

## **Appropriate Assessment Report**

### **Assessment of the likely effects of the installation of submarine electricity power cables between Moneypoint, Co. Clare and Glencloosagh Bay, Co. Kerry on the integrity of the Lower River Shannon SAC and River Shannon and River Fergus SPA**

#### **Project Description:**

As part of the ongoing national transmission reinforcement project Eirgrid propose to develop 2 High Voltage submarine electricity circuits crossing the Shannon estuary connecting the transmission system at the Moneypoint Generation Station in Co. Clare to the transmission system adjacent to Glencloosagh Bay in Co. Kerry along the route shown on Drawing No. 231538 02E 033 submitted by Eirgrid. Each circuit would comprise of 4 cables, 3 operational and one spare phase. It is proposed that 1 cable circuit would be operated at 220kV and be installed in 2013. A second circuit would be operated at 440kV and it is intended that this would be installed in 2014.

The proposed cable route across the foreshore is approximately 2.8 Km long and the deepest point along the route is approximately 60m. The total area of foreshore within the cable corridor would be 51.23 hectares. The cables will be installed using a post-lay burial water jetting system and it is intended to bury the cable along the proposed route to a preferred depth of 1.5m below the seabed where the seabed conditions and local geology allows. Where burial is not possible the cable would be placed on the seabed and protected using rock armour or cable mattresses. Each cable would be placed in a separate trench 20 - 25m from one another. The cables will be brought ashore, across the intertidal zone, in 8 individual trenches and will be connected to a terrestrial cable circuit at 2 No. individual jointing bays situated above the high water mark, one at each landfall site, as shown on Drawing No. 231538 02E 030.

In the intertidal area the cable trench would be approximately 0.6 wide and 1 – 1.5m deep. Cable laying in the intertidal area is to be carried out using the water jetting method where possible. Where this is not possible a conventional digger is to be used. In some areas where bedrock outcrops on the shoreline a rock breaker may be required to break through the rock. Where a conventional digger is to be used, 4 separate trenches are to be dug on a falling tide. During a rising tide the cable will be placed in the trench, a concrete slab will be put in place to protect the cable and the trench backfilled with excavated material. Any excess excavated material will be transported offsite to a licenced disposal facility.

Each cable is expected to be laid in approximately 2 days with the contractor working 6 – 8 hrs /day. The 4 individual cables would be laid one at a time with a gap of 1 day between the laying of each subsequent cable. It is estimated that the total duration of the works would be approximately 8 weeks in each year. This 8 week period would comprise a number of activities carried out consecutively or concurrently including the construction of the jointing bays (approximately 6 weeks), works in the intertidal area (approximately 4 -6 weeks) and works in the subtidal (approximately 6 weeks)

The proposed cable route and landing points are within the Lower River Shannon SAC (Site Code 002262) and adjacent to (approximately 3.5Km) from the boundary of the River Shannon and River Fergus Estuaries SPA (Site Code 004077)

### **Lower River Shannon SAC**

This very large site stretches along the Shannon valley from Killaloe to Loop Head/ Kerry Head, a distance of some 120 km. The site thus encompasses the Shannon, Feale, Mulkear and Fergus Estuaries, the freshwater lower reaches of the River Shannon (between Killaloe and Limerick), the freshwater stretches of much of the Feale and Mulkear catchments and the marine area between Loop Head and Kerry Head.

The site is selected for lagoons and alluvial wet woodlands, both habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for floating river vegetation, *Molinia* meadows, estuaries, tidal mudflats, Atlantic salt meadows, Mediterranean salt meadows, *Salicornia* mudflats, sand banks, perennial vegetation of stony banks, sea cliffs, reefs and large shallow inlets and bays all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Bottle-nosed Dolphin, Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Atlantic Salmon and Otter.

There is a resident population of Bottle-nosed Dolphin in the Shannon Estuary. This is the only known resident population of this E.U. Habitats Directive Annex II species in Ireland. Otter, a species also listed on Annex II of this directive, is commonly found on the site.

