for the onshore cable.
- Overall, during construction an estimated 6000 tonnes of surplus excavation material will require removal.
- If encountered hazardous material will be delivered to a suitably authorised facility.
- A small volume of soil and bentonite will require handling and disposal.
- Construction wastes which can arise are typical of any construction site and the construction waste streams are summarised in table 14.2. These quantities are described as being small in the context of national generation of waste materials with an imperceptible adverse effect on waste recycling/processing and disposal facilities.
- The operational phase direct and indirect effects in terms of waste streams are described and are not significant. The estimated quantities of decommissioning phase waste material streams are set out in table 14.5.
- By the time the proposed development will need to be decommissioned circular economy principles will be fully operational and no significant effects on resources are waste management is expected.

9.14.8. The significant potential effects relating to resource use include:

- Use of crushed stone and other construction materials as described in summary in table 14.3.
- Use of potable water consumption in the amount of 100 m³ and power in the amount of 2100 MWh at the temporary facilities and construction activities.
- A total investment to Greenlink of €400 million of which less than half will be the investment in the proposed development. This figure will be spent over three years and a significant proportion will be for materials sourced from overseas. The proposed development will represent significantly less than 1% of the total annual turnover of the construction industry nationally and is not

expected to have a significant impact on the capacity of the construction industry.

- Due to the use of key construction materials a slight adverse effect on resources is predicted.
- The operational phase indirect effects on waste would not be significant.

9.14.9. The significant effects on land use, property and utilities in the construction phase include:

- Permanent and temporary acquisition of lands. They will not be a direct negative effect on property or use of land outside the red line boundary.
- Construction phase employment in the region of 250 jobs. This will be a short-term significant positive effect.
- The effect on electricity and telecommunications will be limited to very short outages required for making connections.
- The crossing of the existing gas transmission pipeline will be overseen by GNI to ensure that there are no adverse effects to the gas pipeline.
- The requirement for water for welfare facilities, wheel washing and dust control arises throughout. If asbestos piping is uncovered, it will be double bagged stored and collected and as requested by the Council the contractor will have a sufficient stock of pipe on site to minimise repair time.
- There will be direct effects on foul sewers from the volume of wastewater. This will have a moderate impact on the sewage treatment plant utilised as a disposal facility.
- In the operational phase certain requirements will pertain relating to the way leave area. The operation of the proposed development will have a long-term slight, negative effect on the future use in the area of the proposed cable route.
- The direct effect on electricity through the provision of 500 MW of interconnector capacity is described. An indirect effect will be to reduce electricity generation in fossil fuel power plants.

Mitigation

9.14.10. The mitigation measures relating to wastes and resources include:

- The preparation of a Construction Waste Management Strategy as part of the CEMP. This will address waste generation and arrangements for prevention, reuse, recycling disposal and collection of recyclables and waste. It will be submitted to Wexford County Council for prior approval.
- Other standard on site best practice mitigation measures are described.
- In the operation phase there will be an ongoing requirement for power input to operate the converter station and tail station which will have a slight adverse long-term effect on the grid.

9.14.11. The main mitigation measures relating to material assets include:

- Measures will be put in place to minimise disruptions to services and mitigate the risk of damage to existing services.
- Surface water management measures will be adopted throughout.
- All works near services and utilities will be carried out in consultation on an ongoing basis with the relevant utility company or the local authority.
- Restrictions on the activities to be undertaken within the wayleaves cannot be mitigated but the width has been minimised.

Residual Impacts

9.14.12. It is considered that the residual effects of construction waste are imperceptible adverse and short term and of construction resource use is slight adverse and long-term.

9.14.13. The residual effect of operational waste is imperceptible and permanent. There is a slight adverse long-term effect associated with power use for operation of the converter station and tail station.

9.14.14. It is considered that there are no significant residual effects on land use and property, electricity, telecommunications, gas, water supply or the sewer and drainage infrastructure.

9.14.15. The delivery of the proposed development will result in long-term significant positive effects on the electricity network.

9.14.16. The proposed development will result in long-term slight negative effects on activities and development within the cable wayleave.

9.14.17. The project will have a significant long-term positive transboundary effect on the security of power supply and will support renewable energy generation by reducing the need for curtailment and providing access to markets.

Cumulative

9.14.18. In the construction and decommissioning phases, the scale of the project will be very small relative to the scale of the construction industry and the natural resource supply and waste infrastructure. Cumulative construction and demolition impacts would not be anticipated. Regarding cumulative effects with other projects these are assessed in section 14.7.1.2 and following consideration of the 110kV Line Uprate and the ESS cumulative construction, operational and demolition impacts are not expected to be significant. Having regard to the scale of the project I accept this conclusion.

9.14.19. The cumulative effects on material assets including land are considered as follows:

- The110KV Line Uprate project will not involve significant construction works at Great Island and the overall land take is minimal.
- The ESS will be on a 1.5 ha site adjacent the converter station site. It is not expected to overlap with the construction of the proposed development.
- The potential cumulative effects of the construction phase of the three projects on material assets would not be expected to be significant.
- The operation of the Line Uprate and the ESS will have minimal effect on material assets and would not be expected to be a significant cumulative effect on materials assets.
- The cumulative land take for the converter station and the ESS of 10.8 ha is not significant given the area of arable land available.

Transboundary Effects

9.14.20. No significant transboundary effects would be expected in terms of the overall environmental topic of material assets including waste, natural resources and land.

9.14.21. Regarding the overall topic of material assets, the transboundary effects of the project will be beneficial and significant. This will include long-term positive effects in terms of national energy security.

Conclusion

9.14.22. I have taken into account the contents of the EIAR and the submissions on file and on that basis I am satisfied that potential effects on Material Assets, Resource and Waste Management would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions.

9.14.23. I am satisfied that the proposed development would not have any unacceptable direct, indirect, cumulative or transboundary effects on Material Assets, Resource and Waste Management.

9.14.24. I conclude that following mitigation the significant effects on Material Assets, Resource and Waste Management are as described below.

Short-term significant effects on land use from temporary occupation of farmland and disturbance to services during construction.

Slight adverse long-term effects on resource usage related to the running of the converter station and tail station.

Long-term slight negative effects from restrictions on activities and development over the cable way leave.

Long-term positive effects on national energy security and promotion of sustainable energy use.

A significant negative effect is predicted following decommissioning of the interconnector.

Positive long-term impacts through the provision of community gain measures at Ramsgrange and Baginbun Beach.

Short-term negative impacts on population and human health as a result of noise and road closures.

9.15. Interactions and Cumulative Effects

9.15.1. Chapter 18 and outlines the potential interactions. The likely significant residual interactive or indirect effects identified are described in section 18.3.25 and include:

- Traffic and visual amenity. Interactive effects arise during construction of the landfall and cable route. These effects will be localised, short-term and significant. The receptors will include residents and visitors along the cable route and at Baginbun Beach.
- Traffic and population. Short-term significant impacts on residents and road users in the vicinity of the cable will affect the population for the duration of works.
- The landscape and visual effects and population interactions are described in terms of the significant effects on the visual amenity of residents and visitors along the cable route and at Baginbun Beach . Such effects would also be experienced at Great Island.
- Similar to the above I consider that there are landscape and visual effects and cultural heritage interactions.
- Population, natural resources and waste management interactions relate to the greater use of natural resources and greater waste generation and creation of employment.
- Interactions in terms of population and material assets relate to the construction and decommissioning phases of the proposed development and the creation of employment and use of material assets in the region.
- Interactions between material assets and air quality and climate relate to the operation of Greenlink which will support renewable generation and reduce curtailment and have an indirect effect of improved air quality. There would also be an associated positive impact on human health.
- Through the operation of Greenlink there will be support for renewable generation and an indirect effect of reducing fuel consumption and generation of waste. As such there is an interactive effect between material assets and natural resources.

- Interactions between material assets and population refer to socio-economic benefits to electricity consumers, increased security of supply nationally and related benefits.

9.15.2. It may be concluded from consideration of the contents of the EIAR that the long-term residual indirect and interactive effects are positive in nature.

9.16. Major accidents and disasters.

9.16.1. Under the EIA Directive it is necessary to consider the vulnerability of projects to major accidents and/or natural disasters, the risk of those accidents and the consequences for the likelihood of significant adverse effects on the environment. The proposed development will be assessed below in terms of non-standard but plausible incidents which could occur at the proposed development during construction, operation and decommissioning and on off-site events which could cause the proposed development to have a nontrivial impact on the environment. I note that the meaning of 'extremely unlikely' as used in the EIAR refers to a likelihood of risk of occurring only in exceptional circumstances/once in every 500 or more years. Such risks are not brought forward for risk assessment. The HSA has confirmed that the proposed development does not involve a new establishment but is in the vicinity of a notified establishment.

9.16.2. In terms of risks from off-site context of the converter station and tail station site includes the permitted Great Island Energy Storage System (on a 0.5 ha site adjacent to the converter station's northern boundary at a distance of 35 to 40m from the buildings), to the west the SSE Great Island Power Station, a lower tier Seveso site due to the on-site storage of 10,000 m^3 of diesel and a gas pipeline. The nearest residential receptors are a small number of a houses to the north of the converter station site.

9.16.3. For the purposes of considering the Great Island Power Station, the EIAR references the QRA in Appendix 3.3 of the IED licence reference P0606 – 03. I have examined this on the EPA website. The inner, middle and outer zones of risk of fatality for people outdoors is reproduced in figure 17.1 in the EIAR.

9.16.4. Three particular aspects of the proposed development are relevant in terms of potential for major accidents hazard:

- Part of the south-western corner of the converter station site falls within the outer zone. This area is set aside as a landscaped berm. As such staff would not normally be present in the operation or decommissioning of the proposed development at this location. At this location, the risk of fatality per year is 1 x 10^{-7} . The workers involved in the landscaping of the area would be present for a few days at most.
- The jetty at the SSE site, which may be used for delivery of abnormal loads during construction falls within the outer zone. Cross-referencing chapter 17 with the overall body of information in the EIAR it is evident that use of the jetty, in the event that this was required, would involve delivery over a short period and would thus give rise to minimal risk.
- The HVAC within the SSE site, which will require three months to construct passes through the inner, middle and outer zones.

9.16.5. Having regard to the above I consider that the conclusion set out in the EIAR is robust and that the potential risk of an effect on human beings at the proposed development site from an incident on the Great Island Power Station site has a likelihood of less than 'extremely unlikely'.

9.16.6. Other aspects of the SSE Power Station site referenced include the assessment and conclusion that there is no plausible potential risk of a distillate spill affecting the proposed development. I concur with this conclusion based on the design.

9.16.7. Great Island Energy Storage System is discussed in section 17.3.4 wherein it is concluded that it does not represent a major accident hazard to the proposed development. I consider that this conclusion follows from the information presented.

9.16.8. A gas pipeline operated by GNI which runs north-south within the SSE site and close to the converter station and tail station is considered in section 17.3.3 of the EIAR. The statutory role of CRU in the regulation of gas undertakings with respect to safety and the associated licensing system is referenced. The fatality risk is lower than the probability of 'extremely unlikely'. The laying of the cable under the gas pipeline is considered to represent a greater potential hazard and is included in the risk assessment. This has been described earlier.

9.16.9. Other potential off-site hazards are excluded as discussed in section 17.3.5. The risk of tidal flooding at the elevated converter station site is described as being not plausible. I agree with this and note the planning authority comments which would support it. There are no recorded landslide events within the study area. While small scales cliff instability and minor landslides were noted on the cliffs at Baginbun Beach these were mainly in the thin overburden and the cable will be installed well below the cliff and the beach and there is no plausible risk due to landslides or ground instability. I agree with this conclusion and note the absence of comments to the contrary in the GSI submission.

9.16.10. Therefore, I consider that it may reasonably concluded that the potential effects in the construction phase are as set out in section 17.4.2 and relate to potential flooding of workings during extreme weather, spillages or long-term leakage of pollutants to nearby receptors, fire and explosion and secondary impacts in the event that fire water/foam/powder reaching nearby receptors including water courses, vehicle collision and shock.

