Introductory Chapters

Appendix 4A: Original OnTW ES Chapter 4

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Abbreviations and Acronyms

AC	Alternating Current
AIS	Air Insulated Switchgear
CCGT	Cockenzie Combined Cycle Gas Turbine Power Station
CION	Connection Infrastructure Options Note
DC	Direct Current
EIA	Environmental Impact Assessment
ELC	East Lothian Council
ES	Environmental Statement
GIS	Gas Insulated Switchgear
ICOL	Inch Cape Offshore Limited
OfTO	Offshore Transmission Owner
OnTW	Onshore Transmission Works
PAN	Proposal of Application Notice
NETS	National Electricity Transmission System

4A 2014 Site Selection and Alternatives

4A.1 Introduction

1 Part 1 (2) of Schedule 4 of The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 (the EIA Regulations), require an Environmental Statement (ES) to provide an outline of the main alternatives studied by the applicant.

2 This chapter provides an overview of the process by which ICOL identified the Application Site, as illustrated in Figure 1.1, and the main reasons for the identification of Cockenzie as the connection point to the National Electricity Transmission System (NETS).

4A.2 The Project

4A.2.1 Context

3 The requirements for OnTW in relation to the wider Project are set out in *Section 1.1* which confirms that the OnTW are required to connect the Wind Farm to the National Electricity Transmission System (NETS). As described in *Section 1.2.1* ICOL is currently acting as an 'interim Offshore Transmission Owner (OfTO)'. As an OfTO, ICOL is required by OfGEM to deliver best value for money to the customer and justify their key decisions as part of the obligations under the Energy Act 2004.

4A.2.2 Grid Connection Agreement

4 During 2011, a range of possible locations where the Wind Farm could connect to the NETS were identified through an iterative process involving ICOL, National Grid and the relevant onshore Transmission Owners, hereafter described as the Connection Infrastructure Options Note (CION) process. This process included consideration of locations at Arbroath and Tealing in Angus, several locations in East Lothian such as New Branxton, Cockenzie and Torness, Crystal Rig and locations in the North East of England at Blyth and Hawthorn Pit, as illustrated in Figure 4.1.

5 The principle criteria used to assess these options were:

- Environmental considerations;
- Economics of overall NETS design (including the OfTO system);
- Programme of works and contract dates;
- NETS capability, constraints and requirements for wider improvement works;
- Economically efficiency for the UK electricity consumer; and
- Optimal nationwide electrical solutions.

6 The CION process concluded that while the option of connecting the Wind Farm to the NETS at Arbroath would require a shorter offshore cable connection, the knock-on effect would result in requirements for significant onshore works including new and upgraded overhead power line systems. The overall environmental impact of this option was considered high and

the overall cost would not be as economically efficient for the UK consumer compared to a connection at Cockenzie.

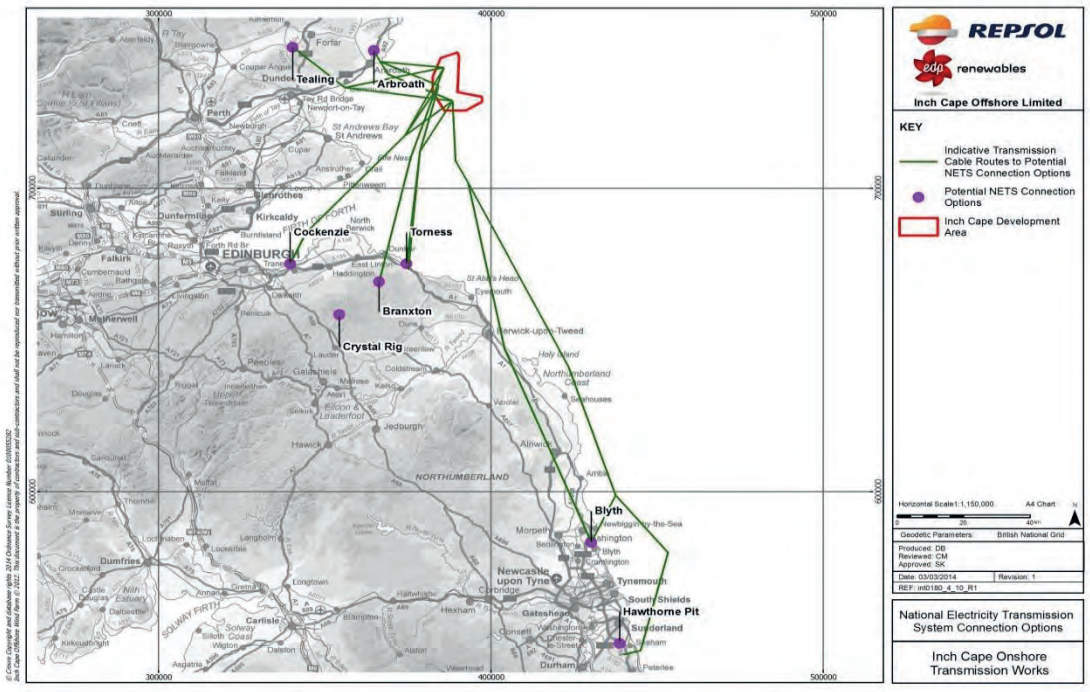
7 Potential grid connection locations to North East England were also discounted. Although such options would remove the requirement for the transfer of power flow across the Scotland/England interconnector, they would significantly increase the length of offshore cable required to reach landfall. These options would not be as economically efficient for the UK consumer compared to a connection at Cockenzie.

