RPS

COMHLACHT CHALAFORT ÁTHA CLIATH
DUBLIN PORT COMPANY

Alexandra Basin Redevelopment Project

Further Information in accordance with Section 37F (1) Revisions to ENVIRONMENTAL IMPACT STATEMENT

April 2015






1.0 INTRODUCTION

Section 1.1 is updated as follows

1.1 Project Summary

This document has been prepared following a request from An Bord Pleanála to submit further information in accordance with section 37F(1) of the Planning and Development Act 2000 for the ABR Project.

Each Chapter of the EIS submitted with the application for permission has been reviewed and, for ease of reference, only revised or additional text is provided in this document.

Text in blue font in this document identifies changes to the text of the original EIS submitted in March 2014 by Section.

A revised Natura Impact Statement (NIS) has also been forwarded to the Board as requested.

The remaining text for Sections 1.1 to 1.5 remains unchanged.

2.0 CONSULTATION PROCESS

The text for Sections 2.1 and 2.2 of Chapter 2 remain unchanged.

The following text is inserted at the end of Section 2.3.1 of the EIS (Consultation with Statutory and Relevant Bodies).

Consultation with ESB and EirGrid

The following chronological record presents the consultations which have taken place with ESB and EirGrid. The letters quoted are appended at Appendix 1 to this document for ease of reference.

ESB letter in response to the EIS Scoping phase of the EIS (17th May 2013)

In its letter, ESB highlighted the strategic importance of power generation and transmission activity in the Dublin Docklands area. The electricity service for the region is highly dependent on these Dockland sites and their connecting networks which play a critical role in delivery of the national electricity supply.

ESB provided an Infrastructure Map for the Docklands Area drawing attention to the two 220kV sub-aqua cables crossing the Liffey.

ESB pointed out that no work should be carried out in the vicinity of 38kV or higher voltage underground cables without prior consultation with ESB Networks.

ESB concluded that it was supportive of the enhancement of the port facilities and is guided by the need for the protection of ESB Generation Stations and the infrastructure which ensures the continuity of supply to all its customers.

References within EIS and Planning Drawings (6th March 2014)

Reference is made to the 220kV electricity cable crossing of the River Liffey and the requirement to consult with ESB in Section 8.10 of Chapter 8 of Volume 1 of the EIS (Material Assets). The cables are also shown on Planning Drawings IBM0498-CH-002 (Proposed Channel Layout Sheet 1) and IBM0498-CH-003 (Proposed Channel Layout Sheet 2).

EirGrid's Observation to the Board (6th May 2014)

In its observation, EirGrid acknowledges the strategic importance of the ABR Project. In particular, EirGrid recognises that the Project is designed to address capacity constraints that are forecast to emerge in line with an improvement in the State's economy and that the development is consistent with the requirements of the Government's National Ports Policy.

EirGrid also highlights that the 220kV cable to be replaced is a key element of the electricity transmission infrastructure and currently ensures security of supply to Dublin City and the greater Dublin Area. Any negative, unplanned loss of this transmission cable would have serious implications in terms of security of supply. EirGrid submitted that the proposed ABR development had to ensure the ongoing security and reliability of this strategic element of the transmission system. To this end, EirGrid noted that it was in ongoing discussions with Dublin Port.

ESB's Observation to the Board (7th May 2014)

In its observation to the Board, ESB submitted that unplanned loss of electricity generation or transmission capacity could have significant implications in terms of electricity supply in the Greater Dublin Area due to the strategic importance of electricity generation and transmission infrastructural assets in the Dublin Port area.

ESB acknowledged the strategic importance of the ABR Project and confirmed that it had been agreed by both ESB and Dublin Port Company that they would continue to liaise to finalise the design of any necessary works associated with the North Wall – Poolbeg 220kV Cable.

Response by RPS on behalf of Dublin Port Company to First RFI (18th August 2014)

The following response was made with respect to Question 14.3 issued by the Board:

Question 14.3

The EIS and NIS refer to potential future dredging of berths to a depth of -15m CD. However this future dredging and the likely future channel deepening that would be required to provide vessel access to the deepened berths has not been addressed in the EIS or NIS. Comment on the likely potential environmental impacts arising from any future dredging to a depth of -15m CD, including any effects this might have on the submarine pipeline under Dublin Bay which brings wastewater from North Dublin to Ringsend for treatment.

Response to Question 14.3

The proposed demolition of part of the North Wall Quay Extension necessitates the removal of the 220kV cable crossing of the River Liffey shown on Planning Drawing IBM0498-CH-002. The replacement cable is required to maintain the connection between the Poolbeg and North Wall Power Stations.

The construction of the replacement cable will, however, occur within the timeframe of the ABR Project and therefore potential in-combination effects were considered by DPC through engagement with ESB and EirGrid.

With regard to the separate replacement 220kV cable crossing of the River Liffey, the specific nature, extent, location and construction methodology of this has yet to be confirmed and will be the subject of a separate future proposal for statutory consent.

EirGrid's Second Observation to the Board (8th September 2014)

EirGrid confirmed that it had reviewed Dublin Port Company's further information submission and that it was satisfied that the responses submitted by Dublin Port Company addressed EirGrid's concerns as outlined in its previous submission dated 6th May 2014.

Oral Hearing (9th – 17th October 2014)

The following information was read into the record within the witness statement of Dr Alan Barr:

EirGrid confirmed that it had reviewed Dublin Port Company's further information submission and that it was satisfied that the responses submitted address EirGrid's concerns as outlined in their previous submission dated 6th May 2014.

The ABR Project requires the demolition of the end of the North Wall Quay Extension. This in turn will require the diversion of existing services from the area of quay to be demolished including a 220kV cable crossing of the River Liffey. Discussions among ESB, EirGrid and Dublin Port Company have concluded that the laying of the replacement 220kV cable will be a separate ESB Project.

An indicative route for the replacement 220kV cable has been agreed among the parties. This is indicated in ESB's submission to the Board of 7th May 2014. The proposed route lies entirely within the Dublin Port Estate. To ensure no disruption to the electricity usage of the existing cable, the replacement cable will need to be in place prior to the demolition of the end of the North Wall Quay Extension which is programmed to commence mid 2018.

Discussions between ESB, EirGrid and Dublin Port Company have concluded that the probable solution will be to replace the cable by running new cables through bedrock underneath the River Liffey and this provided sufficient information for a high level in-combination assessment to be undertaken.

The construction of a new cable crossing through bedrock underneath the River Liffey will require the use of directional drilling technology. A boring rig will most likely be established within the Dublin Port Estate on the northern side of the River Liffey and an interceptor shaft constructed at Poolbeg. A small bored tunnel within the rock which underlies the site is then constructed. A heavy drilling mud such as bentonite is normally used to keep the small bored tunnel open until the cable is winched through to complete the crossing. The boring of the small diameter tunnel and winching of the cable is not expected to take more than one week to complete, excluding the preparation works.

By using this construction technique, no dredging of the Liffey Channel is required and the replacement cable will be at a much greater depth compared to the -10m CD dredged depth of the navigation channel proposed by the ABR Project. No in-combination affects are therefore anticipated

Consultations Post Oral Hearing

Consultations with ESB and EirGrid have continued post the ABR Project Oral Hearing of October 2014 to advance the separate, though associated, removal of the existing 220kV cable crossing of the River Liffey and the provision of a replacement cable. Consultation meetings were held on 11th December 2014 and 27th February 2015.

During this period, preliminary design has been carried out by ESB and EirGrid who are the bodies responsible for removing the existing cable and constructing the replacement cable and a description of the works as well as the methodology to be followed during the construction phase has been developed.

This has enabled a revised EIS and NIS to be completed, including an assessment of cumulative impacts of these works, in accordance with the request for further information from the Board.

The text from Section 2.3.2 to the end of Chapter 2 remains unchanged.

3.0 SITE DESCRIPTION

The text for Chapter 3 remains unchanged.

4.0 PROJECT DESCRIPTION

The text for Chapter 4 remains unchanged.

5.0 FLORA AND FAUNA

The text for Chapter 5 remains unchanged.

6.0 LANDSCAPE AND VISUAL

The text for Chapter 6 remains unchanged.

7.0 AIR AND CLIMATE

The text for Chapter 7 remains unchanged.

8.0 MATERIAL ASSETS

The text for Sections 8.1 to 8.9 remains unchanged.

The text for Section 8.10 Services has been revised under the sub-heading Electricity Supply Network and Infrastructure.

The second paragraph of the original text has been revised

Electricity Supply Network and Infrastructure

There are two 220kV sub-aqua cables across the Liffey. The cables are shown on Planning Drawings IBM0498-CH-002 (Proposed Channel Layout Sheet 1) and IBM0498-CH-003 (Proposed Channel Layout Sheet 2). The cables are at a depth of circa -18m CD within the River Liffey navigation channel. The proposed capital dredging scheme will deepen the navigation channel from – 7.8m CD to – 10m CD, that is, an average depth of 2.2m. The existing high voltage sub-aqua cables will not, therefore, be impacted by the proposed capital dredging scheme. The western cable, however, landfalls at a section of the North Wall Quay Extension which requires to be demolished as part of the ABR Project. This will necessitate the diversion of all existing services from the area of quay to be demolished including the removal of the existing 220kV cable and the provision of a replacement cable. Discussions among ESB, EirGrid and Dublin Port Company have concluded that the laying of the replacement 220kV cable will be a separate ESB Project. An indicative route for the replacement 220kV cable has been agreed, and is as indicated in ESB's submission to the Board of 7th May 2014. The proposed route lies entirely within Dublin Port estate and the grounds of Poolbeg Generating Station.