9.16.11. I consider that it may also be reasonably concluded that the potential effects in the operation phase are as set out in section 17.4.3 , which are a similar suite of risks.

9.16.12. Similar conclusions for the decommissioning phase are presented in section 17.4.4.

9.16.13. It appears to me that the risks brought forward for the risk analysis have been appropriately considered and that the conclusions may be relied upon. Taking into account the likelihood rating determined earlier and the consequence rating risk matrix was prepared and as set out in table 17.9. It is noted that all of the potential risks identified during construction, operation and decommissioning can be classified as low risk. Those with the highest risk score were vehicle collision during construction, fire and/or explosion with secondary effect effects in the construction and operation phases.

9.16.14. Having regard to the above it may be concluded with respect to major accidents and disasters that there are no plausible major accidents or disaster hazards to which the proposed development would be vulnerable and no plausible potential risks which would result in the proposed development causing a major

accident or disaster on or outside the site. The mitigation measures described are set out in sufficient detail for purposes of this application.

9.16.15. Based on the above it may be concluded that subject to implementing these measures and the implementation and monitoring of the CEMP and monitoring, that no residual effects arise.

10.0 Appropriate Assessment

10.1. Introduction, legal context and proposed development

Introduction

10.1.1. The requirements of Article 6(3) as related to appropriate assessment of a project under part XAB, sections 177U and 177V of the Planning and Development Act 2000 (as amended) are considered fully in this section. The areas addressed in this section are as follows:

- Compliance with Article 6(3) of the EU Habitats Directive.
- Screening the need for appropriate assessment.
- The Natura Impact Statement and associated documents.
- Appropriate assessment of implications of the proposed development on the integrity of each European site.

Compliance with Article 6(3) of the EU Habitats Directive

10.1.2. The Habitats Directive deals with the Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union. Article 6(3) of this Directive requires that any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. The competent authority must be satisfied that the proposal will not adversely affect the integrity of the European site before consent can be given.

10.1.3. The proposed development is not directly connected to or necessary to the management of any European site and therefore is subject to the provisions of Article 6(3).

Background

10.1.4. The applicant has submitted a Natura Impact Statement as part of the planning application which is entitled *Natura Impact Statement Ireland Onshore* dated October 2020.

10.1.5. The applicant has also submitted a Natura Impact Statement entitled *Greenlink Marine Natura Impact Statement* issued in July 2019. That NIS covers the Irish marine components of the overall project from mean high-water springs at the landfall at Baginbun Beach to the 12 nautical mile limit. The stated aim of that report is 'to inform the AA process in determining whether the Proposed Development and Campile Estuary component, both alone and in combination with other plans or projects, are likely to have a significant effect on any Natura 2000 site'.

10.1.6. Any reference in the following sections to 'the NIS' refers to the Natura Impact Statement Ireland Onshore. Any reference to 'the Marine NIS' refers to Greenlink Marine Natura Impact Statement.

10.1.7. The basis for the NIS includes a number of detailed scientific investigations including field surveys, assessments and modelling which were undertaken to assess and examine the potential for the project to impact on a number of European sites. These are reported in summary in sections 6 and 7 of the NIS. In addition, the relevant supporting sections of the EIAR are included as appendices. These include the construction strategy, biodiversity, noise and vibration, water and hydrology sections of the EIAR. The biodiversity chapter reports on mammal surveys undertaken and on the value of Newtown river as a potential fish habitat in the context of potentially supporting food resources for otter. In addition, a CEMP is included as appendix 5. The winter bird survey in appendix 4 assesses bird usage of the proposed landfall and HDD locations and is based on six separate survey dates between the months of October and March.

10.1.8. I consider that the information available constitutes the best available scientific information and is sufficient to allow the Board to carry out an appropriate assessment.

Description of the proposed development

10.1.9. The proposed development comprises the onshore elements of the overall Greenlink project. The meaning of onshore in this context is the land above the foreshore, i.e. the land above the high-water mark of ordinary or medium tides, indicated as HWM on ordnance survey maps.

10.1.10. The applicant provides a detailed description of the nature of the works and environmental management of the project in section 3 of the Natura Impact Statement. The proposed development will comprise the following permanent and temporary elements:

- Landfall compound at Baginbun Beach. This is where the HVDC cable will be installed underground by HDD.
- HVDC cables with nominal capacity of 500 MW from Landfall to the Converter Station.
- Converter Station at site close to the existing Eirgrid 220 kV Great Island substation.
- Tail station which is a 220 kV substation (Loughtown substation) beside the converter station. This will connect the HVAC 220 kV cable to the 220 kV grid by way of the existing Eirgrid Great Island substation.
- MV substation (ESB substation) adjacent to the tail station. This will provide the MV and LV connections for the development.
- Converter station construction compound.
- Cable contractor compounds at Landfall site, at proposed converter station and along the onshore route at a location in Lewistown.
- HDD compounds at a location close to the cable contractor compound at Baginbun Beach and at the Campile river estuary crossing (2 no).
- HVAC cables comprising a 220 kV electricity cable circuit consisting of three cables installed underground connecting the converter station via the Loughtown tail station to the existing Eirgrid Great Island substation.
- Fibre-optic cables.

- Community gain roadside car parking at Baginbun Beach.
- Community gain in Ramsgrange village comprising extension to footpaths, streetlights and speed activated signs.

10.1.11. A description of the main elements of the proposed development is provided in section 3.2. This includes an overview of the works duration and other matters including details of construction compounds and typical construction methods as well as detail of works at the converter station site.

10.1.12. Section 3.2.9 addresses the connection of the onshore cable to the marine cables in the transition jointing Bay (TJB) which will be buried underground in a field inland from Baginbun Beach. The TJB at the sea – land interface which will include armour clamps is larger than a standard joint Bay. The preferred method of installation at the landfall site inland from Baginbun Beach is horizontal directional drilling (HDD). This technique will also be used at the watercourse crossing at Campile river estuary as described in section 3.2.8.

10.1.13. Environmental management measures which have been included in the design and construction methodology are described in section 3.4 and set out in the CEMP provided as appendix 5 to the NIS. The construction strategy is further described in appendix 1 which comprises chapter 4 of the EIAR. The likely significant noise and vibration, water and hydrology impacts are described in chapters 8 and 7 of the EIAR and included as Appendix 6 and 7.

10.2. Appropriate Assessment- Screening

Introduction

10.2.1. The requirements of Article 6(3) as related to screening the need for appropriate assessment of a project under part XAB, section 177U of the Planning and Development Act 2000 (as amended) are considered fully in this section.

10.2.2. Stage 1 of the appropriate assessment process is the screening stage whereby it is determined whether the project is likely to have a significant effect, either individually or in combination with other plans and projects on European sites in view of the sites' conservation objectives.

10.2.3. The *Natura Impact Statement Ireland Onshore* includes a screening assessment for appropriate assessment. It is noted that while the project description set out in the NIS includes mitigation measures which have been incorporated into the project design these mitigation measures were not taken into account during the screening assessment. The screening assessment determines the potential for the development to have an adverse effect on European sites in the absence of mitigation and is based on potential impact pathways.

10.2.4. The applicant's screening assessment conclusion is presented below.

> 'Arising from the considerations detailed above, it is concluded that significant effects on the conservation objectives for the following European sites can be ruled out:
>
> - Ballyteigue Burrow SAC
> - Saltee Islands SAC
> - Keeragh Islands SPA
> - Ballyteigue Burrow SPA
> - Tramore Dunes and Backstrand SAC
> - Tramore Backstrand SPA
>
> These sites are not considered further.
>
> It is necessary to proceed to stage II of the appropriate assessment process in respect of the potential for significant effects on the particular conservation objectives (screened in in table 13 above) of the following European sites:
>
> - River Barrow and River Nore SAC
> - Hook Head SAC
> - Bannow Bay SAC
> - Lower River Suir SAC
> - Bannow Bay SPA.'

10.2.5. Having reviewed the documents and submissions I am satisfied that the information allows for a complete examination and identification of any potential significant

effects of the development, alone, or in combination with other plans and projects on European sites.

Screening for Appropriate Assessment- Test of likely significant effects

10.2.6. The project is not directly connected with or necessary to the management of a European Site and therefore it needs to be determined if the development is likely to have significant effects on European sites.

10.2.7. The proposed development is examined in relation to any possible interaction with European sites designated Special Conservation Areas (SAC) and Special Protection Areas (SPA) and the qualifying interests to assess whether it may give rise to significant effects on any European site.

Submissions and Observations

10.2.8. The submission of the Development Applications Unit raises the following points which are relevant to appropriate assessment:

- Need for amendment of the draft Invasive Species Management Plan to address spread of three-cornered leek and Japanese knotweed.
- Potential for fly tipping of garden waste at proposed car park, which could give rise to spread of invasive species. There is a need for operational management by Wexford County Council.
- Control or management of invasive species should be in accordance with recent TII publications.
- Suitability and effectiveness of use of herbicide to eradicate winter heliotrope to be assessed.
- Preliminary car park layout drawing shows a French drain to the south of the car park which may impact on the adjacent SAC and in addition there is a lack of any hydrocarbon interceptor at this car park which lies adjacent to an SAC.
- It is appropriate that a suitably sized ecological buffer perhaps entailing landscaping is left between the car park and the SAC.
- If there is a need to remove the jetty for the purposes of transport of abnormal loads by sea this should be subject to appropriate assessment screening.

10.2.9. No other observations or submissions raised issues relevant to appropriate assessment.

European sites with potential pathways to proposed development

10.2.10. The development site can be considered to be in or immediately adjacent to the River Barrow and River Nore SAC where it crosses under Campile estuary. The offshore cable would be within 10m of Hook Head SAC.

10.2.11. The other European sites which are within 15km of the proposed development were considered by the applicant to be appropriate for consideration.

10.2.12. A summary of European Sites that occur within 15 km of the proposed development is presented in the table below. Where a possible connection between the development and a European site has been identified this is referenced and the relevant pathway of potential impact is described. Where there is no pathway the European site can be eliminated from further consideration and this is noted.

10.2.13. Taking account of the characteristics of the proposed development in terms of its location and the scale of works, the following pathways are considered for examination in terms of implications for possible significant effects (PSEs) on European sites:

- Habitat loss – direct and indirect effects including from the spread of invasive species.
- Airborne noise and disturbance.
- Hydrological - impacts to water quality in the construction and operation phases.

10.2.14. The map on page 54 of the NIS show the proposed development in the context of the SACs and SPAs.

Table - Location of European sites, potential pathways and conservation objectives.

Site Name and Site Code	Conservation Objectives and Qualifying Interests (Habitats and Species)	Location / distance to European site and Potential Pathways

River Barrow and River Nore SAC (002162)	**Conservation Objectives** *Version 1.0, 19 July 2011* To maintain or restore the favourable conservation condition of the qualifying interests in River Barrow and River Nore SAC, which is defined by a list of attributes and targets. **Qualifying interests** Desmoulin's whorl snail *Vertigo moulinsiana* Freshwater pearl mussel *Margaritifera margaritifera (*status under review*)* White-clawed crayfish *Austropotamobius pallipes* Sea lamprey *Petromyzon marinus* Brook lamprey *Lampetra planeri* River lamprey *Lampetra fluviatilis* Twaite shad *Alosa fallax* Atlantic salmon (*Salmo salar*) (only in fresh water) Estuaries Mudflats and sandflats not covered by seawater at low tide *Salicornia* and other annuals colonizing mud and sand Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Otter *Lutra lutra* Mediterranean salt meadows (*Juncetalia maritimi*) Killarney fern *Trichomanes speciosum* Nore freshwater pearl mussel *Margaritifera durrovensis* Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation European dry heaths Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	The crossing point under Campile River Estuary is within this SAC. HDD compounds associated with the crossing are 10m and 150m from the SAC boundary. A construction compound is 340m to the east of the SAC. A stormwater discharge from the CSTS site to Newtown River is 150m east and upstream of the SAC. Potential pathways – habitat loss, airborne noise and disturbance and hydrological. PSEs cannot be excluded.