8 Other connections in East Lothian were considered to be sub-optimal due to the length of onshore cable required, the third party costs associated with wider NETS upgrades, and the availability of adequate capacity to connect the Wind Farm within the project timescales. Limited capacity was available in the Torness/Crystal Rig area due to earlier connection agreements relating to other generation projects.

9 Following the conclusions of this process ICOL accepted an onshore grid connection offer from National Grid Electricity Transmission in January 2012 for 1,050 Megawatts with a connection point at the existing substation at Cockenzie. The outcome of this 2011 assessment was reviewed in 2013, based upon updated assumptions and design information, and the connection at Cockenzie remained the optimal option to deliver the requirements and obligations of all parties and best meeting the criteria used for the assessment.

10 Following acceptance of the grid connection offer in 2012, ICOL initiated an identification and assessment process for a location capable of accommodating the OnTW and associated works as close as practicable to the NETS connection point.

Figure 4A.1: NETS Connection Options



4A.3 Site Selection and Design Refinement

11 Once this grid connection point was confirmed, a number of design and site identification processes were undertaken in a series of stages by ICOL. Details of these are provided in Sections 4.4 to 4.9 and a timeline which provides an overview of these tasks is shown below in Figure 4.2.

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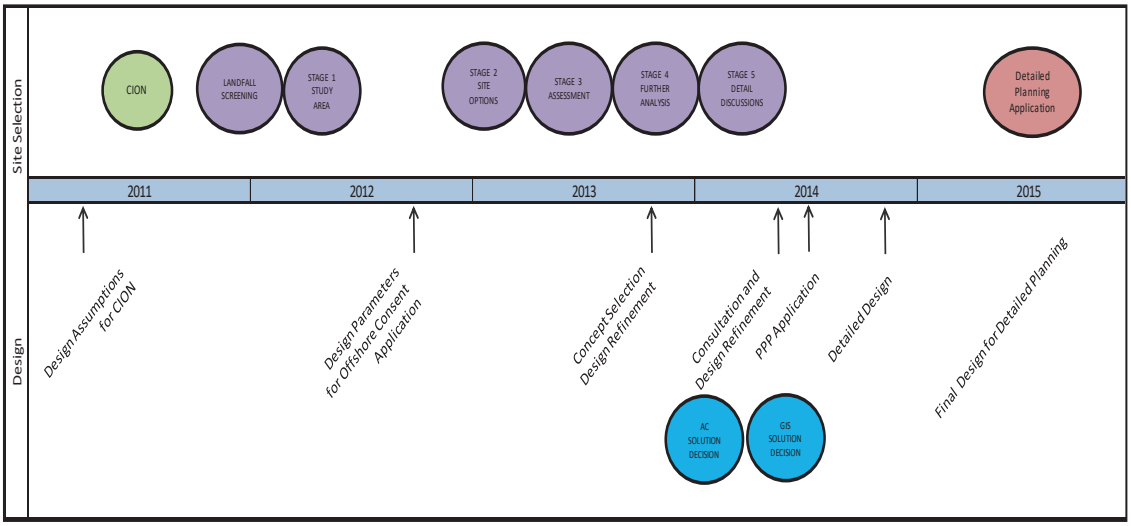
Figure 4A.2: Timeline of Activities



4A.4 Alternatives

As part of the Project design and engineering processes a number of technical solutions were considered. The evaluation of technical solutions was advanced in parallel with the site selection process, as shown in the timeline above in Figure 4.2.

4A.4.1 Technical Design Decisions

Alternating Current vs Direct Current

13 Two technical solutions are possible for the Export Cables, either Alternating Current (AC) or Direct Current (DC). Analysis during engineering concept selection identified the following risks with DC equipment:

- Relatively unproven technically;
- Delivery timescales were longer than required;
- Larger footprint required offshore and onshore; and
- Higher cost than AC.

14 These constraints, combined with further environmental and planning sensitivities identified during stage four of the site selection process (*Section 4.9*), resulted in a DC solution being ruled out.

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Air Insulated vs Gas Insulated Switchgear

17 Both Air Insulated Switchgear (AIS) and Gas Insulated Switchgear (GIS) technical solutions were considered for the Onshore Substation design.

18 National Grid Guidelines (National Grid 2006) define the type of primary insulation to be used in National Grid substations. These take into account environmental conditions and project specific requirements. The final Onshore Substation design decision was based on the following criteria from the National Grid Guidelines:

- Outdoor AIS should not be used within 5 km of the coast or saline estuary, unless the site is reliably (and demonstrably) afforded protection from winds by hills or structures. In this instance, the National Grid Guidelines list indoor GIS as the preferred technology; and
- The National Grid Guidelines further state that GIS technology should only be considered where it offers the lowest lifetime cost solution.