9.0 COASTAL PROCESSES

The text for Chapter 9 remains unchanged.

10.0 WATER

The text for Chapter 10 remains unchanged.

11.0 GEOLOGY AND SOILS

The text for Chapter 11 remains unchanged.

12.0 CULTURAL HERITAGE

The text for Chapter 12 remains unchanged.

13.0 HUMAN BEINGS

The text for Chapter 13 remains unchanged.

14.0 INTERACTIONS AND IN-COMBINATION EFFECTS

The text for Section 14.1 remains unchanged.

The following text is inserted at the end of Section 14.2 of the EIS (In-Combination Effects)

ESB 220kV replacement crossing of the River Liffey and decommissioning of existing cable

Preliminary design has been carried out by ESB and EirGrid who are the bodies responsible for removing the existing cable and constructing the replacement cable and a description of the works as well as the methodology to be followed during the construction phase has been developed and is set out fully in this document.

This has enabled a revised EIS and NIS to be completed, on behalf of Dublin Port Company, which both now include a cumulative appraisal of these cabling works in combination with the proposed ABR development, in accordance to the request for further information from the Board.

Project Description and Construction Methodology

The 220kV replacement cable is required to provide security of electricity supply by maintaining a link between Poolbeg Generating Station and North Wall Generating Station.

The proposed route of the replacement cable lies entirely within Dublin Port estate and the grounds of Poolbeg Generating Station as shown on Figure 14.2.1.

River Liffey Crossing

Installation of the replacement cable includes a crossing of the River Liffey and will require using Horizontal directional drilling (HDD) technology. The drilling is expected to follow a profile up to 20m below the existing level of the seabed (circa -28m CD) within the port through stiff boulder clay which overlies limestone bedrock (see Section 11.2.3 of Volume 1 of the EIS) and then to rise to approximately 1.5m below ground level where it meets a land trench on both sides. The crossing of the River Liffey will require a directional drill of circa 900m length. The bore of the tunnel will be circa 400mm in order to facilitate the installation of a replacement 220kV cable which will be of circa 200mm diameter.

The following construction methodology will be used for the River Liffey crossing:

Mobilisation and site preparation

Suitable working sites are required at either side of the drilled crossing. These sites will be fenced off with security fencing. A level, firm area for the HDD rig and ancillary equipment will be prepared by stripping topsoil, where necessary, and laying stone/hardcore.

At the HDD rig site, an area of circa 40m x 40m is required. At the receptor side, an area of circa 30m x 25m is required. Approximate locations for these sites are identified on Figure 14.2.1.

Suitable access will be provided to the two sites for all-terrain mobile cranes, 40ft articulated trucks and by other delivery vehicles.

All existing underground services will be located, marked, and protected as necessary from damage to ensure the safety of the site operations.

719000 000000 720000 000000 721000 000000

735000 000000

734000 000000

N

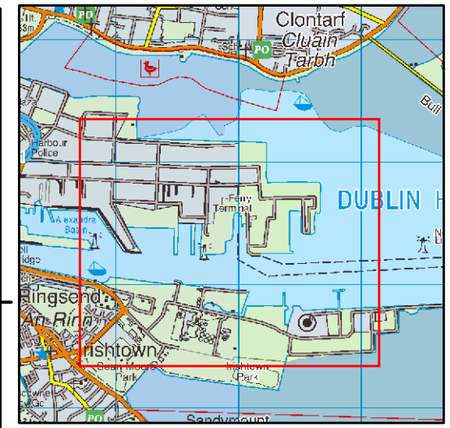
North Wall
Generating Station

Poolbeg
Generating Station

DUBLIN HARBOUR

DUBLIN HARBOUR

DUBLIN HARBOUR



Legend

- 22kV Cable - Proposed Route
- Proposed Horizontal Directional Drilling
- Approximate location of Compounds

Coordinate System: IRENET95 Irish Transverse Mercator
Projection: Transverse Mercator
Datum: IRENET95
False Easting: 600,000.0000
False Northing:750,000.0000
Central Meridian: -8.0000
Scale Factor: 0.9998
Latitude of Origin: 53.50000
Units: Meter

TITLE

Figure 14.2.1
220 kV Cable Proposed Routes

CLIENT

DUBLIN PORT Co

PROJECT

Dublin Port
ABR Project

RPS
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Drawn By : DH
Checked By : RB
Approved By : AGB
Date : 19/03/15

Drawing No. :
IBE0807_ABRProject_Dwg01_Rev00

0 0.125 0.25 0.5
Km

SCALE AT A3: 1:7,500

A water supply will be provided to the HDD rig site for mixing of drilling mud and general site usage. Depending on the size and type of drill rig used, an anchorage assembly will be designed and constructed. The anchorage is used to securely hold the drill rig in position throughout the drilling works including the installation of the 220kV cable. Generally, a reinforced concrete anchor block is used.

Upon delivery of the drilling rig and ancillary equipment to the site, the plant items will be placed in their working positions and all the necessary connections made. The drill rig is set up, anchored and adjusted to give the required ground entry angle.

A typical HDD rig is shown in Plate 4.2.1. This rig was used at Stranraer, Scotland for the construction of a long sea outfall and is of a similar size expected to be used for the River Liffey crossing. A typical mud handling plant, the largest associated ancillary plant, is illustrated in Plate 4.2.2. This plant contains the drilling mud and uses screens, shakers and centrifuges to recycle the drilling mud and separate cuttings arising from the bored tunnel.

The environmental appraisals, including in-combination effects and cumulative impacts, have been undertaken for two construction options, i.e. drilling from one side of the river to the other or drilling from both sides and meeting in the middle.

Pilot drilling operation

A pilot bored tunnel is first constructed. The drilling head is driven forward along a predetermined drill profile by the drilling rig. The push force generated at the drilling rig is transmitted to the drilling head by hollow drilling rods. Drilling mud is pumped at high pressure through the hollow drill rods to lubricate the drill head and to flush cuttings arising from the boring process back to the drill's entry point. The drilling mud also provides support to the bored hole. Each drilling rod is followed by another one from the drilling rig and the drilling process continues in cycles until the drilling head punches out at the target destination.

The position of the drilling head underground is determined with the aid of a sensor located directly behind the drilling head providing an accurate record of progress and position of the pilot drill.

The drilling mud is produced by mixing, ground and refined bentonite, with additives and water. The mud handling plant is designed to recycle the drilling mud and separate cuttings arising from the bored tunnel. The cuttings arising are expected to be inert and will be disposed of at a licensed landfill. The volume of cuttings is expected to be circa 200 cubic metres equivalent to 350 tonnes.

Once the pilot hole is complete, drilling mud emerges from the reception side. This mud will be captured, contained and returned to the drill site by road tanker.

Reaming operations

After the main pilot hole has been completed it is necessary to enlarge the pilot hole sufficiently to receive the pipe ducting for the 220kV cable. This is achieved by changing the drilling head to a reaming tool. The bored hole is enlarged by the reaming tool which rotates as the drilling rods are pulled back towards the drilling rig.

The reaming process may require a number of passes to create the final circa 400mm tunnel.

Pipe-string preparation and pull back operation.

The pipeline which will act as the ducting for the 220kV cable will be welded into pipeline strings on site before being pulled into the bored tunnel by the drilling rig. The pipeline string follows the final pass of the reamer through the drilled hole up to the entry pit in front of the drilling rig. The crossing is then completed by pulling the 220 kV cable through the ducting using a pull-wire.

Environmental Protection Measures associated with the River Liffey Crossing

The following measures will be adopted to ensure that there is imperceptible impact to the receiving environment.

1. The bored tunnel will be constructed entirely below the River Liffey and will not impact on the foreshore or Navigation Channel.

2. The bored tunnel will also be constructed entirely below the Great South Wall, located along the southern shoreline of the crossing.

3. The mud handling ancillary equipment and containment facilities will be bunded to ensure an adequate over-capacity in storage volume to ensure containment of the drilling mud in the event of a leakage.

4. The boulder clay median through which the bored tunnel will be constructed is suitable for the successful use of horizontal directional drilling technology and has been successfully used in the past to install the existing cables across and under the River Liffey. The risk of drilling mud escaping to the water environment during the drilling operations is negligible given the nature of the clay material and the depth of overburden between the bored tunnel and the seabed. However, notwithstanding the very low level of risk, the developers of the River Liffey cable crossing (i.e. ESB and/or EirGrid) will ensure that monitoring is put in place to detect any leakage at a very early stage. Additives will be kept on site which quickly solidifies the drilling mud and effectively seals the route of escape.

5. Noise levels will be kept to a maximum of 85 dBA at the boundary to the site compound.

6. The works will be undertaken over the winter months between September and March when there are no terns present at the nearby tern colony at the ESB Dolphin, Poolbeg.

Programme

The River Liffey crossing will require a construction period of 4-6 months inclusive of mobilisation and site preparation works. The drilling works will be undertaken during the winter months between September and March.

Plate 14.2.1 Typical Horizontal Directional Drilling Rig

Plate 14.2.2 Typical Mud Handling Plant (located to rear of the drilling plant)

Land Route

The landfall at the southern end of the River Liffey Crossing brings the replacement 220kV cable directly to the grounds of Poolbeg Generating Station.