	* Petrifying springs with tufa formation (*Cratoneurion*) Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles * Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)	
Hook Head SAC (000764)	**Conservation Objectives** *Version 1.0, 21 October 2011* To maintain the favourable conservation condition of the qualifying interests in Hook Head SAC, which is defined by a list of attributes and targets. **Qualifying interests** Large shallow inlets and bays Reefs Vegetated sea cliffs of the Atlantic and Baltic coasts	The offshore cable to the landfall site is within the SAC. The Landfall HDD compound is 162m and the carpark 10m from the SAC boundary. Potential pathways – habitat loss, hydrological. PSEs cannot be excluded.
Bannow Bay SAC (000697)	**Conservation Objectives** *Version 1.0, 09 July 2012* To maintain or restore the favourable conservation condition of the qualifying interests in Bannow Bay SAC, which is defined by a list of attributes and targets. **Qualifying interests** Estuaries Mudflats and sandflats not covered by seawater at low tide Annual vegetation of drift lines Perennial vegetation of stony banks *Salicornia* and other annuals colonizing mud and sand Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Mediterranean salt meadows (*Juncetalia maritimi*)	The onshore cable comes within 300m of the SAC. The landfall site and offshore cable are over 1km to the south. Potential pathways – habitat loss and hydrological. PSEs cannot be excluded.

	Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) Embryonic shifting dunes Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') *Fixed coastal dunes with herbaceous vegetation ('grey dunes')	
Lower River Suir SAC (002137)	**Conservation Objectives** *Version 1.0, 28 March 2017* To maintain or restore the favourable conservation condition of the qualifying interests in Lower River Suir SAC, which is defined by a list of attributes and targets. **Qualifying interests** Freshwater Pearl Mussel *Margaritifera margaritifera* White-clawed Crayfish *Austropotamobius pallipes* Sea Lamprey *Petromyzon marinus* Brook Lamprey *Lampetra planeri* River Lamprey *Lampetra fluviatilis* Twaite Shad *Alosa fallax fallax* Salmon *Salmo salar* Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)* Otter *Lutra lutra* Mediterranean salt meadows (*Juncetalia maritimi*) Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	The converter station and tail station site and associated works are over 1km to the east of the SAC boundary which is within the meeting point of the rivers. Potential pathways – habitat loss, airborne noise and disturbance, hydrological. PSEs cannot be excluded.

	Alluvial forests *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) *Taxus baccata* woods of the British Isles	
Ballyteigue Burrow SAC (000696)	**Conservation Objectives** *Version 1.0, 07 July 2014* To maintain or restore the favourable conservation condition of the qualifying interests in Ballyteigue Burrow SAC, which is defined by a list of attributes and targets. **Qualifying interests** Estuaries Mudflats and sandflats not covered by seawater at low tide Coastal lagoons* Annual vegetation of drift lines Perennial vegetation of stony banks *Salicornia* and other annuals colonising mud and sand *Spartina* swards (*Spartinion maritimae*) Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Mediterranean salt meadows (*Juncetalia maritimi*) Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) Embryonic shifting dunes Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) Fixed coastal dunes with herbaceous vegetation (grey dunes)* Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)*	The landfall and offshore cables are over 8km to the west of the SAC. Discussed further below.
Saltee Islands SAC (000707)	**Conservation Objectives** *Version 1.0, 21 October 2011* To maintain the favourable conservation condition of the qualifying interests in	The landfall and offshore cables are over 9km to the north-west of the SAC.

	Saltee Islands SAC which is defined by a list of attributes and targets. **Qualifying interests** Mudflats and sandflats not covered by seawater at low tide Large shallow inlets and bays Reefs Vegetated sea cliffs of the Atlantic and Baltic coasts Grey Seal *Halichoerus grypus* Submerged or partially submerged sea caves	Discussed further below.
Tramore Dunes and Backstrand SAC (000671)	**Conservation Objectives** *Version 1.0, 05 September 2013* To maintain or restore the favourable conservation condition of the qualifying interests in Tramore Dunes and Backstrand SAC which is defined by a list of attributes and targets. **Qualifying interests** Mudflats and sandflats not covered by seawater at low tide Annual vegetation of drift lines Perennial vegetation of stony banks *Salicornia* and other annuals colonising mud and sand Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Mediterranean salt meadows (*Juncetalia maritimi*) Embryonic shifting dunes Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) Fixed coastal dunes with herbaceous vegetation (grey dunes)	The landfall and offshore cables are over 18 km to the east of the SAC. The onshore cables are 12km to the east. Discussed further below.
Bannow Bay SPA (004033)	**Conservation Objectives** *Version 1.0, 17 May 2012*	The landfall and offshore cable are 2km

	To maintain the favourable conservation condition of the bird species and wetlands listed as SCIs. **Special conservation interests** Light-bellied Brent Goose (*Branta bernicla hrota*) Shelduck (*Tadorna tadorna*) Pintail (*Anas acuta*) Oystercatcher (*Haematopus ostralegus*) Golden Plover (*Pluvialis apricaria*) Grey Plover (*Pluvialis squatarola*) Lapwing (*Vanellus vanellus*) Knot (*Calidris canutus*) Dunlin (*Calidris alpina*) Black-tailed Godwit (*Limosa limosa*) Bar-tailed Godwit (*Limosa lapponica*) Curlew (*Numenius arquata*) Redshank (*Tringa totanus*) Wetlands	to the south-west of the SPA. The onshore cable is 1km to the south of the SPA. Potential pathways – habitat loss and airborne noise and disturbance. PSEs cannot be ruled out.
Keeragh Islands SPA (004118)	**Conservation Objectives** *Version 1.0, 07 April 2020* To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests. **Special conservation interests** Cormorant *Phalacrocorax carbo*	The landfall and offshore cable are 6km to the south-west of the SPA. Discussed further below.
Ballyteigue Burrow SPA (004020)	**Conservation Objectives** *12 June 2014* To maintain the favourable conservation condition of the bird species listed as SCIs for this SPA. **Special conservation interests** Light-bellied Brent Goose (*Branta bernicla hrota*) Shelduck (*Tadorna tadorna*) Golden Plover (*Pluvialis apricaria*) Grey Plover (*Pluvialis squatarola*)	The landfall and offshore cable are 9km to the south-west of the SPA. Discussed further below.

	Lapwing (*Vanellus vanellus*) Black-tailed Godwit (*Limosa limosa*) Bar-tailed Godwit *(Limosa lapponica*) Wetland and Waterbirds	
Tramore Backstrand SPA (004027)	**Conservation Objectives** *Version 1.0, 03 October 2013* To maintain the favourable conservation condition of the bird species listed as SCIs for this SPA **Special conservation interests** Brent Goose (*Branta bernicla hrota)* Golden Plover (*Pluvialis apricaria)* Grey Plover (*Pluvialis squatarola)* Lapwing (*Vanellus vanellus)* Dunlin (*Calidris alpina*) Black-tailed Godwit (*Limosa limosa)* Bar-tailed Godwit (*Limosa lapponica)* Curlew (*Numenius arquata)* Wetlands	The landfall and offshore cables are over 18 km to the east of the SAC. The onshore cables are 12km to the east. Discussed further below.
Saltee Islands SPA (004002)	**Conservation Objectives** *Version 1.0, 21 October 2011* To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests. **Special conservation interests** Fulmar (*Fulmarus glacialis*) breeding Gannet (*Morus bassanus*) breeding Cormorant (*Phalacrocorax carbo*) Shag (*Phalacrocorax aristotelis*) breeding Lesser black-backed gull (*Larus fuscus*).. breeding Herring gull (*Larus argentatus*) … breeding Kittiwake (*Rissa tridactyla*) breeding Guillemot (*Uria aalge*) breeding Razorbill (*Alca torda*) breeding	The landfall and offshore cable are 16km to the north-west of the SPA. Discussed further below.

	Puffin (*Fratercula arctica*) breeding	

10.2.15. I now refer to the possibility of significant effects on 7 no. European sites:

- Ballyteigue Burrow SAC
- Saltee Islands SAC
- Tramore Dunes and Backstrand SAC
- Keeragh Islands SPA
- Ballyteigue Burrow SPA
- Tramore Backstrand SPA
- Saltee Islands SPA

Ballyteigue Burrow SAC

10.2.16. The site is designated for terrestrial and coastal habitats. The NIS states that it was considered that no pathway exists by which the proposed development could impact on this site due to the distances involved and lack of hydraulic or other connections.

10.2.17. I agree with this conclusion. In view of the considerable separation distance any theoretical hydrological link between the proposed development and the European site can be discounted as a pathway.

Saltee Islands SAC

10.2.18. The site is designated for terrestrial and coastal habitats and for grey seal.

10.2.19. The NIS states that it was considered that no pathway exists by which the proposed development could impact on this site due to the distances involved and lack of hydraulic or other connections.

10.2.20. I agree with this conclusion. In view of the considerable separation distance any theoretical hydrological link between the proposed development and the European site can be discounted as a pathway.

10.2.21. Regarding grey seal and the potential for significant effects due to noise or visual disturbance these potential pathways can be discounted due to separation distance and the undertaking of works above the high-water mark.

Tramore Dunes and Backstrand SAC

10.2.22. The qualifying interests are terrestrial and coastal habitats which are separated from the works areas by a distance of at least 12 km. The NIS states that it was considered that no pathway exists by which the proposed development could impact on this site due to the distances involved and lack of hydraulic or other connections.

10.2.23. I agree with this conclusion. In view of the considerable separation distance any theoretical hydrological link between the proposed development and the European site can be discounted as a pathway.

Keeragh Islands SPA

10.2.24. The site is designated for the special conservation interest cormorant, which was recorded within the proposed development footprint during bird surveys.

10.2.25. The NIS states that it was considered that no pathway exists by which the proposed development could impact on this site due to the distances involved and lack of hydraulic or other connections.

10.2.26. The above conclusion is reasonable and is supported by further assessment in the Marine NIS which concludes that a 4 km zone would be relevant for visual disturbance effects on cormorant. The landfall and offshore cable are 6km to the south-west of the SPA. Regarding the potential for noise disturbance affecting birds the species was not recorded in large numbers within the study area and there is ample available alternative habitat in the wider area.

10.2.27. I conclude that there is no possibility of significant effects on this European site.

Ballyteigue Burrow SPA

10.2.28. The special conservation interests are light bellied Brent Goose, golden plover, grey plover, Lapwing, shelduck, bar tailed godwit, black tailed godwit and wetland and waterbirds. Of these light bellied Brent Goose, golden plover, Lapwing,

bar tailed godwit and black tailed godwit were recorded during site surveys or are known to occur in the area from national databases.

10.2.29. The site is 9 km from the site of the proposed development.

10.2.30. The NIS states that it was considered that no pathway exists by which the proposed development could impact on this site due to the distances involved and lack of hydraulic or other connections.

10.2.31. I have considered the applicant's submission presented in the screening report. Having regard to the separation distance of 9km and the fact that it is primarily occurring on terrestrial habitat where low levels of special conservation interest bird species have been recorded, I consider that there is no possibility of significant effects and that this site can be screened out from further consideration.

Tramore Backstrand SPA

10.2.32. The site is designated for Brent goose, golden plover, grey plover, lapwing, dunlin, black-tailed godwit, bar-tailed godwit, curlew and wetlands and is over 12 km from the proposed development.

10.2.33. The NIS states that it was considered that no pathway exists by which the proposed development could impact on this site due to the distances involved and lack of hydraulic or other connections.

10.2.34. I have considered the applicant's submission presented in the screening report. Having regard to the separation distance of 12km and the fact that it is primarily occurring on terrestrial habitat where low levels of special conservation interest bird species have been recorded, I consider that there is no possibility of significant effects and that this site can be screened out from further consideration.

Saltee Islands SPA

10.2.35. The NIS does not consider this site for the purposes of appropriate assessment screening, but it is identified in the Marine NIS. As would be anticipated some of the birds which are special conservation interests have been identified utilising the wider study area including the site of the proposed development. In this regard I refer to the bird surveys which recorded from survey or databases the following special conservation interests - fulmar, cormorant, shag, lesser black backed gull and herring gull. The Marine NIS identifies the possibility of significant

effects due to visual disturbance as the only relevant pathway. A 2 – 4 km zone of visual disturbance is deemed relevant for the species. I note the conclusion in the Marine NIS that the relevant bird species would forage over a wide area.