As set out in the NPWS (2010)<sup>1</sup> the key Conservation Objectives for this site are to maintain the favorable conservation status of the Qualifying Interests of the SAC;

- Freshwater pearl mussel (*Margaritifera margaritifera*)
- Sea lamprey (*Petromyzon marinus*)
- Brook lamprey (*Lampetra planeri*)
- River lamprey (*Lampetra fluviatilis*)
- Salmon (*Salmo salar*)
- Sandbanks which are slightly covered by sea water all the time
- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Coastal lagoons
- Large shallow inlets and bays
- Reefs
- Perennial vegetation of stony banks
- Vegetated sea cliffs of the Atlantic and Baltic coasts
- *Salicornia* and other annuals colonizing mud and sand
- *Spartina* swards (*Spartinion maritimae*)
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

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<sup>1</sup> NPWS ,2010 Draft Generic Conservation Objects, Lower River Shannon SAC, 16 June 2010.

- Bottle-nosed dolphin (*Tursiops truncatus*)
- Otter (*Lutra lutra*)
- Mediterranean salt meadows (*Juncetalia maritimi*)
- Water courses of plain to montane levels with the Ranunculion fluitantis and *Callitricho-Batrachion* vegetation
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)

and to maintain the extent, species richness and biodiversity of the entire site

### **Impact of Project on key species and key habitats**

Considering the location of the proposed works no direct or indirect effects are likely on the following species / habitats

- Freshwater pearl mussel (*Margaritifera margaritifera*)
- Sandbanks which are slightly covered by sea water all the time
- Coastal lagoons
- Vegetated sea cliffs of the Atlantic and Baltic coasts
- Mediterranean salt meadows (*Juncetalia maritimi*)
- Water courses of plain to montane levels with the Ranunculion fluitantis and *Callitricho-Batrachion* vegetation
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)
- *Spartina* swards (*Spartinion maritimae*)
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

Noise associated with the cable laying could result in the disturbance and displacement of Bottle-nosed dolphin, otter and Annex II fish species including Sea lamprey, river lamprey and Atlantic salmon for the duration of the works, which will be carried out over an approximately 8 week period in each of 2 years (2013 and 2014)

The cable laying could result in the alteration / disturbance to the following habitats:

- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Large shallow inlets and bays
- Reefs
- Perennial vegetation of stony banks

## **Impact on the integrity of the site**

The Shannon Estuary is an important habitat for bottlenose dolphins. Research carried out since 1993 has shown that the dolphins are resident, occur throughout the year and it is an important calving area. Surveys carried out by Berrow et al, (2010)<sup>2</sup> showed that dolphins were located throughout the mid to outer estuary, from Tarbert west to Kilcredaun Head at the mouth of the estuary, with the main concentrations off Kilcredaun Head, Kilbaha, Leck Point in the outer estuary and Carrig buoy in the middle estuary. Groups ranging in number from 2 to 20 individuals were encountered in the vicinity of the proposed works area near Tarbert. Noise from the works could lead to damage or disturbance of these dolphins.

The interaction with Bottle-nosed dolphins will be mitigated by the employment of a Marine Mammal Observer and the use of “soft start” procedure. The Marine Mammal Observer will undertake 30 minutes of survey prior to commencement of the soft-start procedure to ensure that no marine mammals are within 500m of the works area.

The noise producing works will not be continuous, will take place from dawn to dusk and there will be a gap of 1 day between the laying of each individual cable.

Otters are known to be active in the general area of the proposed landfall works. During a survey carried out in September 2011<sup>3</sup> otter signs were evident along the shoreline at the Moneypoint Power Station but not in the Glencloosagh Bay area and no holts were identified in the survey sites which extended some 150m to the east and 150m to the west of both proposed landfall locations. Disturbance to otters as a result of the works may affect their distribution locally but the disturbance will be temporary and it is not anticipated that the population structure, range or distribution in the SAC will be affected.

The water column along the proposed cable route is highly turbid due to resuspension by strong tidal currents. Increase in water column turbidity as a result of the laying of the cables in the seabed will be temporary, localised and within the natural range of variability caused by current induced sediment resuspension. The increase in turbidity will not be significant and the passage of migratory fish will not be impeded.

Sea lamprey are sensitive to electromagnetic fields (EMF) which can be generated by submarine cables. Available scientific data has not given grounds for reasonable doubt concerning the lack of adverse effects on lamprey dispersal and significant effect are not anticipated on this species during the proposed operational phase of the project.