The landfall at the northern end of the River Liffey Crossing brings the replacement 220 kV cable to the eastern extremity of the Port's lands. The proposed land route to complete the connection between Poolbeg Generating Station and North Wall Generating Station is shown in Figure 14.2.1.

Land Route Characteristics

Total distance	1,962m
Soft Ground Dig	962m
Road Excavation Dig	1,000m

No existing culverts are available

Note: all distances are approximate and are subject to detailed design

The land route requires the following construction activities:

- The opening of trenches of approximately 1.5m depth and 1.5m to 2.0m width;
- The installation of ducts to house the 220 kV cable;
- The provision of access chambers along the route;
- The backfilling and reinstatement of trenches; and
- The pulling of the 220 kV cable through the ducting.

The proposed trenching will occur within land and roads owned by Dublin Port Company. Trench Guidelines issued by the Government of Ireland Department of Environment and Local Government in April 2002, with subsequent Revisions of December 2002 and September 2005, are intended for opening or forming trenches in public roads in Ireland. The construction activities will take account of the relevant sections of these Guidelines where applicable.

Pipeline installation along the internal road network is likely to be by a traditional main lay technique. The pipeline route will be marked out on the road and all services will be identified from utilities information and Cable Avoidance Tool Surveys prior to breaking ground. All services will be positively identified by hand digging prior to any machine excavation. Machine excavation will be prohibited within 1m of a service.

Where the works are carried out on live carriageways, barriers and temporary traffic management measures (including possibly temporary traffic lights) will be installed prior to the commencement of the works to ensure segregation of the public and live traffic from the works. No open excavations will be left outside of working hours.

The three main activities of excavation, installation and reinstatement of the trench will be carried out by the first team and will happen concurrently with sufficient separation of operations so as not to impact on the other. There will be no more than 80m to 100m of excavation open at any one time as

the main lay technique will mean that once reinstated the working area is cleared and moved forward to a new area ready for excavation.

The pipeline will be bedded on a 150mm bedding of fine material such as sand or quarry dust. Once the pipe is placed in the trench and welded, it will backfilled with the same bedding material to 150mm above the crown of the pipe and then reinstated using the arisings from the trench. The backfill will be compacted in 150mm layers to an appropriate compaction value.

Reinstatement of the road surface will be in accordance with the Trench Guidelines referenced above. This will be carried out by a separate team that will follow behind the first team.

Decommissioning the existing 220 kV cable

The existing 220 kV cable, which landfalls at a section of the North Wall Quay Extension which is to be demolished as part of the ABR Project, will be decommissioned.

This cable is currently housed within steel ducting under the River Liffey. The cable is encased with layers of fabric which is impregnated with oil and operates under pressure.

The following procedure will be used to remove the cable.

- De-energize and earth the cable and cut off (depressurise) the fluid supply to the steel pipe;
- Drill two holes into the steel pipe, one at either end of the River Liffey crossing;
- Suck out as much of the fluid as possible from the pipeline all along its length into suitable receptor tanks located within bunded areas;
- Pull out the cable at bunded pits;
- Chop the cable into 1.2m lengths and load and transport them using a suitably authorised waste contractor;
- On the river section, as the cable is being pulled out, pull in a draw wire which is attached to the far end of the cable being pulled out;
- Use this draw wire to pull in a series of tight fitting swabs which, when the draw wire is pulled out, will bring any fluid left in the river crossing to the bunded surface pit;
- Once in the bunded pit skim off the fluid onto a suitable fluid tank;
- The draw wire can be reinserted to give multiple cleaning runs of the underwater steel pipe section;
- Cleansing fluid will then be pumped into the underwater steel pipe to remove any residual fluid;
- This swabbing and flushing regime will also be applied to the land cable sections.

Environmental Appraisal including In-combination effects and cumulative impacts

Flora and Fauna

The ESB 220kV replacement crossing of the River Liffey and decommissioning of existing cable does not impact on any part of the foreshore or navigation channel. No wet working is proposed to be undertaken in the River Liffey channel and measures have been outlined in preceding sections which will prevent any drilling muds from escaping.

No impact is therefore expected with respect to benthic habitats or fisheries during the construction phase of the works.

The construction works have been designed to take place during the winter months when no terns will be present at the nearby colony located at the ESB dolphin shown on Plate 14.2.3. This time period also lies outside the main smolt run within the River Liffey.

The construction of the pipe route on land lies entirely within the industrial Dublin Port estate lands adjacent to, or within, existing roads. The impact is therefore expected to be imperceptible with respect to terrestrial flora and fauna within the Dublin Port estate.

During the operational phase, the energised cable will create an electromagnetic field (EMF) around the cable. Notably, the new cable will be laid at a greater depth compared to the existing cable crossing and hence there will be no increase in the magnitude of electromagnetic field strength radiating from the new cable infrastructure through to the Liffey water column. An electromagnetic field effect pathway upon marine fauna has therefore been ruled out and, on that basis, the possibility of EMF displacing marine species from navigating the River Liffey has also been ruled out. No impact with respect to fisheries is therefore expected and therefore there will be no cumulative impacts with the ABR Project.

Plate 14.2.3 Tern colony on the nearby ESB Dolphin

Landscape and Visual

The proposed works have been assessed for potential Landscape and Visual in-combination and cumulative impacts with the proposed ABR Project.

All works proposed will take place within the context of the busy and extensive Dublin Port. The locations for the proposed works are remote from sensitive receptors and will be hard to observe at distance.

When finished the replacement cable with be located below ground level and will not be visible.

In the landscape and visual context of Dublin Port the methods proposed to be used for the replacement cable will blend with the existing port character that consists of frequent movement of traffic, cranes, vessels and machinery within a working port. Overall, when the proposed works associated with the proposed replacement cable are considered in landscape and visual terms the in-combinations effects or cumulative impacts with the proposed ABR Project will be imperceptible.

Air and Climate

Noise
This section contains an evaluation of the potential cumulative noise impacts associated with the North Wall – Poolbeg 220kV cable replacement in combination with the proposed ABR project.

The proposed North Wall - Poolbeg 220kV cable replacement will involve the decommissioning of the existing North Wall - Poolbeg cable, cable trenching within port lands and horizontal directional drilling (HDD) between a location within port lands on the north side of River Liffey and a location within ESB owned lands on the south side of the river.

In order to robustly evaluate the potential cumulative noise effects of the 220 kV cable replacement and the ABR projects, a “worst case” scenarios has been assumed, i.e. both projects being active simultaneously. In these circumstances, construction phase noise models, as described in Section 7.1.3 of the EIS, have been updated to include worst-case construction phase noise levels from the proposed North Wall - Poolbeg 220kV replacement cable.

In terms of assumptions included in the updated noise modelling, the nearest portion of the respective construction activity to the relevant residential property has been used in each instance.

In addition to the trenching activities, the HDD drilling activity on the north and south side of the river have been included in the noise model on the worst-case assumption that both trenching and HDD drilling are occurring simultaneously. In terms of model inputs, entry reference 21 from Table C3, Annex C of BS5228:2009 A1:2014 (i.e. L_W = 107dB) has been used to characterise the HDD drilling noise output. A worst-case combination of plant including a breaker mounted on wheeled backhoe (BS5228: C1:Ref 1), tracked excavator clearing site (C2:Ref 3), tracked excavator for ground excavation (C2:Ref 14), tipper lorry (C8:Ref 20) and a roller (C2:Ref 38) taken from Table 7.1.13 of the EIS, has been used in the noise model to represent worst-case trenching activities.

The updated cumulative noise modelling has been conducted using the noise models for Construction Phase Scenario 1 only (see Section 7.1.3) as the proposed North Wall - Poolbeg 220kV replacement cable must be completed prior to the works at North Wall Quay Extension which is part of Construction Phase Scenario 2. The cumulative noise level predictions for the in-combination construction activities for the proposed ABR Project and the replacement cable are included in Table 14.2.1 below.

The predicted noise levels included in Table 14.2.1 illustrate that the cumulative noise level predictions from both projects are no greater than those from the proposed ABR Project on its own at all properties to the south and west of the Port. The marginal increase in noise levels (i.e. 0.1dB) at 62 Pigeon House Road will be imperceptible. The cumulative noise levels are increased by 1.3-1.4dB(A) in the direction of Clontarf as a result of the addition of the cable replacement construction activities. However, these cumulative predicted noise levels at Clontarf are still lower than existing ambient (i.e. L_{Aeq}) and background (i.e. L_{A90}) noise levels in Clontarf and, therefore, will not result in any perceptible noise impact at these properties.

The assessment of the in-combination and cumulative noise impacts from construction activities associated with both the ABR Project and the cable replacement projects concludes that there is no cumulative noise impact associated with both projects occurring simultaneously.