10.2.36. Having regard to the separation distance of 16 km and the fact that it is primarily occurring on terrestrial habitat where low levels of special conservation interest bird species have been recorded, I consider that there is no possibility of significant effects and that this site can be screened out from further consideration.

Mitigation measures

10.2.37. No measures designed or intended to avoid or reduce any harmful effects of the project on a European Site have been relied upon in this screening exercise.

Screening Determination

10.2.38. The proposed development was considered in light of the requirements of 177U of the Planning and Development Act 2000 as amended. Having carried out screening for appropriate assessment of the project, it has been concluded that the project individually (or in combination with other plans or projects) could have a significant effect on European Sites No. 002162, 000764, 000697, 001237, 004033, in view of the site's conservation objectives, and appropriate assessment is therefore required.

10.3. Appropriate Assessment – Stage 2

10.3.1. Following the screening process, it has been determined that appropriate assessment is required as it cannot be excluded on the basis of objective information that the proposed development individually or in-combination with other plans or projects will not have a significant effect on the following European sites:

- River Barrow and River Nore SAC (002162)
- Hook Head SAC (000764)
- Bannow Bay SAC (000697)
- Lower River Suir SAC (002137)
- Bannow Bay SPA (004033)

10.3.2. The possibility of significant effects on other European sites has been excluded on the basis of objective information. The following European sites have been screened out for the need for appropriate assessment.

- Ballyteigue Burrow SAC (000696)
- Saltee Islands SAC (000707)
- Tramore Dunes and Backstrand SAC (000671)
- Keeragh Islands SPA (004118)
- Ballyteigue Burrow SPA (004020)
- Tramore Backstrand SPA (004027)
- Saltee Islands SPA (004002).

10.3.3. Having reviewed the documents, submissions and consultations, I am satisfied that the information allows for a complete assessment of any adverse effects of the development, on the conservation objectives of those European sites alone, or in combination with other plans and projects.

Appropriate Assessment of implications of the proposed development

10.3.4. 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.

European Sites

10.3.5. The following sites are subject to Appropriate Assessment:

- River Barrow and River Nore SAC (002162)
- Hook Head SAC (000764)
- Bannow Bay SAC (000697)
- Lower River Suir SAC (002137)
- Bannow Bay SPA (004033)

10.3.6. A description of the sites and their Conservation and Qualifying Interests/Special Conservation Interests are set out in the NIS and in table 1 above.

10.3.7. I have also examined the Natura 2000 data forms as relevant and the Conservation Objectives supporting documents for these sites available through the NPWS website (www.npws.ie).

Aspects of the proposed development.

10.3.8. The main aspects of the proposed development that could adversely affect the conservation objectives of European sites include:

- The large scale works at the converter station and tail station site.
- The crossing of Newtown (Kilmannock) stream by mini HDD or by open cut.
- The laying of cables along an extensive area of land.
- The construction compounds including at Lewistown.
- The operational discharge from the converter station and tail station site.
- The HDD at Campile river estuary crossing and at the landfall site.
- Other works at the landfall site including construction and use of the car park.

I have considered the application submissions in the EIAR and in the response to observations. In particular I refer to the comments of NPWS relating to the option of delivery to the jetty at Great Island and the need for appropriate assessment screening. The possible works at this location have been further described in the applicant's response. If there is a requirement to remove of part of the structure that would be undertaken from a barge from the water and would impact the structure which is above the water level. I consider that the applicant has demonstrated that there is no realistic likelihood of significant water quality impacts. The nature of the works and their duration would not give rise to significant noise effects. Therefore, I am satisfied that the works to be undertaken would not have significant effects the conservation objectives of European sites. I consider that this aspect of the proposed development should not be brought forward in this appropriate assessment.

Invasive species

10.3.9. The NIS together with the overall application documentation contains a range of information relating to the location of invasive species and the potential impacts

associated with their spread. A draft invasive species management plan is included as appendix 9 to the NIS. The submission of DAU made reference to a number of points in relation to the topic of invasive species. I note the comments which I have presented above which referred to some of the particular invasive species present and the remediation proposals. I consider that the comments made relate largely to general biodiversity. However, there are locations where the works are taking place in close proximity to an invasive species and in general any risk to the spread of invasive species present could result in habitat loss including of qualifying interests.

10.3.10. In terms of the locations close to the proposed development where invasive species have been recorded, I note the following:

- There is a standard of Japanese knotweed along the cable route at a location close to Templars Inn car park. The cable trench is to be constructed at the opposite side of the road.
- At various locations within and close to the works at Campile river estuary crossing rhododendron has been recorded.
- At Baginbun Beach 88m from the proposed car parking area three-cornered leek is recorded.
- Winter heliotrope is described as being ubiquitous along roadside verges in the area and too prevalent to effectively map.

10.3.11. The NIS together with the supplementary documentation includes a range of mitigation measures:

- the invasive species management plan is the overarching measure and this will be a live document to be detailed by the supervising ecologist and to include repeat surveys.
- Avoidance is the main mitigation measure together with ongoing monitoring.
- At Baginbun Beach for example avoidance and standard bio security measures are proposed.
- Prior notification will be given to contractors and affected areas will be delineated and protected.

10.3.12. The NIS records in section 8.5 the impacts from the spread of invasive species and describes the risk as low given the distance from the European sites, the limited potential for the spread over large distances and having regard to the invasive species management plan. I consider that this conclusion is reasonable. I am satisfied that notwithstanding the presence of invasive species within or close to the works area there is no likely significant risk to habitats which are qualifying interests of any European sites within the zone of influence of the proposed development.

Decommissioning

10.3.13. The NIS contains assessment of the decommissioning phase which in all cases for all of the European sites which could be affected is deemed to be similar to the construction phase but of shorter duration and of less intensive nature. In this respect it is noteworthy that some of the infrastructure which is to be put in place will remain in situ. I consider that the conclusions which are drawn in relation to this European site and the other European sites are applicable also to the decommissioning phase.

River Barrow and River Nore SAC (002162)

Conservation Objectives

10.3.14. To maintain or restore the favourable conservation condition of the qualifying interests in River Barrow and River Nore SAC, which is defined by a list of attributes and targets.

Qualifying interests

Desmoulin's whorl snail *Vertigo moulinsiana*

Freshwater pearl mussel *Margaritifera margaritifera (*status under review*)*

White-clawed crayfish *Austropotamobius pallipes*

Sea lamprey *Petromyzon marinus*

Brook lamprey *Lampetra planeri*

River lamprey *Lampetra fluviatilis*

Twaite shad *Alosa fallax*

Atlantic salmon (*Salmo salar*) (only in fresh water)

Estuaries

Mudflats and sandflats not covered by seawater at low tide

Salicornia and other annuals colonizing mud and sand

Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

Otter *Lutra lutra*

Mediterranean salt meadows (*Juncetalia maritimi*)

Killarney fern *Trichomanes speciosum*

Nore freshwater pearl mussel *Margaritifera durrovensis*

Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation

European dry heaths

Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels

* Petrifying springs with tufa formation (*Cratoneurion*)

Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

* Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*).

10.3.15. This European site consists of most of the freshwater stretches of the Barrow and Nore catchments. The western and southern boundaries of the Great Island substation overlap with the SAC boundary lines. The converter station and tail station will be constructed close to the existing substation. The proposed development footprint is 100m north of the SAC boundary. A stormwater discharge point from the converter station site to Newtown River is 150m upstream of the SAC.

10.3.16. The crossing point under Campile River Estuary is within this SAC. The crossing will be undertaken by horizontal directional drilling at a depth of over 10m below the riverbed. The southern HDD compounds is to be positioned outside the SAC boundary at a distance of 10m and 50m from the estuary channel. The northern HDD compound is to be located 150m from the estuary channel and SAC boundary.

10.3.17. The Newtown (Kilmannock) river will be crossed at a location to the north of the proposed converter station site. This river flows into the SAC approximately 375 m downstream of the proposed crossing point.

10.3.18. The construction compound at Lewistown for the onshore cable is about 340m from the SAC.

10.3.19. Aspects of the proposed development that could result in significant effects relate to:

- Direct loss of habitat at the Campile river estuary crossing. The habitats estuaries and mud flat and sandflats not covered by sea water at low tide and Atlantic salt meadows are in the immediate vicinity.
- During construction in the event of inadvertent contamination of surface water there is potential for impacts on habitats and qualifying species.
- During operation of the converter station there could be impacts in the event of inadvertent contamination of surface water and/or groundwater.
- Impacts due to EMF on fish which are qualifying interests or otter prey.

10.3.20. I agree with the applicant's submission that there is a low risk associated with works affecting small water courses during the laying of the cable and that in view of the dilution within the estuary there would be no risk of significant effects on the SAC.

10.3.21. I note that HDD drilling could result in release of bentonite drilling fluids into the surface environment. I agree with the conclusion in the NIS that this would not give rise to significant effects on fish and macro invertebrates as the material would not be described as toxic or hazardous and would also be subject to high levels of dilution. Impacts on habitats cannot be ruled out without further consideration.

10.3.22. The following qualifying interests are terrestrial habitats which do not occur within or in proximity to the proposed development and can be screened out from further consideration:

- European dry heaths,
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels

- * Petrifying springs with tufa formation (*Cratoneurion*)
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
- * Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae).

10.3.23. The following qualifying interests do not occur in estuarine or tidal habitats and can be screened out from further consideration:

- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation.
- Killarney fern
- Desmoulin's whorl snail
- Freshwater pearl mussel
- Nore freshwater pearl mussel
- White-clawed crayfish
- Brook lamprey

10.3.24. The potential impacts and qualifying interests which might be affected, and which are relevant for further consideration are:

Natura 2000 site	**Qualifying interest**	**Potential impacts**	
River Barrow and River Nore SAC	Estuaries Mudflats and sandflats not covered by seawater at low tide *Salicornia* and other annuals colonizing mud and sand Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	Direct habitat loss or indirect habitat loss due to hydrocarbon/chemical spillage and/or breakout of bentonite associated with works at Campile estuary crossing and Newtown (Kilmannock) river. Impacts from frac out and from silt and hydrocarbon impacts could alter the ecology of habitats.	

		Potential water quality impacts associated with the Newtown (Kilmannock) river crossing. Potential water quality impacts associated with construction of the converter station. Surface water discharge to Newtown (Kilmannock) river from the operational converter station could give rise to water quality impacts. Works at Lewistown compound could give rise to water quality impacts.	
	Sea Lamprey River Lamprey Twaite shad Salmon Otter	As these fish species inhabit and/or migrate through estuarine waters there is the possibility of impacts related to surface water quality. Possible impacts to migrating fish due to EMF due to proximity of cable at Camile river estuary crossing. Regarding otter there are potential of impacts on prey availability and disturbance effects related to increased lighting, noise and vibration.	

10.3.25. Section 5.2 provides further description of the 4 no. habitats which are qualifying interests of the River Barrow and River Nore SAC, and which have been identified as having potential for significant effects. This information in particular sets out the attributes, measures and targets relevant to each of the qualifying interests. It

is noted that in relation to the habitat Atlantic salt meadows the area around Dunbrody and the Campile river estuary crossing were surveyed during the Saltmarsh Monitoring Project and the habitat is found in less abundance at the area of the Campile River Estuary crossing.

10.3.26. Section 5.3 provides further description of the species which are qualifying interests of the River Barrow and River Nore SAC and which have been identified as having potential for significant effects. This information in particular sets out the attributes, measures and targets relevant to each of the qualifying interests. In relation to otter a review of the desktop records show otter signs or otter were recorded on 109 occasions and during survey by the applicant otter was also recorded near sections of the cable route at Baginbun Beach, at Cheekpoint, at the Campile River Estuary crossing and at Barrow Bridge close to the Great Island power station. No holts or couches were recorded. Salmon, river and sea lamprey would pass through the estuary and into the river system and twaite shad would be found downstream of the proposed development. Twaite shad spawns in the upper tidal limit of the River Nore. All could potentially be affected by water quality impacts.