The habitats within the cable corridor will be disturbed during the cable laying operations. These impacts will be temporary and localised. The cable trenches will occupy a width of 0.4m, will be some 2,800m long and 1 – 2m deep. The total area impacted represents < 0.02% of the area of

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2 Simon Berrow, Joanne O’Brien, Lisa Groth, Aoife Foley and Kerstin Voigt (2010) Bottlenose Dolphin SAC Survey 2010. Report to the National Parks and Wildlife Service. Shannon Dolphin and Wildlife Foundation. pp.24.

<sup>3</sup> An Otter Assessment of the Site if the proposed submarine power cable landfalls at Moneypoint, County Clare and Glencloosagh Bay, Tarbert County Kerry, Brian Keely and Barry Ryan, Wildlife Surveys Ireland, for ERM September 2011

habitat within the SAC. This will have a slight adverse impact on the Conservation Objectives for these habitat types. Considering the scale of the impact, however, there will not be significant disturbance to key habitats or species. Additionally there will be no habitat or species fragmentation and the overall integrity of the site will not be affected.

The footprint of activities is within the scale of normal erosion or deposition capacities of the channel and any impacts will be minor, localised and temporary. Similarly any increase in water column turbidity will be temporary, localised and within the natural range of variability caused by current induced sediment resuspension

As the cables will be installed at a minimum depth of 1m below the bed of the estuary there will be no impacts on the Qualify Interests of the SAC post installation.

There will be no direct discharge of pollutants into the environment during the works and water quality will not be affected.

### **River Shannon and River Fergus SPA (Site Code 004077)**

The estuaries of the River Shannon and River Fergus form the largest estuarine complex in Ireland. The site comprises all of the estuarine habitat west from Limerick City and south from Ennis, extending west as far as Killadysert and Foynes on the north and south shores respectively of the River Shannon (a distance of some 25 km from east to west). Also included are several areas in the outer Shannon estuary, notably Clonderalaw Bay and Poulnasherry Bay, as well as the intertidal areas on the south shore of the Shannon between Tarbert and Beal Point.

The site is the most important coastal wetland site in the country and regularly supports in excess of 50,000 wintering waterfowl. NPWS 2010(a)<sup>4</sup> have identified the following as being the Feature of Interest for this SPA

Cormorant (*Phalacrocorax carbo*)  
Whooper Swan (*Cygnus cygnus*)  
Light-bellied Brent Goose (*Branta bernicla hrota*)  
Shelduck (*Tadorna tadorna*)  
Wigeon (*Anas penelope*)  
Teal (*Anas crecca*)  
Pintail (*Anas acuta*)  
Shoveler (*Anas clypeata*)  
Scaup (*Aythya marila*)  
Ringed Plover (*Charadrius hiaticula*)  
Golden Plover (*Pluvialis apricaria*)  
Grey Plover (*Pluvialis squatarola*)  
Lapwing (*Vanellus vanellus*)  
Knot (*Calidris canutus*)  
Dunlin (*Calidris alpina*)  
Black-tailed Godwit (*Limosa limosa*)

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<sup>4</sup> NPWS 2010(a) Draft Generic Conservation Objects, River Shannon and River Fergus SPA, 16 June 2010.

Bar-tailed Godwit (*Limosa lapponica*)  
Curlew (*Numenius arquata*)  
Redshank (*Tringa totanus*)  
Greenshank (*Tringa nebularia*)  
Black-headed Gull (*Larus ridibundus*)  
Wetlands & Waterbirds

Disturbance to overwintering birds will be avoided as no works will be carried out during the period November – March inclusive when the main concentration of these birds are present in the site. There will be no significant impact on wetland habitats and habitat or species fragmentation will not occur. The overall integrity of the site will not be affected.

### **Consultation**

The National Parks and Wildlife Service of the Department of Arts Community and the Gaeltacht were consulted. They recommended the appointment of a Marine Mammal Observer, the establishment of a 500m “exclusion zone” for marine mammals and 30 minute pre-start constant effort watches be applied in order to ensure that “sufficient mitigation is provided” for bottle nose dolphins. NPWS also advised that “There is no known issue with EMF effects on sea lamprey in this case.

### **Conclusion**

Based on the above it is concluded that the installation of submarine electricity power cables between Moneypoint, Co. Clare and Glencloosagh Bay, Co. Kerry will not have a significant adverse impact on the Conservation Objectives of the Lower River Shannon SAC or the River Shannon and River Fergus SPA and that the integrity of these sites will not be affected.

Prepared by Marine Institute, on behalf of the MLVC  
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