Table 14.2.1 Cumulative Noise Level Predictions from Proposed ABR and Cable Replacement Projects

Property Reference	Nearest Property (See Figure 7.1.1)	Predicted Worst-Case Construction Noise dB(A)		Difference with Replacement Cable dB(A) [NC=No Change)
		Proposed ABR	Proposed ABR & Cable Replacement	
1	51 York Road	54.8	54.8	NC
2	1 Alex Quay	55.1	55.1	NC
3	1 Pigeon House Road	51.2	51.2	NC
4	30 Pigeon House Road	51.2	51.2	NC
5	46 Pigeon House Road	55.4	55.4	NC
6	62 Pigeon House Road	54.8	54.9	+0.1
7	71 Pigeon House Road	52.2	52.2	NC
8	80 Pigeon House Road	51.9	51.9	NC
9	The O_2	58.2	58.2	NC
10	Point Hotel	60.8	60.8	NC
11	210 Clontarf Road	44.3	45.6	+1.3
12	22 Vernon Court	44.3	45.6	+1.3
13	221 Clontarf Road	44.0	45.4	+1.4

Air Quality

There is the potential for temporary construction stage impacts from the ESB 220kV cable replacement project from both construction dust and construction emissions (from mobile plant). Works in the subsea section of the River Liffey crossing will have no direct impacts to atmosphere as there is no pathway to the atmosphere. There will be minor localised emissions from mobile plant, the drilling rig and vehicles serving the compound servicing the horizontal direction drilling (HDD) rig. Impacts would be greater to the south of the Liffey as this area is closest to the residential receptors but in either case the emissions are anticipated to be minor with an imperceptible effect on air quality.

Once the cable route is under construction at the landfall at either end of the River Liffey Crossing and along the proposed land route within Dublin Port estate, there is potential for dust impacts at receptors within 100 metres of the work areas. As above, the residential areas to the south of the Liffey may be more sensitive as these would be closer to the work area. Given, that the works are due to be undertaken over the winter months between September and March, when rainfall is heaviest, the potential for dust nuisance is reduced.

In summary, while there is potential for minor dust and plant emissions from the cable replacement project these are considered imperceptible and it is concluded that there is no cumulative or in-combination impact to air quality as a result of the North Wall – Poolbeg 220kV Cable project and the ABR Project.

Material Assets

Transportation

River Liffey Crossing

Horizontal directional drilling techniques such as the technique proposed to cross the River Liffey, are generally considered the least intrusive technique in transport terms. This trenchless technology only

requires vehicle movements for the initial site set up and site decommissioning stages, and occasional servicing and staff vehicles during the construction stage.

Mobilisation and site preparation

A suitable working area is required at both sides of the drilled crossing. As the methodology explained, some contractors may adopt an approach of drilling from both sides and meeting in the middle. Therefore, to provide a worst case assessment, it has been assumed that the larger c40mx40m compound will be provided on both the Dublin Port Northern Lands and within the environs of the existing Poolbeg Generating Station on the south side.

Each site requires a level, firm area for the HDD rig and ancillary equipment. The proposed locations of the compounds, as illustrated in Figure 14.2.1, are located in existing hardstanding areas which are currently nominally level. Therefore, it is expected that minimal works will be required for preparation of the site such as topsoil stripping and the laying of stone/hardcore, resulting in the requirement for a minimal level of plant and delivery of associated materials. The sites will be fenced off with security fencing.

It is estimated that the delivery of the necessary plant and components will result in circa 20-30 Heavy Goods Vehicles (HGVs) to each Rig Site at the start of the mobilisation period which equates to circa 40-60 vehicle trips being generated by each Rig Site.

The decommissioning of the Rig Sites at the end of the construction period will also result in circa 20-30 HGVs, or circa 40-60 vehicle trips being generated by each Rig Site to remove the plant and components from each site.

The all-terrain mobile crane required for the site setup is likely to be a vehicle that is permitted to drive on public roads and falls within the normal permissible dimensions for vehicles on public roads. It will arrive to each site as a single trip, and leave each site as a single trip.

It is not expected that abnormal loads will be required at the site.

Access to the Rig Sites

Both site compounds are currently accessible via an extensive and long established road network, with existing site accesses.

The existing road network has sufficient capacity and carriageway width to accommodate the vehicles being generated by the proposed works.

The construction vehicles associated with the works will utilise the Dublin Port Tunnel as the Dublin City Management Plan currently in operation prevents HGVs from entering Dublin City Centre between 07:00-19:00 seven days a week.

The route for the vehicles accessing the Rig Site at the Dublin Port Northern Lands will be:

- Dublin Port Tunnel;
- Promenade Road;
- Bond Drive;
- Tolka Quay Road;
- Terminal Road North;
- Alexandra Road Extension;
- Access through the existing Terminal 5 access onto an existing large area of hardstanding;

The route for vehicles accessing the Rig Site at Poolbeg Generating Station will be:

- Dublin Port Tunnel;
- East Wall Road;
- East Link Bridge;

- R131;
- Pigeon House Road;
- Access through the existing Poolbeg Generating Plant access onto an existing large area of hardstanding.

Plate 14.2.4 shows the existing access to Terminal 5 in the Dublin Port North Lands and Plate 14.2.5 shows the existing access to Poolbeg Generating Station. The Plates demonstrate that there is an existing and established road network to provide access for the vehicles associated with the proposed works.

Plate 14.2.4 Existing Access into Terminal 5 of Dublin Port Northern Lands

Plate 14.2.5 Existing Access to Poolbeg Generating Station

The roads listed on the routes have capacity of 1,800 Passenger Carrier Units (PCU)[1] per lane per hour. Therefore the inclusion of circa 40-60 HGVs generated by each Rig site at the start of the mobilisation period and again at the decommissioning of the Rig Sites stage will be insignificant.

The impact of the Mobilisation and Site Preparation of the Rig Sites required for the Liffey 220kV cable crossing will therefore be imperceptible in transportation terms.

During the Construction Phase

There is likely to be a staff presence of circa 6 personnel on each site during the construction phase. Therefore, as a worst case assessment it can be assumed that 6 private vehicles arrive and depart from the Rig Site on a daily basis. Circa 200 cubic metres (equivalent to 350 tonnes) of cuttings arising from the bored tunnel will be disposed of at a licensed landfill. This equates to 20 journeys, or 40 trips, by a commonly used 8m rigid tipper lorry such as the vehicle illustrated in Plate 14.2.6.

[1] A typical car is equivalent to 1PCU

Plate 14.2.6 Example of an 8m Rigid Tipper Lorry typically used to transfer material

Once the pilot hole is complete, drilling mud emerges from the reception side. This mud will be captured, contained and returned to the drill site by road tanker. A small circa 7m road tanker, as illustrated in Plate 14.2.7, can hold 9 cubic metres. This vehicle may be required to make occasional return journeys from one Rig Site to the other during the construction process. The vehicle will travel via the established road network as described above.

Plate 14.2.7 Example of a 7m Road Tanker with 9 cubic metre capacity

The traffic movements during the construction phase of the River Liffey Crossing are considered negligible in transportation terms.

Land Route

The trenching techniques described in the methodology for carrying out the excavation and duct laying are typical, industry standard techniques.

The excavations will be carried out entirely on lands owned by Dublin Port Company, and not on the external road network.

The three main trenching activities of excavation, installation and reinstatement of the trench that will occur concurrently, along with the required traffic management on the live road section of the

excavation, are likely to require circa 5 personnel and circa 3 pieces of plant. Once the first team has completed the section of trench, a second similarly sized team will follow to carry out the road surface reinstatement. The vehicles generated by the construction activities themselves are minimal and likely to have an imperceptible transport impact.

The excavation through soft ground, away from live traffic flows, is unlikely to have any impacts on transport or traffic flows.

The excavation along live roads will create the need for traffic management which can cause localised traffic delays on the internal road network.

However, it is important to note that the works will not be carried out along Promenade Road, Bond Drive or Tolka Quay Road, which together form the internal 'spine road' at the Port which carries the majority of Port traffic flows.

Conservatively, it is expected that 80m to 100m of excavation and cable laying can be carried out per typical working day. The land route requires 1,000m of road excavation along Alexandra Road, equating to a maximum of 13 working days of traffic management measures along this section of road. Note that circa 300m of the route is within a freight terminal, and not on a live road.

To minimise the impact of the localised delays on the internal flow of traffic, the traffic management will not be carried out during peak traffic flow periods within the Port. Note that the peak traffic periods within the Port are dependent on vessel sailing times, and are not necessarily the typical AM and PM peak times associated with external road networks.

In summary, the worst case impact of the proposed excavation and duct laying through land will result in localised traffic delays on internal sections of the Port, lasting no more than 25 days and carried out during local off-peak traffic periods to minimise inconvenience to road users. The works will not be carried out along Promenade Road, Bond Drive, or Tolka Quay Road, which together form the internal 'spine road' at the Port which carries the majority of Port traffic flows. This level of impact is considered to be imperceptible.

Decommissioning the existing 220kV Cable

The decommissioning of the existing 220kV cable is likely to require a small, localised site compound on North Wall Quay Extension to contain the plant and equipment required to carry out the decommissioning.

It is estimated that the delivery of the necessary plant and components will result in circa 10-15 HGV movements to the site at the start of the mobilisation period and again at the end of the decommissioning process.

North Wall Quay Extension is currently accessible via an extensive and long established road network that has sufficient capacity and carriageway width to accommodate the vehicles being generated by the proposed works.

The construction vehicles associated with the works will utilise the Dublin Port Tunnel and the route for the vehicles accessing the decommissioning site will be:

- Dublin Port Tunnel;
- Promenade Road;
- Tolka Quay Road;
- Alexandra Road;

There is likely to be a staff presence of circa 4 personnel on site during the operational stage. Therefore, as a worst case assessment it can be assumed that 4 private vehicles arrive and depart from the North Wall Quay Extension site on a daily basis.

The decommissioned cable will be chopped into 1.2m lengths and transported using a suitably authorised waste contractor. The removal of the decommissioned cable can be carried out in circa 4 vehicle movements.