Assessment of conservation objectives– habitat loss and water quality impacts and mitigation.

Habitat Loss - direct and indirect.

10.3.27. The potential direct habitat loss or indirect habitat loss due to hydrocarbon/chemical spillage and/or breakout of bentonite associated with works at Campile estuary crossing and Newtown (Kilmannock) river and the proposed mitigation are assessed below.

10.3.28. At the outset it is important to reference the use of HDD as an avoidance mechanism for habitat impacts at Campile river estuary crossing. Mini HDD is described in the applicant's submission as the preferred option at Newtown (Kilmannock) river.

10.3.29. The launch and reception sites for the HDD crossing at Campile river estuary is outside the boundary of the European site and there is no direct habitat loss.

10.3.30. In the event of an open cut methodology being used for crossing of Newtown (Kilmannock) river there is no loss of habitat from the European site as the river is not within the European site.

10.3.31. Impacts from frac out and from silt and hydrocarbon impacts could alter the ecology of habitats. There is potential for indirect habitat loss in the event of breakout of bentonite drilling fluid. This is considered to be of low likelihood and given its non-toxic nature and the fluctuations in silt levels that naturally occur in estuarine environments no significant effect would occur.

10.3.32. It can be concluded that there would be no significant effect on habitats which are qualifying interests as a result of direct habitat loss or indirect effects related to bentonite or the spread of invasive species.

Water quality impacts

10.3.33. The loss of habitats as a result of construction phase spillages of hydrocarbon or release of high levels of siltation could alter aquatic habitats and affect fish species. There are potential water quality impacts associated with the HDD crossings, the crossing of Newtown (Kilmannock) river and with construction at the site of the converter station.

10.3.34. The water quality impacts which may be relevant to qualifying interests are described in section 8.4.1 of the NIS:

- The habitats which are qualifying interests are deemed unlikely to be affected due to dilution and also because of naturally occurring fluctuations and the robust natures of these habitats.
- The impacts from spillages of toxic chemicals, cement, hydrocarbons and other materials could include adverse effects on fish. Due to the limited volumes of such spillages and the unlikeliness of their occurrence and taking into account the available dilution in the rivers, such effects would be of minor significance.
- If of significant magnitude hydrocarbon contamination could impact on qualifying species sea lamprey, river lamprey, twaite shad and Atlantic salmon.
- Significant impacts on fish stocks including fish which are not qualifying interests could reduce prey for otter.
- Surface water discharge from the converter station to Newtown (Kilmannock) river and other potential impacts in the operational stage could give rise to

water quality impacts including discharges to the Newtown (Kilmannock) river in the eastern part of the converter station site by way of the attenuation pond.

- Potential effects related to hydrocarbons, surface water drainage and foul wastewater at the Great Island site.
- The habitats are considered to be robust in relation to the potential water quality impacts.
- The migratory fish which occur in the lower estuary move through the estuary and are present only for limited period of time. Subject to mitigation and the dilution in that environment there will not be any significant impacts on qualifying species by reason of water quality effects.

10.3.35. The mitigation measures specified to minimise the risk and effects of water quality in the construction and operation phase include:

- The employment at a minimum of the measures outlined in the CEMP which is contained in the NIS.
- The adherence to construction best practice measures including the preparation and implementation of detailed method statements. The works will incorporate the relevant elements of a number of specified guidance documents.
- Appropriate on-site induction relating to operations and precautionary measures. Suitable reporting of all incidents and monitoring.
- In the construction phase the specific measures presented will include clear delineation of the working area and minimising of that area and retaining vegetation where possible, procedures relating to emergency response and spillages to be put in place as specified, measures relating to storage locations and monitoring, measures to address siltation to include a consolidation of works area and use of silt fences/swales, measures relating to safe fuelling and to the use of concrete. All contractor compounds will be in areas that are at low risk of flooding.
- Specific measures are set out in relation to the converter station site particularly with respect to surface water drainage during the construction phase.

- Measures are set out relating to the onshore cable route and the handling of surface water including for the HDDs.
- Further measures presented are relevant to the hydrological regime and flooding which will be implemented for the duration of construction and which are proposed to minimise water quality effects.
- Similarly, measures are set out relating to stockpiled materials and site compounds.
- Operational mitigation measures include appropriate management of foul wastewater.
- Use of a surface water drainage system on site which will connect to the existing Great Island substation road drainage.
- Discharge of surface waters to a proposed attenuation pond.
- Siting of transformers in a reinforced concrete bund linked to an underground oil dump tank.
- Suitable use of bunds and retaining area walls and other protective measures.
- In the decommissioning phase the attenuation pond will be filled in. Underground cables will remain in situ. Ecology and invasive species surveys will be carried out and appropriate mitigation undertaken.

10.3.36. The above is a brief summary of the likely significant water quality related effects and the mitigation measures which are presented to address these in both the construction and operational phases. I have considered these measures in conjunction with the overall suite of documents presented including the drawings and the EIAR including associated specialist reports. I am satisfied that the measures to be undertaken are suitable and capable of being successfully implemented.

Assessment of conservation objectives - impacts and mitigation - Migratory fish species and fish which are prey for otter.

10.3.37. Measures which are relevant to water quality overlap with this topic and I refer to the section above. Regarding the qualifying interests sea lamprey, river lamprey, twaite shad and Atlantic salmon and fish as biomass for otter there are a number of

additional specific impacts which require consideration and which I address under the following headings:

- Newtown (Kilmannock) river crossing.
- Noise and vibration.
- Electromagnetic fields.

Newtown (Kilmannock) river crossing

10.3.38. At Newtown (Kilmannock) river the preferred method is a HDD crossing. The river is highly modified and lacks habitat of suitable size for migratory species which are listed as qualifying interests.

10.3.39. The possibility of impacts on the prey of otter is addressed in the NIS. No evidence of otter was recorded along the river, but that situation could change. Newtown (Kilmannock) river is tidal at the point of the proposed crossing. The distribution of certain estuarine fish will vary with the tidal cycle but overall, it is not a high-value habitat for fish. Species such as stickleback and European eel may occur. If open cut methodology is required a fish salvage operation will be conducted prior to damming. Overall, it may be concluded that the river is not of high value for fish stocks and the potential for impacts on biomass prey for otter is not a material consideration.

10.3.40. The mitigation measures which are presented include compliance with IFI guidelines on the protection of fisheries and consultation with IFI with regard to any proposed over pumping at the Newtown (Kilmannock) river crossing.

10.3.41. I consider that there is no likelihood of significant direct or indirect effects on qualifying interests as a result of this element of the proposed development.

Noise and vibration

10.3.42. There is potential that the noise and vibration effects associated with the HDD crossing of the Campile river estuary could impact on migration of sea lamprey, river lamprey, twaite shad and Atlantic salmon passing through the estuary. In section 8.2.2 of the NIS a study of similar works which is described as analogous to the crossing of the Campile estuary is outlined. The applicant relies on the conclusions from this study as well as the general understanding that the impact of underwater noise and vibration due to HDD is not generally considered significant in terms of

impacts on fish. The HDD proposed is at a depth of over 10m below river. I agree with the conclusion presented that no barriers to movement are identified and that there would be no impact on the migratory species listed as qualifying interests for this European site.

10.3.43. I consider that there is no likelihood of significant direct or indirect effects on fish which are qualifying interests or prey for otter as a result of noise or disturbance from this element of the proposed development.

Electromagnetic fields

10.3.44. The applicant in section 8.2.3 reports on studies of the impact from electromagnetic fields on ecology. On this basis it is noted that there is no evidence that lampreys respond to magnetic fields. If salmonids perceive altered magnetic fields, studies indicate that this does not translate to changes in behaviour. Amongst the design solutions which can be applied to mitigate against potential impact on migratory fish a number of these are to be applied. Given the implementation of these measures and the limited time period that migratory fish species will be present in the estuary no significant effect on migratory species is expected. I agree with this conclusion.

Assessment of conservation objectives – impacts and mitigation – otter.

10.3.45. Otter or signs of otter were recorded near sections of the cable route at Baginbun Beach, at Cheekpoint and at the Campile River Estuary crossing. There will be no impacts on otter habitat at these locations. Surveys undertaken extended to 150 m from the proposed works. No holts or couches were recorded in proximity to the proposed works. No evidence of otter was recorded along the Newtown (Kilmannock) river, but that situation could change.

10.3.46. There are potential impacts related to reduced availability of prey which has been addressed above and which I consider will not have a significant effect on otter. There is potential for disturbance effects related to increased lighting, noise and vibration, which are relevant to both construction and operation phases. Impacts from lighting, noise, vibration and disturbance on otter is assessed in section 8.3 of the NIS. During site works disturbance from these impacts could lead to changes in feeding behaviour which might impact on reproductive success. Disturbance of

breeding otter could also have an impact on the overall populations within the European site.

10.3.47. The specific targets identified in the conservation objectives relate to the distribution, extent of terrestrial habitats, extent of marine habitat and of freshwater and lake habitats, couching sites and holts and fish biomass available.

10.3.48. The undertaking of works which generate most noise and disturbance at the converter station site will occur during daylight and will not therefore have a significant impact on the species which is largely nocturnal.

10.3.49. Some works including HDD will occur on a 24-hour a day basis for the duration of tunnelling and have the capacity for short-term disturbance, which will be sporadic. The undertaking of watercourse crossings by use of HDD ensures no direct loss of foraging or breeding habitat. The ability of otter to move away from disturbance will ensure no significant impact on feeding behaviour. The lack of holts or resting areas within 150 m of the proposed works will ensure no impact from lighting during construction.

10.3.50. In the operation phase there will be a long-term increase in noise and activity at the converter station, but no otter was recorded along Newtown river within 150m. A preconstruction otter survey and further remedy is included as a mitigation measure in 9.2.9. The ability of otter to acclimatise to noisy environments is referenced and the existing context of the powerplant is noted. As mitigation, it is proposed that external lighting would be switched off during hours of darkness to avoid unnecessary impacts on otter and other species.

10.3.51. At Baginbun Beach in the operation phase the increased availability of parking may increase activity including the presence of dogs at this location. Otters would be anticipated to readily habituate in the circumstances.

10.3.52. Immediately prior to construction further otter survey will be carried out at Baginbun Beach, the Campile river estuary crossing and the Newtown (Kilmannock) river crossing. If holts or resting areas were located within 150 m of the proposed works work would be halted and the area avoided if possible. Otherwise the supervising ecologist would determine appropriate means of minimising impacts and if required would obtain a derogation licence to facilitate licensed exclusion of the site.

10.3.53. I consider that subject to the implementation of the mitigation measures presented, which are suitable for the proposed development, there is no likelihood of significant effects on otter.

In combination effects with other plans and projects and activities

10.3.54. Section 8.6 of the NIS identifies other plans, programs and projects that may, in combination produce a significant impact. In relation to the conservation objectives of the River Barrow and River Nore SAC it is concluded in the NIS that no potential cumulative impacts have been identified.

10.3.55. The Great Island – Kilkenny 110 kV line Uprate Project primarily includes restringing and replacement structures. The Great Island Energy Storage System includes construction on a 1.1 ha site close to the site of the converter station. Potential cumulative effects could arise in the event of concurrent construction of the bulk excavation works on the converter station site and these two projects. The applicant has committed to plan and phase works in consultation with the construction management team for the energy storage system project. Potential for cumulative noise and vibration effects would be negligible due to physical separation. I accept the applicant's conclusion that subject to implementation of best practice standard construction environmental measures including the CEMP and traffic management plan, there would be no significant cumulative effects.

10.3.56. Greenlink Offshore would not give rise to significant adverse water quality or other effects which could result in cumulative impacts on qualifying interests.

10.3.57. The operation of Great Island Power Plant is governed by licence and any noise or other environmental effects would have been considered as part of the baseline conditions. I agree with the applicant's conclusion that no cumulative impact will occur.

10.3.58. In conclusion no potential in combination effects are likely.

Integrity test

10.3.59. Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of River Barrow and River Nore SAC in view of the Conservation Objectives of this site.

10.3.60. This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

Hook Head SAC (000764)

Conservation Objectives

10.3.61. To maintain the favourable conservation condition of the qualifying interests in Hook Head SAC, which is defined by a list of attributes and targets.

Qualifying interests

Large shallow inlets and bays

Reefs

Vegetated sea cliffs of the Atlantic and Baltic coasts.

10.3.62. The site consists of a long section of coastline and is of high geological importance. The proposed Landfall site forms part of the Hook Head SAC and HDD drilling under the cliffs is proposed with both launch and reception pits being located outside of the SAC. The HDD compounds will be 162 m from the SAC boundary and the proposed car park 10m west of the SAC boundary.

10.3.63. Impacts on Vegetated sea cliffs of the Atlantic and Baltic coasts are assessed in the *NIS – Ireland Onshore*. Impacts on marine habitats Large shallow inlets and bays and Reefs are assessed in the companion NIS *Greenlink Marine Natura Impact Statement.* Both documents assess cumulative impacts. I have considered the contents of both.

10.3.64. The conservation objectives for Hook Head SAC is to maintain the favourable conservation condition of Vegetated sea cliffs of the Atlantic and Baltic coasts, of Large shallow inlets and bays and of Reefs, which are defined by a list of attributes and targets.

10.3.65. The cliffs at Baginbun Beach are classified as Vegetated sea cliffs of the Atlantic and Baltic coasts. Sea cliffs can be broadly divided into two categories both of which are covered by the Annex I habitat. The cliffs at Baginbun Beach is described as hard (or rocky) cliffs.

10.3.66. The habitats Large shallow inlets and bays and of Reefs are identified by NPWS as being present at the relevant section of coastline.

10.3.67. Regarding aspects of the proposed development that could result in a significant effect on Vegetated sea cliffs of the Atlantic and Baltic coasts Large shallow inlets and bays and Reefs:

- The construction compounds and HDD launch and reception pits and the TJB are all outside Hook Head SAC.
- During construction in the event of destabilisation of cliffs there would be disturbance to or loss of qualifying interest Vegetated sea cliffs of the Atlantic and Baltic coasts.
- In the event of high levels of siltation and hydrocarbons in surface water during construction there could be impacts on the Vegetated sea cliffs habitat and also on Large shallow inlets and bays and Reefs which are identified as being located immediately adjacent the shoreline.
- Potential effects related to frac out are considered to be low risk and secondly if they did occur would not have significant effects on vegetation on the cliffs due to the non-toxic nature of drilling fluid used.
- Due to topography run-off from the car park will not impact on the sea cliffs or shoreline or offshore habitats.
- Three-cornered leek was recorded adjacent the beach and close to the proposed car parking area.

10.3.68. As set out below I consider that aspects of the proposed development that could result in significant effect on Large shallow inlets and bays and Reefs are all related to the Irish Marine components of the project:

Assessment of conservation objectives - impacts and mitigation -Vegetated sea cliffs of the Atlantic and Baltic coasts .

10.3.69. The use of HDD techniques facilitates avoidance of direct impacts on habitats at this location. All workings associated with the Landfall site including the community gain extension are in low value agricultural lands and do not have any effect on the habitat which is a qualifying interest for the SAC.

10.3.70. The conceptual HDD design at this location has 18 m depth of cover at the base of the cliffs.

10.3.71. Any loss of drilling fluid would in itself be an unlikely event. If it occurred, the loss of drilling fluid affects would be difficult to discern in the estuary/marine environment where there is a natural silt content.

10.3.72. In addition, it is accepted that in saltwater environments bentonite drilling fluid if present would quickly degrade and would be dispersed by currents and wave action.

10.3.73. It may be concluded that there is no likelihood of a significant effect on the habitat vegetation on the cliffs and that there is no significant risk of cliff destabilisation.

10.3.74. Regarding potential surface water quality effects related to risks of siltation and spillages, it is considered that any significant effect can be mitigated by the measures which will be applied in which I have summarised earlier.

10.3.75. A range of measures are presented in the applicant submission in relation to the contractor compounds and these are also relevant measures, which I consider are capable of implementation.

10.3.76. Regarding the risk of spread of invasive species the high-risk invasive species three-cornered leek is not within the proposed works area. The avoidance of the species is proposed, which I consider is feasible. In addition, the supervising ecologist will provide an updated Invasive Species Management Plan.

Assessment of conservation objectives - impacts and mitigation - Reefs and Large shallow inlets and bays .

10.3.77. In the foregoing and in order to consider the worst case scenario and in the absence of any other information to the contrary I have assumed that Reefs and Large shallow inlets and bays habitats which are qualifying interests of this European site are found at or close to the high water mark which constitutes the limit of the site of the proposed development. As such these habitats could be subject to water quality impacts and impacts due to bentonite. The proposed development would not give rise to any other direct or indirect impacts on these habitats.

10.3.78. Regarding water quality effects on Reefs and Large shallow inlets and bays my comments above in relation to the location of the proposed works and the mitigation measures refer. In addition, I have referred to the flocculation and

dispersion of bentonite in the marine environment. I consider that it can be concluded that the proposed development would not result in significant effects on these qualifying interests once mitigation is taken into account.

10.3.79. Regarding the Irish Marine component of the project it is possible that disturbance due to cable trenching and rock protection could reduce the extent and distribution of reefs. In addition, the qualifying interest Shallow inlets and bays could be marginally reduced by external cable protection at the HDD exit point. Specific mitigation is set out in the Greenlink Marine NIS wherein it is also concluded that subject to mitigation there will be no significant effects on the conservation objectives for the site. In this respect I refer to the proposed implementation of exclusion zones around reef habitats and the location of the potential HDD exit in water depths greater than 9 m where sediment unit is thicker.

10.3.80. I respond now to some comments made in the submission of DAU. Firstly it is suggested that a suitably sized ecological buffer be left between the car park and the SAC which might entail landscaping of the existing car park adjacent to the SAC with suitable native species. The applicant states that this would not provide any ecological benefits in view of the qualifying interests for the SAC in the absence of benefit to fauna. I consider that the applicant's response is reasonable and do not recommend that the Board adopt the measures suggested by DAU.

10.3.81. The report of DAU queries a proposed French drain to be located at the south of the car park at Baginbun Beach and also expresses concern that the proposed drain outfall does not have a hydrocarbon interceptor in view of the proximity to the SAC. In response the applicant notes that the drainage for the proposed new road layout and parking taking into account the submission no longer proposes a French drain at this location. In general, the car park and road are to be drained by natural infiltration and in this regard a hydrocarbon interceptor is not part of the design.

In combination effects

10.3.82. Regarding in combination effects on the qualifying interests of Hook Head SAC I consider that the only relevant proposal is the Irish Marine components of the Project. It has been concluded that the Irish Marine components would not result in adverse effects on the conservation objectives of Hook Head SAC. There will be no adverse significant effect to qualifying interests Reefs and Large shallow inlets and

bays. The proposed development is separated from Reefs and Large shallow inlets and bays and would not result in significant effects on this qualifying interests.

10.3.83. It can therefore be concluded that there will be no significant in combination effects to the European site.

Integrity test

10.3.84. Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of Hook Head SAC in view of the Conservation Objectives of this site.

10.3.85. This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

Bannow Bay SAC (000697)

Conservation Objectives

10.3.86. To maintain or restore the favourable conservation condition of the qualifying interests in Bannow Bay SAC, which is defined by a list of attributes and targets.

Qualifying interests

Estuaries

Mudflats and sandflats not covered by seawater at low tide

Annual vegetation of drift lines

Perennial vegetation of stony banks

Salicornia and other annuals colonizing mud and sand

Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

Mediterranean salt meadows (*Juncetalia maritimi*)

Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

Embryonic shifting dunes

Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')

*Fixed coastal dunes with herbaceous vegetation ('grey dunes')

Assessment of conservation objectives - impacts and mitigation

10.3.87. The site is located 330 m north of the onshore cable route at Baginbun Beach. Although it is close to the proposed works the connectivity between the works area and the habitats of this European site and the potential for impacts is limited. The marine connectivity involves a distant and circuitous route to many of the relevant qualifying interests and there is considered to be very low possibility of any significant effects related to the HDD works at Baginbun Beach and thus no real possibility of impacts on the European site. The distance is too great for there to be any concern relating to dust or other air emissions. The laying of the onshore cable route will include requirement to cross small water courses which discharge into the estuary within the European site. I consider that this is the only significant pathway of effects.

10.3.88. Therefore, regarding the potential impacts there is a risk associated with the works within the road network and in the crossing of water courses from increased silt and / or spillages. Such impacts could potentially impact on marine and estuarine habitats which are qualifying interests of the European site. However it is considered that there is a low risk of significant accidental discharges of silt or pollution and in view of the distance involved and the dilution as well as natural fluctuations of silt in the receiving environment and the robust nature of the habitats it can be concluded that no potential impact will result from surface water emissions. In this respect I refer in particular to the surface water mitigation measures which I have outlined earlier in my consideration of the River Barrow and River Nore SAC. ¶

In combination effects

10.3.89. Regarding potential in combination effects on the qualifying interests of Bannow Bay SAC I consider that the only relevant proposed development is the Greenlink Offshore Project. I consider that it may be concluded that Irish Marine components would not result in significant effects on the conservation objectives of Bannow Bay SAC and note that the Greenlink Marine NIS does not include this site in its appropriate assessment, which I consider was reasonable.

10.3.90. It can therefore be concluded that there will be no significant in combination effects to the European site.

Integrity test

10.3.91. Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of Bannow Bay SAC in view of the Conservation Objectives of this site.

10.3.92. This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

Lower River Suir SAC (002137)

Conservation objectives

10.3.93. To maintain or restore the favourable conservation condition of the qualifying interests in Lower River Suir SAC, which is defined by a list of attributes and targets.

Qualifying interests

Freshwater Pearl Mussel *Margaritifera margaritifera*

White-clawed Crayfish *Austropotamobius pallipes*

Sea Lamprey *Petromyzon marinus*

Brook Lamprey *Lampetra planeri*

River Lamprey *Lampetra fluviatilis*

Twaite Shad *Alosa fallax fallax*

Salmon *Salmo salar*

Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*

Otter *Lutra lutra*

Mediterranean salt meadows (*Juncetalia maritimi*)

Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation

Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels

Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

Alluvial forests *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)

Taxus baccata woods of the British Isles

10.3.94. The European site is generally west of the site of the proposed development. It is located 4.3 km upstream of the Campile River Estuary crossing and 2.7 km upstream of the Newtown river crossing and 1.4 km west of the converter station site.

10.3.95. Aspects of the project that could result in significant effect include:

- during construction in the event of inadvertent contamination of surface water there is potential for impacts on habitats and qualifying species
- during operation of the converter station there could be impacts in the event of inadvertent contamination of surface water and/or groundwater
- impacts due to lighting, noise, vibration and disturbance during construction and operation
- impacts due to EMF on fish which are qualifying interests or otter prey.

10.3.96. It is considered that the potential impacts on the estuarine environment associated with the construction and operation of the proposed development and which could give rise to increased silt levels or spillages would not give rise to potential impacts on the following qualifying interests due to the low risk of significant accidental discharges, the distance involved and the high level of dilution and robust nature of the habitats:

- Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*
- Mediterranean salt meadows (*Juncetalia maritimi*)

10.3.97. The following qualifying interests are terrestrial habitats which do not occur within or in proximity to the proposed development and can be screened out from further consideration:

- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
- Alluvial forests *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)

- *Taxus baccata* woods of the British Isles.

10.3.98. The following qualifying interests do not occur in estuarine or tidal habitats and can be screened out from further consideration:

- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation.
- Freshwater pearl mussel
- White-clawed crayfish
- Brook lamprey.

10.3.99. Therefore, the potential impacts and qualifying interests affected which are relevant for further consideration are:

Natura 2000 site	**Qualifying interest**	**Potential impacts**	
Lower River Suir SAC	Sea Lamprey River Lamprey Twaite Shad Salmon Otter	In the event of water quality impacts associated with the construction or operation phases of the development the fish species which inhabit and/or migrate through the Suir estuary there is potential for significant adverse effects. Regarding otter there are potential of impacts on prey availability. I refer below also to potential disturbance effects related to increased lighting, noise and vibration.	