Hence, it is considered that the impact of the decommissioning of the existing cable will be imperceptible in transportation terms.

In-combination effects and cumulative impacts

This Section has demonstrated that the transportation impacts due to the ESB 220kV replacement crossing of the River Liffey and decommissioning of the existing cable will be imperceptible.

The methodology explains that, in order to ensure no disruption to the electricity usage of the existing cable, the replacement cable will need to be in place prior to the demolition of the end of the North Wall Quay Extension, which is programmed to commence in mid 2018 (subject to a grant of permission).

The peak construction traffic movements associated with the ABR Project are caused by the demolition of the North Wall Quay Extension (Month 32 to Month 42 of the construction programme as shown in Appendix 4 of Volume 2 of the EIS). This is illustrated in Figure 8.8.2 of Chapter 8.1 (EIS, Volume 1) which shows that the peak construction traffic movements associated with the ABR occurs after Month 32.

Figure 8.8.2 shows that the maximum construction vehicles per hour prior to the demolition of the North Wall Quay extension is 18.3 vehicles per hour, with an average of 8.3 vehicles per hour (based on an 8 hour working day). This is much less than the maximum figure of 32.8 vehicles per hour that will occur in Month 33.

In-combination and cumulative impacts with respect to transportation will, therefore, also be imperceptible as the combined construction vehicles for the ABR Project and for the ESB cable replacement will occur prior to Month 32 and will be much less than the ABR related construction vehicles post Month 32.

Coastal Processes

The ESB 220kV replacement crossing of the River Liffey and decommissioning of existing cable does not impact on any part of the foreshore or navigation channel.

There are therefore no in-combination effects or cumulative impacts with respect to coastal processes.

Water

The following measures will be adopted to ensure that there is no impact to the receiving water environment during the replacement cable crossing of the River Liffey, as described in the Project Description and Construction Methodology earlier:

1. The bored tunnel will be constructed entirely below the River Liffey and will not impact on the foreshore or Navigation Channel.

2. The mud handling ancillary equipment and containment facilities will be bunded to ensure an adequate over-capacity in storage volume to ensure containment of the drilling mud in the event of a leakage.

3. The boulder clay median through which the bored tunnel will be constructed is suitable for the successful use of horizontal directional drilling technology. The risk of drilling mud escaping to the water environment during the drilling operations is negligible given the nature of the clay material and the depth of overburden between the bored tunnel and the seabed. However, notwithstanding the very low level of risk, the developers of the River Liffey cable crossing (i.e.

ESB and/or EirGrid) will ensure that monitoring is put in place to detect any leakage at a very early stage. Additives will be kept on site which quickly solidifies the drilling mud and effectively seals the route of escape.

Similarly, during the decommissioning of the existing cable, all works will be undertaken on land, within bunded pits.

Given that there is no direct working within the foreshore or navigation channel, there is no direct pathway for the release of contaminants to the receiving waters. The measures proposed are designed to provide safeguards to prevent leakages from entering the water environment. An imperceptible impact is, therefore, expected with respect to the water environment as a result of the construction works.

No in-combination or cumulative impact is therefore expected with respect to the water environment.

Geology and Soils

The boulder clay median through which the bored tunnel will be constructed is suitable for the successful use of horizontal directional drilling technology. These clays have low permeability and no impact is expected with respect to local or regional groundwater.

In terms of waste management, mud handling plant similar to that illustrated earlier in Plate 4.2.2 will be used during the River Liffey crossing. This plant contains the drilling mud and uses screens, shakers and centrifuges to recycle the drilling mud and separate cuttings arising from the bored tunnel.

The advantages of using this type of plant are;

- Minimises the amount of drilling mud required by incorporating a recycling process;
- Effectively dewaters the cuttings arising from the bored tunnel.

The cuttings will be disposed of at a licensed landfill facility.

Consequently, no in-combination or cumulative impact is expected with respect to geology and soils.

Cultural Heritage

To assess the cumulative and in-combination archaeological impacts of the relocation of the North Wall- Poolbeg 220kV cable a desktop study of the available information and on-site survey of the proposed cable route was undertaken. In addition, an assessment of the potential impact from the proposed Horizontal Directional Drilling on buried cultural material within the seabed, between the two cable landfall locations, has also been made.

The cable will be buried at a depth of approximately 1.5m below ground level. As such, groundwork will be restricted to modern layers within the twentieth-century port reclamation area. There is therefore no impact anticipated during these works to any archaeologically or historically significant material. In addition, both landfall locations lie within a modern environment and the archaeological potential of those locations remains extremely low. The insertion of the subsea component of the cable will be undertaken using direction drilling to a depth of 20m below the existing seabed level. The use of this technology, coupled with depth of drilling, will eliminate the capacity for archaeological material to be impacted by the insertion of the cable; the seabed sub-strata is likely to be of glacial origin and therefore archaeological sterile in nature. It is also anticipated, due to the drill-depth, that no impact to the Great South Wall will take place as part of the proposed works.

No in-combination or cumulative impact are therefore expected with respect to cultural heritage.

Human Beings

The 220kV cable replacement is a key element of the electricity transmission infrastructure which will ensure security of supply to Dublin City and the Greater Dublin Area.

The environmental impact with respect to visual intrusion, noise, air quality, traffic and waste management is addressed above and concludes that an imperceptible impact is expected, either in isolation or in-combination with the ABR Project.

The construction works will result in some short-term employment within the construction industry but is not expected to generate significant local employment due to the specialist nature of the works.

The works will have no impact on cruise tourism.

No in-combination or cumulative impacts are therefore expected with respect to human beings.

Conclusion

The ESB 220kV replacement crossing of the River Liffey and decommissioning of the existing cable are necessary works to ensure the electricity security of supply to Dublin City and the Greater Dublin Area.

The environmental appraisals detailed in this Revision to the EIS conclude that no significant impact is expected, either in isolation or in combination or cumulative with the ABR Project.

The text for Sections 14.3 and 14.4 remain unchanged.

APPENDIX 1

Business Services Centre
Electricity Supply Board, Lower Fitzwilliam Street, Dublin 2, Ireland
Sraid MacLiam Iochtair, Baile Atha Cliath 2, Eire. Phone: 353-1-6765831 Website: www.esb.ie

Ruth Barr
RPS Consulting Engineers,
74 Boucher Road,
Belfast,
BT12 6RZ,
Northern Ireland

17th May 2013

Sent by email: ruth.barr@rpsgroup.com

Re: Redevelopment of Alexandra Basin, Dublin Port

Dear Ruth,

Further to your correspondence on the 24th April last regarding the above redevelopment proposals by Dublin Port Company, I wish to highlight the following issues on behalf of Electricity Supply Board (ESB). Poolbeg has been the location for power generation in Ireland since the building of a power station at Pigeon House by Dublin Corporation's Electricity Department in 1903. From those beginnings and through the creation of the ESB, the strategic importance of power generation and transmission activity in the Dublin Docklands area has continued to increase. The natural advantages of the location and over 100 years continuous investment has determined future use.

ESB Power Stations at Poolbeg, Ringsend and North Wall and the associated Transmission and Distribution infrastructure are strategic locations both nationally and for the Greater Dublin Area. The extensive Transmission and Distribution Networks at these sites are an essential and substantial component of the National Grid system and as the demand for electricity grows, a need will arise for further Transmission and Distribution Stations in the Dublin Docklands area. In effect, the electricity service for the region is highly dependent on these Dockland sites and their connecting networks which play a critical role in delivery of the national electricity supply.

The ESB sites in the Dublin Docklands area are and will remain important to ESB's long term electricity generation activities. The cooling water system at North Wall Generating Station is currently out of service as the station is operating in single cycle mode. The abstraction of cooling water for its power stations at Poolbeg and Dublin Bay Power is an absolutely essential requirement and the cooling water must be available in an acceptable condition on a continuous basis. The proposed Capital Dredging Scheme (deepening the river bed from 7.8m to 10m) would most likely

have a serious effect on cooling water quality unless agreed mitigating measures are put in place for the duration of works. *ESB expects that it will be consulted in advance of dredging or other works that could impact on any aspect of its operations and in particular, on that of its cooling water systems.*

It is also important to emphasise that the jetty at Poolbeg remains integral to ESB's long term plans for that site.

It would appear that a potential conflict will arise between your proposed plans for the development in the Docklands area and our existing submarine cables as outlined in Appendix A which contains a sketch of ESB infrastructure in the area (Appendix A – the information is indicative only, identification and location of all plant and equipment is to be confirmed by ESB Networks). In particular, I wish to draw your attention to the two 220kV sub-aqua cables crossing the Liffey. There are additional fibre optic cables and 10kV cables also installed in the submarine pipes. As can be seen from your drawings one of the 220kV cables runs along the existing Alexandra Basin quay.

ESB has major safety concerns about the proposed development in the Docklands area and its potential impact on the continuity of supply to our customers. *Consequently, no work should be carried out in the vicinity of 38kV or higher voltage underground cables without prior consultation with ESB Networks.* ESB takes no responsibility and shall bear no liability in relation to any damage, injury or loss of supply as a result of damage or interference with its networks.

ESB is fully supportive of the enhancement of port facilities. In making this representation we are guided by the need for the protection of ESB Generation Stations and the infrastructure which ensures the continuity of supply to all our customers through its Transmission and Distribution networks.

If we can be of any further assistance, or if you wish to clarify any of the points raised, please do not hesitate to contact the undersigned.

Yours sincerely,

Gerard Crowley

Gerard Crowley | Planning & Asset Manager | ESB Business Service Centre | T: +353 1 7027163

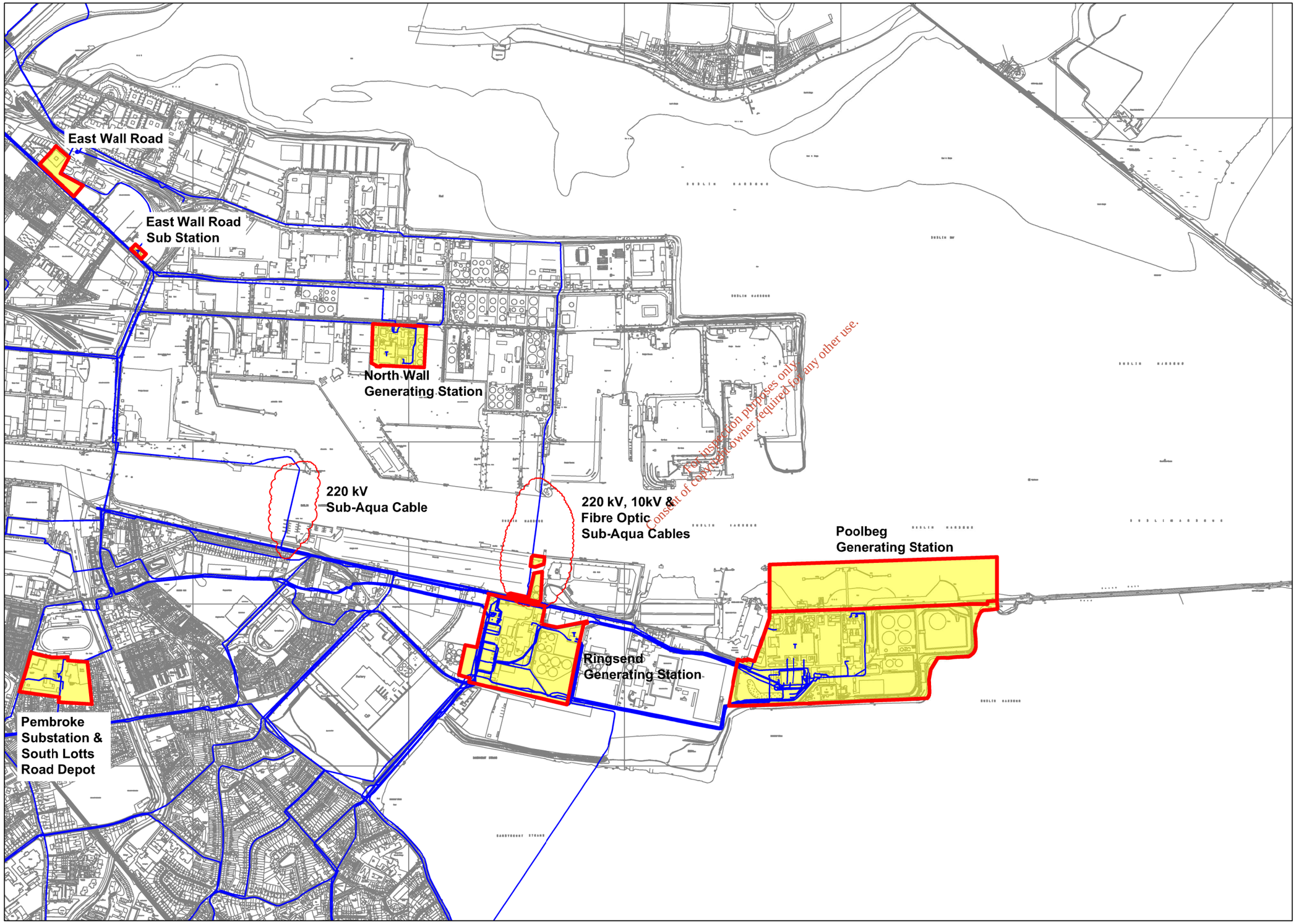
APPENDIX A

WARNING

This map indicates the approximate location of ESB Networks Transmission (400kV, 220kV, 110kV, 38kV) and Distribution (20kV, 10kV, 230V/400V) underground cables and overhead lines in the general area of the proposed works. ESB Networks takes no responsibility for the accuracy or completeness of this map. Low voltage (230V/400V) service cables (e.g. house services, factory/shop services, public lighting lamp services, etc) are not included but their presence should be anticipated. The depths of underground cables must never be assumed. Additional more detailed information is available for high voltage Transmission underground cables (38kV, 110kV, 220kV, 400kV) from the local ESB Networks transmission representative – see attached list for contact details or call 1850 372 757. No work should be carried out in the vicinity of 38kV or higher voltage underground cables without prior consultation with ESB Networks.

Before any mechanical excavation is undertaken, the actual location of all underground electricity cables must be established and verified on site using:
(a) Up-to-date map records; (b) Cable locator equipment operated in both power and radio modes; (c) Careful hand digging of trial holes using 'Safe Digging Practice'. Refer also to "HSA Code of Practice for Avoiding Danger from Underground Services".

ESB takes no responsibility and shall bear no liability in relation to any damage, injury/death or loss of supply as a result of damage or interference with its networks.



NORTH

LEGEND

- ESB BOUNDARY
- STATION LANDS
- MV Cables (38kV, 110kV, 220kV, 400kV)

DO NOT SCALE

ESB Information

ESB Infrastructure Map
Dublin Port Area
Dublin

LOCAL AUTHORITY AREA: Dublin City Council	Prepared by: C Cummins
ESB SITE CATEGORY: Depot/Office	Checked by: G Crowley
DATE: April 2013	SCALE: NTS
Drawing No: Dublin Port_001	

The Oval,
160 Shelbourne Road,
Ballsbridge,
Dublin 4.

160 Bóthar Shíol Bhroin,
Droichead na Dothra,
Baile Átha Cliath 4.

TELEPHONE +353 (0)1 677 1700
FAX +353 (0)1 661 5375
E-MAIL info@eirgrid.com

www.eirgrid.com

An Bord Pleanala,
64 Marlborough Street
Dublin 1

6th May 2014

Dear Sir/Madam,

Re: Alexander Basin Redevelopment Project, An Bord Pleanala Ref. PA0034

EirGrid plc (EirGrid), in its capacity as statutory Transmission System Operator (TSO) is making this submission to An Bord Pleanala in respect of the proposed development of Dublin Port (ABP ref. PA0034). A submission fee in the sum of €50 euro is enclosed.

EirGrid plc (EirGrid) is the national electricity Transmission System Operator (TSO). Statutory Instrument No.445 of 2000 sets out the role and responsibilities of the TSO; in particular, Article 8(1)(a) gives EirGrid, as TSO, the exclusive statutory function:

> *"To operate and ensure the maintenance of and, if necessary, develop a safe, secure, reliable, economical, and efficient electricity transmission system, and to explore and develop opportunities for interconnection of its system with other systems, in all cases with a view to ensuring that all reasonable demands for electricity are met having due regard for the environment."*

In this regard, EirGrid, as Transmission System Operator (TSO), is mandated by the Government to develop, ensure the maintenance of and operate a safe, secure, reliable, economic and efficient transmission system while having due regard for the environment. The national electricity transmission grid plays a vital role in the supply of electricity, providing the means to transport power across a meshed network, from generator locations to demand centres.

EirGrid has reviewed Dublin Port's application for the proposed redevelopment of the Alexander Basin and in particular the proposed:

- *"demolition of: a section of North Wall Quay extension having an area of 21,700 m²"* and *"construction of: New quay walls at North Wall Quay Extension 937 m total*

in length including a rounded eastern end using salvaged stone material from demolished sections of quay."

EirGrid acknowledges the strategic importance of this project. In particular, EirGrid recognises that the project is designed to address capacity constraints that are forecast to emerge in line with an improvement in the State's economy and that the development is consistent with the requirements of the Government's National Ports Policy.

EirGrid refers An Bord Pleanala to EIS Volume 1 – Section 8.10 pg.8-44 'Electricity Supply' & 'Electricity Supply Network and Infrastructure' accompanying the application and confirms that there are two existing high voltage oil filled sub-aqua electricity transmission cables traversing the River Liffey from north to south within the development application boundary. The locations of these are shown on Drawings No. IBM0498-CH-002 (Proposed Channel Layout Sheet 1) & IBM0498-CH-003 & (Proposed Channel Layout Sheet 2) submitted with the application and extracted into Figures 1 and 2 below.