10.3.100. Section 5.3 provides further description of the species which are qualifying interests of the Lower River Suir SAC and which have been identified as having potential for significant effects. This information in particular sets out the attributes, measures and targets relevant to each of the qualifying interests. Salmon, river and

sea lamprey would pass through the estuary and into the river system and twaite shad would be found downstream of the proposed development. The river Suir is one of only three known spawning grounds in the country for twaite shad. All could potentially be affected by water quality impacts. I consider that there are no other likely impacts on fish species or on otter. In this respect I note that the fish species who might be impacted by EMF as a result of proximity to Campile river estuary crossing have been considered under the assessment of River Barrow and River Nore SAC.

10.3.101. In relation to otter a review of the desktop records show that otter signs or otter were recorded on 109 occasions and during survey by the applicant otter was also recorded near sections of the cable route at the Campile River Estuary crossing and at Barrow Bridge close to the Great Island power station. No holts or couches were recorded. The converter station site is approximately 1.4 km to the east of this SAC. Therefore, I consider that any noise and visual disturbance effects which could impact otter would be more likely to be associated with individuals from River Barrow and River Nore SAC and are assessed above in that context.

Assessment of conservation objectives – impacts and mitigation – fish.

10.3.102. In the event of significant hydrocarbon contamination or other significant water quality impacts the proposed development could impact on the fish species which are qualifying interests and which would be within the zone of influence namely sea lamprey, River lamprey, Twaite shad and Atlantic salmon. High levels of silt could impact on fish species in particular spawning salmonids.

10.3.103. In my assessment above of the water quality impacts and mitigation relevant to the fish species which are qualifying interests of the River Barrow and River Nore SAC I set out a selected number of the relevant water quality impacts and of the extensive range of mitigation which has been presented by the applicant.

10.3.104. I conclude from the evidence presented that there is no reasonable likelihood of significant effects on the fish species which are qualifying interests of the Lower River Suir SAC.

Assessment of conservation objectives – impacts and mitigation – otter.

10.3.105. Significant impacts on fish stocks could have indirect impacts on otter as a result of a reduction in prey activity.

10.3.106. It is considered that there will be no significant impact on fish biomass due to water quality impacts and therefore no indirect effect on otter.

In combination effects

10.3.107. I have earlier assessed the potential for in combination effects in relation to fish species which are qualifying interests of the Lower River Barrow and River Nore SAC and concluded that there is no reasonable likelihood of significant effects on those fish species. All of the relevant species would utilise the estuary as a migratory route. The potential for in combination effects in terms of the projects which would be relevant would be the same. Therefore, the same conclusions may be drawn for the same species namely sea lamprey, river lamprey, twaite shad, and Atlantic salmon in relation to the qualifying interests of the Lower River Suir SAC.

10.3.108. In conclusion no potential in combination effects are likely.

Integrity test

10.3.109. Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of the Lower River Suir SAC in view of the Conservation Objectives of this site.

10.3.110. This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

Bannow Bay SPA (004033)

Conservation Objectives

10.3.111. To maintain the favourable conservation condition of the bird species and wetlands listed as special conservation interests, which is defined by a list of attributes and targets.

Qualifying interests

Light-bellied Brent Goose (*Branta bernicla hrota*)

Shelduck (*Tadorna tadorna*)

Pintail (*Anas acuta*)

Oystercatcher (*Haematopus ostralegus*)

Golden Plover (*Pluvialis apricaria*)

Grey Plover (*Pluvialis squatarola*)

Lapwing (*Vanellus vanellus*)

Knot (*Calidris canutus*)

Dunlin (*Calidris alpina*)

Black-tailed Godwit (*Limosa limosa*)

Bar-tailed Godwit (*Limosa lapponica*)

Curlew (*Numenius arquata*)

Redshank (*Tringa totanus*)

Wetlands.

10.3.112. This European site is located about 1.3 km to the north-east of the landfall site at Baginbun Beach. It is a large site which comprises mainly marine area. Bannow Bay itself is a large sheltered estuarine system which is connected to the sea by a narrow outlet. The sediments have a rich macro invertebrate fauna. There are very extensive intertidal mud and sand flats and well-developed salt marshes.

10.3.113. The site regularly supports more than 1% of the all-Ireland population or the biogeographical population of the bird species which are qualifying interests. All birds are referenced in terms of the winter season. The wetland is an additional special conservation interest.

10.3.114. Table 24 of the NIS sets out the qualifying interest species for which a potential impact has been identified and the specific attributes, measures and targets which are relevant. The NIS in section 7.3 and appendix 4 reports on winter bird counts. Winter bird surveys were taken between November 2015 and March 2016. The annual Irish wetland bird survey is also reported on. Further winter bird surveys were undertaken in the winter of 2018 – 2019. The selected vantage points are spread throughout the study area in all 26 species were recorded of which 11 were at Baginbun Beach, 15 species to the south of the disused railway line, 12 species to the north of the disused railway line and 10 species west of Dunbrody Bridge were recorded.

10.3.115. Regarding the results of surveys, a total of 26 species were recorded from the site visits during the winter bird surveys. Of these five annex I bird species were recorded. Overall a total of five species listed as qualifying interests for Bannow Bay SPA were recorded either foraging or loafing/roosting within the survey sites namely redshank, curlew, dunlin, black tailed godwit and oystercatcher. Two species listed as qualifying interests were recorded at Baginbun Beach i.e. redshank and oystercatcher while four species were recorded in proximity to the Campile river crossing i.e. redshank, curlew, dunlin and black tailed godwit. The mudflats habitat along the Campile estuary is of local value for the waders. A high tide roost of redshank was recorded south of the railway, along the riverbank.

10.3.116. Regarding the numbers of birds recorded in this surveys undertaken it is relevant to note that none of the species were in high abundance which would be considered important at a national level.

10.3.117. Regarding aspects of the proposed development that could result in a significant effect on qualifying species:

- Impacts from lighting, noise, vibration and disturbance during construction period the construction phase will not impact on foraging birds within the SPA boundary. This conclusion may be drawn in view of the distance involved.
- Impacts on qualifying bird species feeding outside of the SPA boundary could occur. The significant elements of the proposed development are outlined in section 8.3 of the NIS.
- The potential noise and vibration impacts are associated with site preparation works at the converter station and tail station site, trench and HDD, excavation, foundation construction activities and other construction activities and vehicle movements.
- The highest noise levels will be generated during site preparation, excavation and foundation stage. At the converter station site rock will be excavated using rock splitting or blasting or a combination. Rock crushing may also be required. During construction there will be use of tower mounted 1000W floodlights that will be cowled and angled downwards to minimise spillage. There would be no directional lighting towards the estuary or shoreline habitats.

- In the operation phase ongoing noise and disturbance will be present at the converter station site. At this location there are already high existing levels of noise and activity. This location is distant from the European site. Given the ability of winter birds to habitualise to increased light, noise and activity no impacts on qualifying interest species is predicted. A similar conclusion may be drawn in relation to decommissioning.
- During construction in the event of inadvertent contamination of surface water there is potential for impacts on habitats and qualifying species. Significant adverse water quality effects could affect macro invertebrate which are prey for birds.
- Direct loss of habitat at the Campile River Estuary crossing. The habitats estuaries and mud flat and sand flats not covered by sea water at low tide and Atlantic salt meadows are in the immediate vicinity.
- During operation of the converter station there could be impacts in the event of inadvertent contamination of surface water and/or groundwater.
- There is potential for disturbance of birds which are special conservation interests, and which utilise Baginbun Beach and other surrounding areas for feeding. These impacts would include disturbance from light, noise and vibration during construction. Potential water quality effects could give rise to adverse effects on feeding resources.

Impacts and mitigation

10.3.118. Regarding potential direct habitat loss, the use of HDD methodology avoids loss of habitat for wintering birds utilising the two main areas of importance outside the limits of the European site, namely Baginbun Beach and Campile river estuary.

10.3.119. Noise, vibration, lighting and disturbance levels will increase during construction phase throughout the study area. The submission of DAU notes the proposal to undertake blasting and rock breaking at the converter station site and recommends that this take place outside the season for wintering birds. This comment is made in the context of the reference to the 320m separation between the Great Island site and Waterford estuary and the importance of that habitat for the protection birds.

10.3.120. The applicant's response notes the site context and the results of the noise surveys including at NSL1 which is 75m east of the SAC and sets out the predicted noise levels at two locations near the site. At the Bannow railway bridge and other locations over 700m away the noise levels are predicted to be under 56dB. At the nearest foraging area for waterfowl, Kearn's Weir, predicted noise levels of 61-64dB are anticipated. The applicant also provides results of additional survey undertaken in March which identified only one Annex I species at these locations and none of the species recorded are special conservation interests of Bannow Bay SPA. Based on referenced scientific papers 70dB is referenced as the threshold beyond which disturbance to estuarine bird species can be predicted to occur. It is also noted that the greatest levels of disturbance response typically occur when there is a great difference between ambient noise levels and peak noise levels. The applicant's position is that the waterfowl using the Waterford harbour mudflats in the vicinity of the proposed development site are already subject to considerable levels of noise and disturbance.

10.3.121. In view of the predicted noise levels at the nearest mudflats, the species which have been recorded at the location, the background noise levels and the availability of alternative habitat as well as the temporary duration of the works, it can be concluded that no ex situ impacts on special conservation interest species for the European site are predicted as a result of noise and disturbance.

10.3.122. Regarding the Campile river estuary crossing all works in close proximity will take place outside the peak season for wintering birds to prevent disturbance to wintering species utilising the sites during this period. I consider that this measure is reasonable and appropriate at this location in view of their proximity of the HDD pits and construction compounds to quite large areas of habitat of interest and used by the qualifying interests.

10.3.123. Regarding alternative habitat available to benthic foraging divers there are large areas of coastal waters available to the species at Baginbun Beach and any potential disturbance would be minimal in relation to alternative habitat available.

10.3.124. Having regard to the above it can be concluded that there would not be significant effects on the ex situ use of lands in the vicinity of the proposed development by reason of noise or disturbance effects.

10.3.125. It may be concluded that following implementation of the mitigation measures which have been described earlier that no significant impacts on surface water or groundwater quality which could impact on habitats or feed sources for birds will occur.

In combination effects with other plans and projects and activities

10.3.126. Potential in combination effects could arise in the event of concurrent construction of the bulk excavation works on the converter station site and the 110kV Uprate Project and the Great Island Energy Storage System. The applicant has committed to plan and phase works in consultation with the construction management team for the energy storage system project. Potential for cumulative noise and vibration effects would be negligible due to physical separation. I accept the applicant's conclusion that subject to implementation of best practice standard construction environmental measures including the CEMP and traffic management plan, there would be no significant cumulative effects.

10.3.127. Greenlink Offshore would not give rise to significant adverse water quality, noise or disturbance effects which could result in cumulative impacts on wintering birds using the Baginbun Beach area.

10.3.128. The operation of Great Island Power Plant is governed by licence and any noise or other environmental effects would have been considered as part of the baseline conditions. I agree with the applicant's conclusion that no cumulative impact will occur.

10.3.129. In conclusion no potential in combination effects are likely.

Integrity test

10.3.130. Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of Bannow Bay SPA in view of the Conservation Objectives of this site.

10.3.131. This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

Appropriate Assessment Conclusion

10.3.132. The Greenlink Ireland Onshore Project has been considered in light of the assessment requirements of Sections 177U and 177V of the Planning and Development Act 2000 as amended.

Having carried out screening for Appropriate Assessment of the project, it was concluded that it may have a significant effect on River Barrow and River Nore SAC (002162), Hook Head SAC (000764), Bannow Bay SAC (000697), Lower River Suir SAC (002137) and Bannow Bay SPA (004033).

10.3.133. Consequently, an Appropriate Assessment was required of the implications of the project on the qualifying features of those sites in light of their Conservation Objectives.