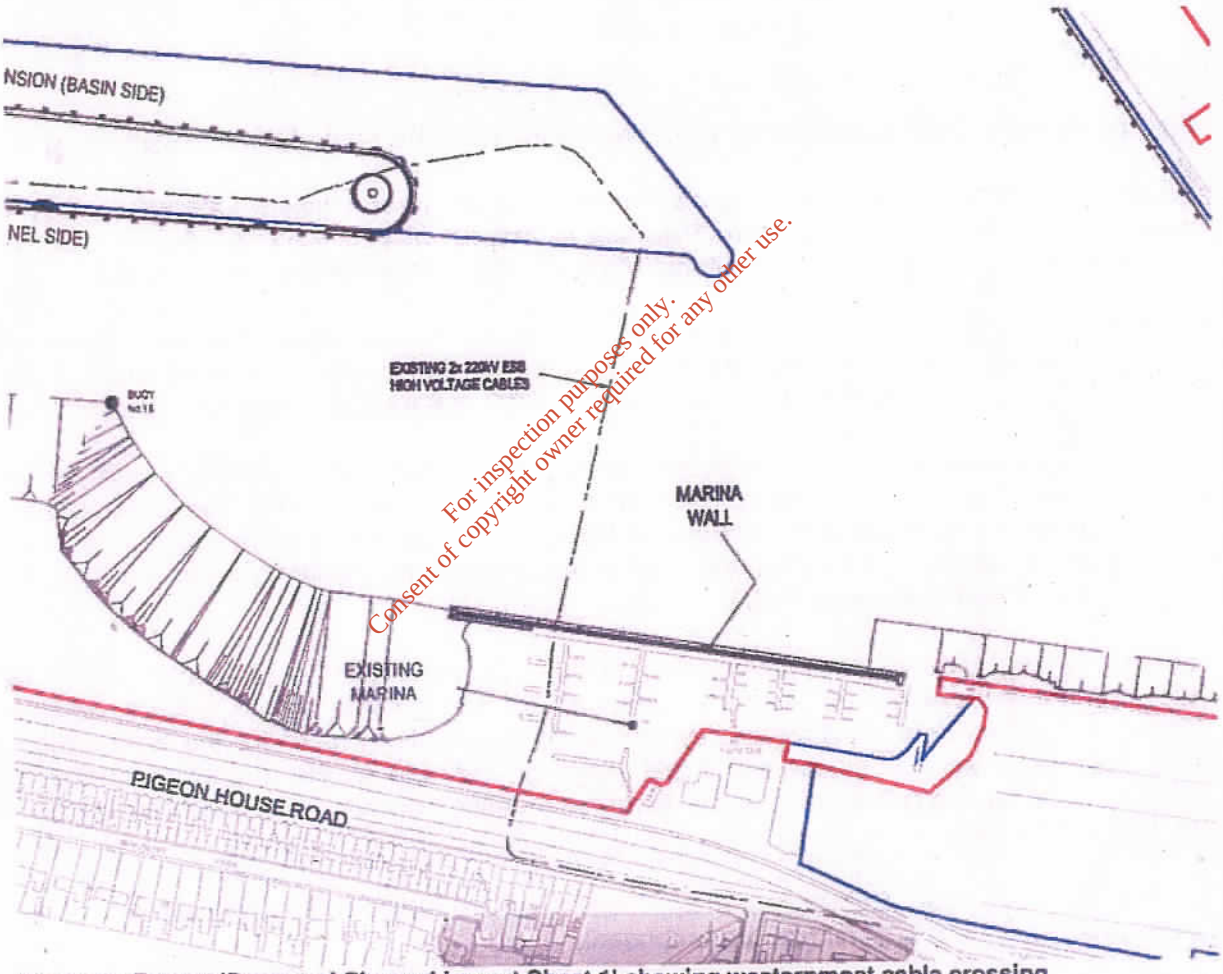


Figure 1: Extract 'Proposed Channel Layout Sheet 1' showing westernmost cable crossing

COMHLACHT CHALAFORT ÁTHA CLIATH
DUBLIN PORT COMPANY

Mr. Gerard Crowley
Planning & Asset Manager
ESB Business Service Centre
27 Lower Fitzwilliam Street
Dublin 2

2nd May 2014

Dublin Port Company's proposed Alexandra Basin Redevelopment Project

Dear Gerard

Further to our meeting in Inchicore today with you and your colleagues from ESB and Eirgrid, I am writing to confirm the progress we have made in the engagement we have had with ESB and Eirgrid over the past months regarding our proposed project in Dublin Port.

At this stage, the issue regarding the 220kV cables in North Wall Quay Extension has crystallised to the requirement for new alternative cables to be run in a different location to maintain the connection between your Poolbeg and North Wall power stations. This would involve running new cables through bed rock underneath the Liffey at a location eastward of our Port Operations Building (likely in the vicinity of ESB's Poolbeg Power Station) and to run in ducting Dublin Port Company would provide in our road network on the northern side of the Port.

This project would be an ESB project and we agreed that both companies will continue to liaise to finalise the design of the necessary works.

I would like to thank you and your colleagues for the openness and support in assisting us with the development of Dublin Port.

Yours sincerely

Eamonn O'Reilly
Chief Executive

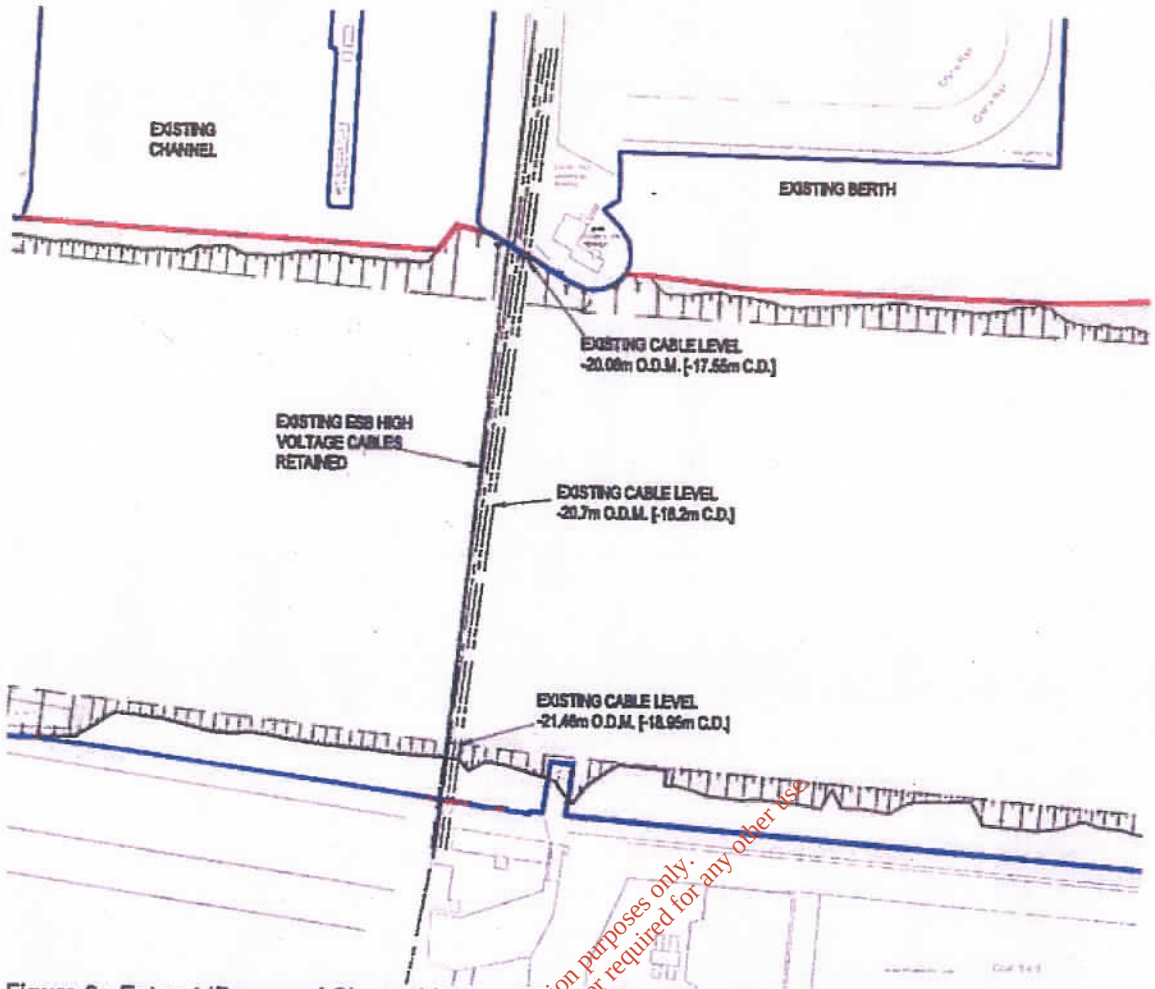


Figure 2: Extract 'Proposed Channel Layout Sheet 2' showing easternmost cable crossing

The proposal to demolish a section of the North Wall Quay extension, as outlined in blue in Figure 1, will require the relocation of the westernmost cable prior to commencement of the proposed port development as part of the enabling works associated with this project.

The westernmost cable is a key element of electricity transmission infrastructure and currently ensures security of supply to Dublin City and the greater Dublin area. Any negative, unplanned loss of this transmission cable will have serious implications in terms of security of supply. EirGrid respectfully submits that the proposed development must ensure the ongoing security and reliability of this strategic element of the transmission system. To this end EirGrid is in on-going discussions with Dublin Port as set out in the attached letter from Dublin Port Chief Executive Officer.

Yours faithfully,

Sinéad O'Malley

Sinéad O'Malley
Principal Planner
EirGrid

Energy for generations

esb.ie

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27 Sráid Mhic Liam Íochtarach, Baile Átha Cliath 2, Éire
Fón +353 1 676 5831

Business Service Centre
27 Lower Fitzwilliam Street, Dublin 2, Ireland
Phone +353 1 676 5831

An Bord Pleanala,
63 Marlborough Street,
Dublin 1.

07 May 2014

RE: Dublin Port - Alexandra Basin Redevelopment Project (An Bord Pleanala Ref. PL29N.PA0034)

Dear Sir/ Madam,

ESB is a statutory corporation established under the Electricity (Supply) Act 1927. Its responsibilities include electricity generation, electricity supply to end use customers and electricity networks - ESB owns the high voltage transmission system and owns and operates the medium to low voltage electricity distribution system. Generally, ESB supports the vision for the enhancement of port facilities as proposed by Dublin Port. Our observations in relation to a small number of key issues are outlined below. These issues are currently under discussion with Dublin Port Company (see letter attached).

The Environmental Impact Statement (EIS) Volume 1 – Section 8.10, Services includes the elements 'Electricity Supply' & 'Electricity Supply Network and Infrastructure', which accompanies the application, seeks to clarify how existing ESB infrastructure will be impacted by the Alexandra Basin Redevelopment (ABR) Project. There is specific commentary on how two existing high voltage sub-aqua electricity transmission cables traversing the River Liffey and the Cooling Water Intake and Outfall Systems servicing three power stations will be impacted by the proposed development.

1.0 Electricity Supply

With regard to impact on Electricity Supply the EIS Volume 1 states:

> *'The electricity supply to Dublin Port Company is provided by ESB networks. The current electricity supply to the Port is robust and provides ample capacity to the Dublin Port Estate. The ABR Project will have no impact on the electricity supply to tenants within the Dublin Port Estate or on neighbouring communities.'*

The Environmental Impact Statement Volume 4, Non Technical Summary, (Section 7, Services) states:

> *'The ABR Project will have no impact on the water supply, electricity supply or gas supply to tenants within the Dublin Port Estate or on neighbouring communities.'*

The Dublin Port hinterland and Poolbeg Peninsula is an electricity generation and transmission/distribution network hub. This infrastructure, which has developed with continued incremental investment for over c.100 years, is essential for the continued provision of a secure and reliable electricity supply to the Dublin City area and the State generally.

The transmission infrastructure on the Poolbeg peninsula and associated cable network is an essential and substantial component of the National Grid system and as the demand for electricity grows, a need will arise for further Transmission and Distribution Stations on the

peninsula. In effect, the electricity service for the City and the Region is wired via the Poolbeg Peninsula and therefore, disruption of supply has potential impacts far beyond 'the Dublin Port Estate or on neighbouring communities'.

Discussions are ongoing between Dublin Port Company and ESB on how to minimise the disruption of supply during the development works.

2.0 Electricity Supply Network and Infrastructure

There are two existing high voltage sub-aqua electricity transmission cables traversing the River Liffey from north to south within the development application boundary. The locations of these are shown on Drawings No. IBM0498-CH-002 (Proposed Channel Layout Sheet 1) & IBM0498-CH-003 & (Proposed Channel Layout Sheet 2) submitted with the application (and extracted into Figures 1 and 2 in Appendix A). The EIS refers to previous discussions between ESB and Dublin Port and the information provided by ESB on the location on electricity supply network, infrastructure including high voltage cables crossing the Navigation Channel and outlines:

> *'There are two 220 kV sub-aqua cables across the Liffey. There are also fibre optic cables and 10kV cables installed in the same submarine pipelines. These cables are at a depth of 10m underneath the current seabed level. The proposed capital dredging scheme will deepen the navigation channel from – 7.8m CD to – 10m CD, that is, an average depth of 2.2m. The existing high voltage sub-aqua cables will not, therefore, be impacted by the proposed capital dredging scheme. ESB Networks have underground cables along the North Wall Quay Extension and in other parts of Alexandra Basin West. They have advised that "no works should be carried out in the vicinity of 38kV or higher voltage underground cables without prior consultation with ESB Networks. The engineering design team are aware of the locations of the cables from existing service drawings and will take this into consideration during the construction phase of the project. ESB Networks will be contacted when any works are planned in close proximity to any of their assets.'*

Demolition of the existing quay wall at Alexandra Basin will impact on the westernmost cable (the North Wall-Poolbeg 220kV Cable). Following recent discussions with Dublin Port Company, it has been agreed that the probable solution will be to replace this cable. This would require running new cables through bedrock underneath the Liffey at a location eastward the existing sub-aqua cable locations. It would also involve the placement of ducting on Dublin Port Company lands in the road network on the northern side of the river Liffey to link the cable with North Wall Generating Station.

3.0 Electricity Generation

The EIS states:

> *'There is a cooling water intake and outfall servicing three power stations, including the Poolbeg Electricity Generating Station. Further discussion with the operators will take place during the development of the Construction Environmental Management Plan (CEMP) to ensure safeguards are put in place to avoid disruption to the power station. Measures will include the establishment of monitoring buoys and the setting of water quality trigger levels which can initiate the temporary cessation of elements of the works which may be causing elevated levels of water quality parameters such*

as turbidity during dredging. The proposed capital dredging scheme of the navigation channel will not directly impact on the physical integrity of either the intake or outfall pipes as both pipes lie outside the footprint of the area to be dredged.'

To protect ongoing operations at the three ESB Electricity Generating Stations it is necessary that:

- Adequate safeguards are put in place to avoid disruption to power station operations and there will be no impact on the physical integrity or operation of either the intake or outfall pipes.

- Measures will include the establishment of monitoring buoys and the setting of water quality trigger levels which safeguard ESB power station operations and which can initiate the temporary cessation of elements of the works which may be causing elevated levels of water quality parameters such as turbidity during dredging.

4.0 Conclusion

ESB submit that unplanned loss of electricity generation or transmission capacity could have significant implications in terms of electricity supply in the Greater Dublin Area due to the strategic importance of electricity generation and transmission infrastructural assets in the Dublin Port area.

ESB acknowledges the strategic importance of the Alexandra Basin Redevelopment Project and it has been agreed by both ESB and Dublin Port Company that we will continue to liaise to finalise the design of any necessary works associated with the North Wall-Poolbeg 220kV Cable.

If we can be of any further assistance, or if you wish to clarify any of the points raised, please do not hesitate in contacting the undersigned.

Yours sincerely,

Gerard Crowley | Planning & Asset Manager | ESB Business Service Centre |
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APPENDIX A

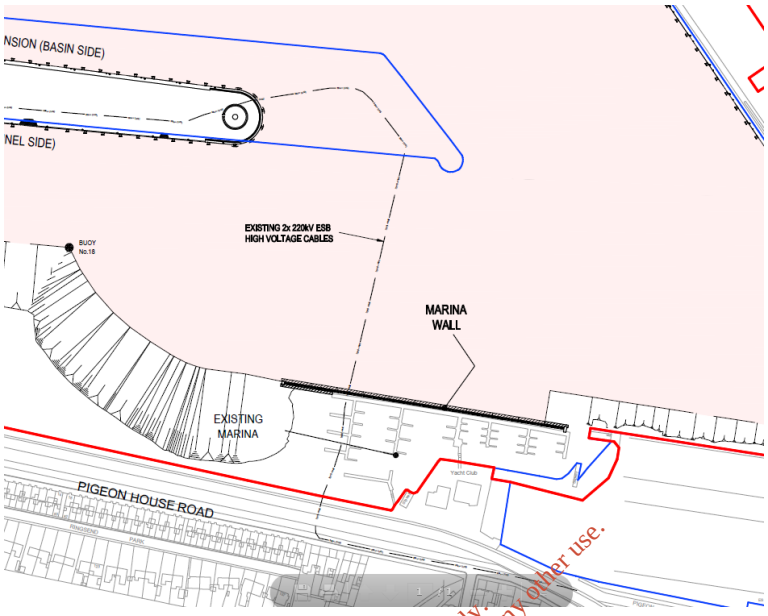

Figure 1: Extract 'Proposed Channel Layout Sheet 1' showing westernmost oil-filled cable crossing

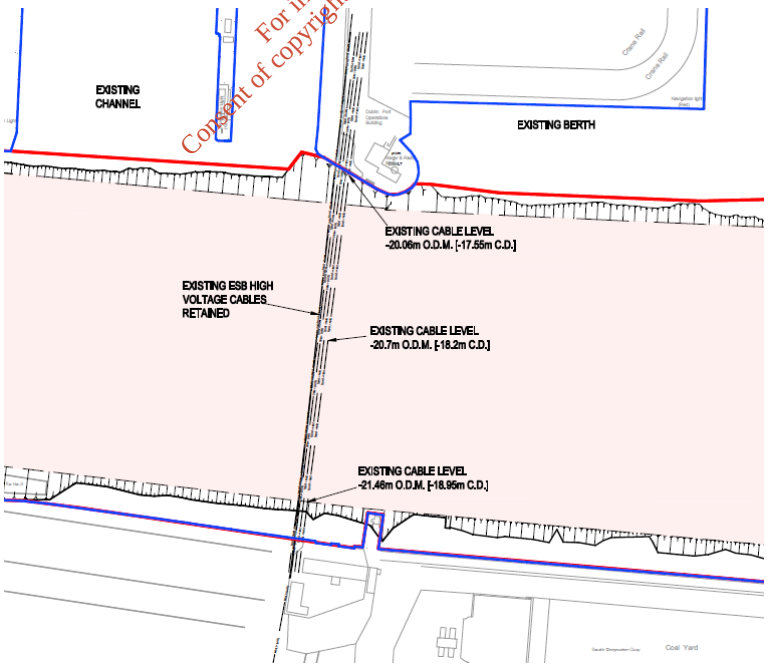

Figure 2: Extract 'Proposed Channel Layout Sheet 2' showing easternmost cable crossing

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