10.3.134. Following an Appropriate Assessment, it has been ascertained that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the European sites River Barrow and River Nore SAC (002162), Hook Head SAC (000764), Bannow Bay SAC (000697), Lower River Suir SAC (002137) and Bannow Bay SPA (004033), or any other European site, in view of the sites' Conservation Objectives.

10.3.135. This conclusion is based on a complete assessment of all aspects of the proposed project and there is no reasonable doubt as to the absence of adverse effects.

11.0 Recommendation

I recommend that the Board grant permission in accordance with the recommendation below.

DRAFT ORDER

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

European legislation and policy including of particular relevance:

- The EU TEN-E Regulation 347/2013 which sets out guidelines for the timely development and interoperability of priority corridors and areas of trans-European energy infrastructure and under which the project is designated as a project of common interest.

- The European Commission Framework Strategy for a Resilient Energy Union (COM/2015/080) which launched the 'Energy Union', which establishes related and mutually reinforcing dimensions relating to energy security and diversification, energy integration and efficiency, innovation, and climate action and set interconnection targets to be achieved by member states.
- Directive 2014/52/EU amending Directive 2011/92/EU (EIA Directive) on the assessment of the effects of certain public and private projects on the environment.
- 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.

National policy provisions including of particular relevance:

- Ireland's Transition to a Low Carbon Energy Future 2015 – 2030, the Energy White Paper which included the potential benefits of electricity interconnection and committed to promoting and facilitating interconnection with other countries and regions.
- Ireland's Grid Development Strategy, Your Grid, Your Tomorrow, 2017, which identified the need for investment in the electricity transmission system and for a long-term strategy to develop the electricity grid to ensure a long-term sustainable and competitive energy future for Ireland and identified the need to explore more interconnection with other countries in the context of the change to a competitive, low carbon energy system.
- National policy on Electricity Interconnection in Ireland, 2018, which indicated that the EU wide goal of completing the internal energy market requires physical infrastructure of interconnection and committed to supporting appropriate interconnection development.
- The Climate Action Plan 2019 which embeds the process of setting binding and ambitious emissions reductions targets in law.
- The National Planning Framework Project Ireland 2040 including National Strategic Outcome 8 which relates to transition to a low carbon and climate

resilient society, identifies the need for new energy systems and transmission grids for a more distributed and renewables focused energy generation system and specifically supports exploration of EU interconnection options to strengthen energy security and resilience.

- The National Development Plan 2018 – 2027, which identifies the transition to a low carbon and resilient society as a national strategic outcome and identifies the need for further interconnection to increase energy security and facilitate the more variable electricity generation on the grid.

Regional policy provisions including of particular relevance:

- Regional Spatial and Economic Strategy for the Southern Region 2020 including objective RPO 222 to support and facilitate the development of new transmission infrastructure projects that might be brought forward in the lifetime of this plan under Eirgrid's 2017 Grid Development Strategy to serve the existing and future needs of the region and strengthen all Ireland energy infrastructure and interconnection capacity

Local policy provisions including of particular relevance:

- Objective EN04 of the Wexford County Development Plan, which refers to facilitating the provision of and improvements to energy networks in principle demonstrating a need for the development and that it is suitable.

The following matters:

(a) The significant benefits to the national electricity transmission grid,

(b) The alternatives considered and the rationale for connecting to the national grid at the selected location,

(c) The established landscape character at Great Island,

(d) The distance to dwellings or other sensitive receptors from the proposed development,

(e) The nature and scale and design of the proposed development,

(f) The submissions on file including those from the Welsh Government, the prescribed bodies and the planning authority,

(g) The range of proposed mitigation measures set out in the submitted in the documentation lodged including the Environmental Impact Assessment Report, and Natura Impact Statement incorporating appropriate assessment screening.

(h) The report and recommendation of the Inspector.

Environmental Impact Assessment

The Board completed an Environmental Impact Assessment of the proposed development taking into account:

- The nature, scale and extent of the proposed development,
- The Environmental Impact Assessment Report and associated documentation submitted in support of the application,
- The submissions made in the course of the application and
- The Inspector's report.

The Board considered that the Environmental Impact Assessment Report, supported by the documentation submitted by the applicant, adequately considers alternatives to the proposed development and identifies and describes adequately the direct, indirect, secondary and cumulative effects of the proposed development on the environment.

The Board agreed with the examination, set out in the Inspector's report, of the information contained in the Environmental Impact Assessment Report and associated documentation submitted by the applicant and submissions made in the course of the application.

The Board considered, and agreed with the Inspector's reasoned conclusions, that the main significant direct and indirect effects of the proposed development on the environment are as follows:

Significant positive long-term transboundary impacts through provision of the interconnector which will support renewable energies and provide for security and continuity of electricity supply.

Significant positive long-term beneficial effects on climate due to the indirect effect of reduction in greenhouse gas emissions associated with fossil fuel generation. The replacement of fossil fuel generation with renewables will

result in significant long-term positive effects on air quality, biodiversity, population and human health.

Short-term negative impacts on biodiversity as a result of the removal of scrub woodland at the site of the proposed converter station.

Permanent landscape change of the site from an open and widely visible agricultural hillside to an industrial infrastructure use with screen mounding and woodland planting. This will be a significant landscape change and an intensification of the industrial character. Permanent moderate visual impact on views from the north and permanent slight impacts on views to the east and south.

Short-term significant impacts on residents and road users in the vicinity of the cable trench excavation and cable installation for the duration of works. Short-term moderate impact on road users in the vicinity of the converter station.

Short-term significant effects on land use from temporary occupation of farmland and disturbance to services during construction. Long-term slight negative effects from restrictions on activities and development over the cable wayleave.

Slight adverse long-term effects on resource usage related to the running of the converter station and tail station.

Short-term negative impacts on population and human health as a result of noise and road closures.

The Board is satisfied that this reasoned conclusion is up to date at the time of taking this decision.

Appropriate Assessment: Stage 1:

The Board considered the Natura Impact Statement and all the other relevant submissions and carried out both an appropriate assessment screening exercise and an appropriate assessment in relation to the potential effects of the proposed development on designated European Sites. The Board agreed with and adopted the screening assessment carried out and conclusions reached in the Inspector's report that the River Barrow and River Nore SAC, Hook Head SAC, Bannow Bay SAC,

Lower River Suir SAC and Bannow Bay SPA are the only European Sites in respect of which the proposed development has the potential to have a significant effect.

Appropriate Assessment: Stage 2:

The Board considered the Natura Impact Statement and associated documentation submitted with the application, the mitigation measures contained therein, the submissions and observations on file, and the Inspector's assessment. The Board completed an Appropriate Assessment of the implications of the proposed development for the aforementioned European Sites 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 Appropriate Assessment, the Board considered, in particular, the following:

i. the likely direct and indirect impacts arising from the proposed development both individually or in combination with other plans or projects,

ii. the mitigation measures which are included as part of the current proposal, and

iii. the Conservation Objectives for the European Sites.

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 aforementioned European Sites, having regard to the sites' 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 sites' Conservation Objectives.

Proper Planning and Sustainable Development

The Board considered that, subject to compliance with the conditions set out below, the proposed development would provide for the strengthening of the national electricity transmission grid and thereby increase security of supply and support the transition to low carbon electricity supply and would be acceptable in terms of landscape, cultural heritage, air, noise and vibration impacts and impacts on local residents, biodiversity and traffic and would not result in a risk of major accident or

disaster. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

CONDITIONS

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application, as supplemented by the information received on 30 April 2021, 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 development shall be carried out and completed in accordance with the agreed particulars.

   In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

   Reason: In the interest of clarity.

2. All of the environmental, construction and ecological mitigation measures set out in the Environmental Impact Assessment Report and Natura Impact Statement and other particulars submitted with the application shall be implemented by the developer in conjunction with the timelines set out therein, except as may otherwise be required in order to comply with the conditions of this order.

   Reason: In the interest of clarity and the protection of the environment during the construction and operational phases of the development.

3. Prior to the commencement of any development at Great Island, a detailed Landscape Plan shall be submitted to the planning authority for written agreement. This shall include proposals for screening of views to the converter station from the east and south.

   The plan shall be carried out within the first planting season following commencement of construction of the proposed development.

   The plan shall include a 5-year management scheme.

   Reason: To assist in screening the proposed development and ensure that it is satisfactorily integrated into the landscape and minimise impacts on views from

Dunbrody Abbey and Cheekpoint and other lands to the south and east and in the interest of visual amenity.

4. 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.

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

5. Prior to commencement of development, a detailed Construction Environmental Management Plan (CEMP) for the construction phase shall be submitted to and agreed in writing with the planning authority, generally in accordance with the CEMP included in the Environmental Impact Assessment Report. The detailed CEMP shall incorporate the following:

   (a) a detailed plan for the construction phase incorporating, inter alia, construction programme, supervisory measures, noise, dust and surface water management measures including appointment of a community liaison officer, construction hours and the management, transport and disposal of construction waste;

   (b) a comprehensive programme for the implementation of all monitoring commitments made in the application and supporting documentation during the construction period;

   (c) an emergency response plan;

   (d) a community laision plan;

   (e) a construction stage traffic management plan incorporating restricted speed limits and proposals to ensure continued safe use of the public roads and access to all amenities and facilities with particular reference to vulnerable users and availability of parking at coastal amenities;

   (f) proposals for pre-construction and post construction road surveys and for roads reinstatement;

   (g) proposals for measures to prevent the spread of invasive species including an updated Invasive Species Management Plan;

(h) . a prohibition on removal of vegetation and hedgerow outside the period of September to February inclusive.

A record of daily checks that the works are being undertaken in accordance with the Construction Environmental Management Plan shall be kept for inspection by the planning authority.

Reason: In the interest of environmental protection and orderly development.

6. The developer shall facilitate the archaeological appraisal of the site and shall provide for the preservation, recording and protection of archaeological materials or features which may exist within the site. In this regard, the developer shall:

(a) notify the 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, and

(b) employ a suitably qualified archaeologist prior to the commencement of development.

The archaeologist shall assess the site and monitor all site development works. The assessment shall address the following issues:

(i) the nature and location of any archaeological material on the site,

(ii) the impact of the proposed development on such archaeological material and

(iii) the requirements of National Monuments Service, which shall be obtained through consultation at the earliest possible time.

A report, containing the results of the assessment, shall be submitted to the planning authority and, arising from this assessment, the developer shall agree in writing with the planning authority details regarding any further archaeological requirements (including, if necessary, archaeological excavation) prior to commencement of construction works. In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

Reason: In order to conserve the archaeological heritage of the area and to secure the preservation (in-situ or by record) and protection of any archaeological remains that may exist within the site.

7. The developer shall comply with the following requirements:

   (a) No additional artificial lighting shall be installed or operated on the converter station site unless authorised by a prior grant of planning permission.

   (b) CCTV cameras shall be fixed and angled to face into the site and shall not be directed towards adjoining property or roads.

   (c) Cables within the site shall be located underground.

   (d) The external finishes of buildings and structures at Great Island shall be in accordance with the application documents.

   Reason: In the interest of clarity, of visual and residential amenity.

8. The site development and construction works shall be carried out such a manner as to ensure that the adjoining roads are kept clear of debris, soil and other material and cleaning works shall be carried on the adjoining public roads by the developer and at the developer's expense on a daily basis.

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

9. Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the reinstatement of public roads which may be damaged by the transport of materials to the site, coupled with an agreement empowering the planning authority to apply such security or part thereof to the satisfactory reinstatement of the public road. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

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

10. 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 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 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.

11. The developer shall pay a sum in the amount of €200,000 to the planning authority, either annually or in such manner as may be agreed, towards the cost of the provision of environmental improvement and recreational or community amenities in the locality. The identification of such projects shall be decided by the planning authority. The amount of the contribution and the arrangements for payment shall be agreed between the developer and the planning authority or, in default of such agreement shall be referred to the Board for determination. The amount shall be index linked in the case of phased payment. The developer shall consult with the planning authority in this regard prior to the commencement of the development.

    Reason: Having regard to the extensive nature of the construction it is considered reasonable that the developer should contribute towards the cost of environmental, recreational or community amenities which would constitute a substantial gain to the local community.

Mairead Kenny
Senior Planning Inspector

18 May 2021