19 Outdoor AIS was therefore screened out due to the proximity of the Application Site being c. 1 km from the coast. Economic analysis identified that a GIS solution and Indoor AIS solution were broadly similar in cost. The footprint of a GIS substation is significantly smaller than an Indoor AIS substation and provided an ability to microsite within the Application Site on the basis of environmental and setting considerations to avoid some environmental constraints and to best fit in the landform. Based on these considerations GIS was confirmed as the selected option for the Onshore Substation.

4A.4.2 Export Cables Requirements

20 As part of the CION process an early decision was made that all Onshore Export Cables would be underground as this removes any permanent visual intrusion.

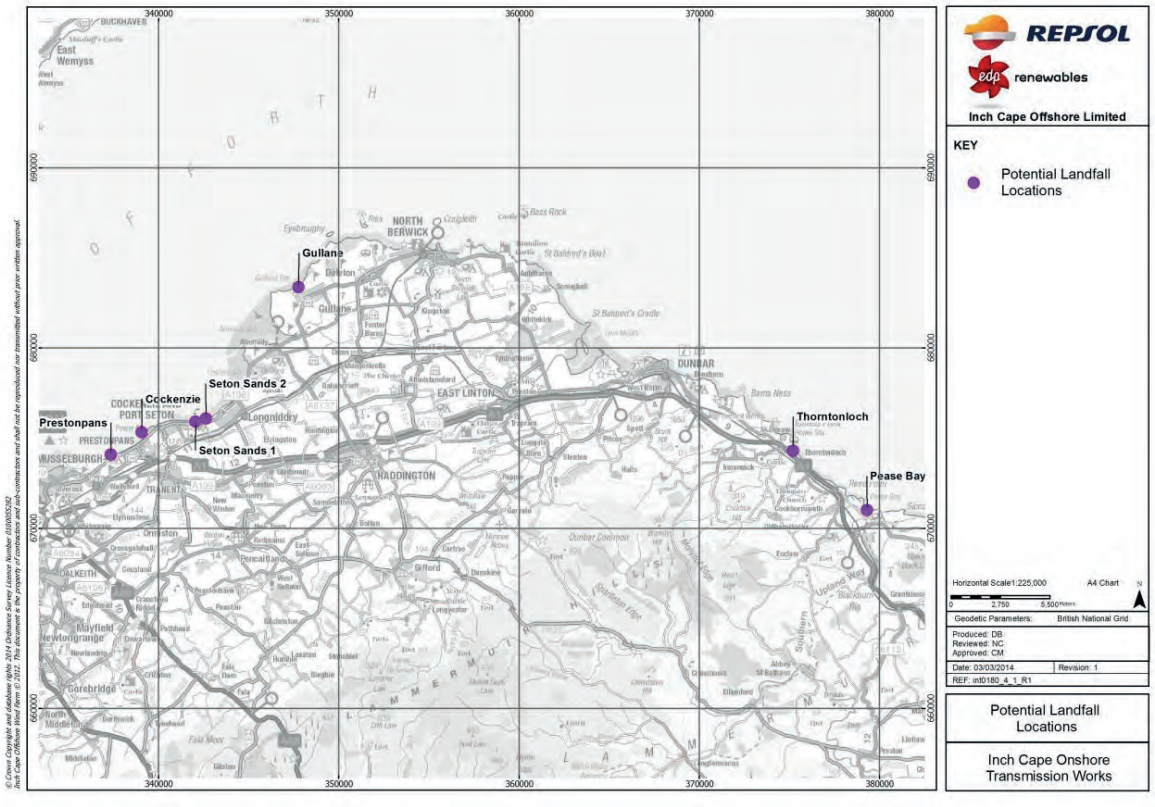
21 During engineering concept selection, the number of cables necessary to transmit electricity from the Wind Farm to the NETS reduced from six to four. This was primarily based on the identification of optimal materials, electrical capacity requirements and installation costs. The identified corridor is 60m wide with the necessary burial trenches not individually exceeding 1.5 m in width. The actual locations within the identified corridor will be confirmed based on detailed design and site investigation.

4A.5 Landfall Screening Options

4A.5.1 Identification of Potential Landfall Areas

22 An desktop evaluation was undertaken of potential landfall locations along the East Lothian coast from Prestonpans to Throntonloch. Six potential locations were identified following an analysis of offshore bathymetric approaches, offshore geotechnical conditions, and offshore/coastal environmental designations (see Figure 4.3 below). Onshore cable route distances and key environmental, technical and economic factors were considered. Considering both offshore and onshore factors, two potential landfall locations were selected from the screening process, at Cockenzie and Seton Sands. This process is detailed in the Inch Cape Offshore Environmental Statement, Appendix 6B (ICOL, 2013).

Figure 4A.3: Potential Landfall Locations

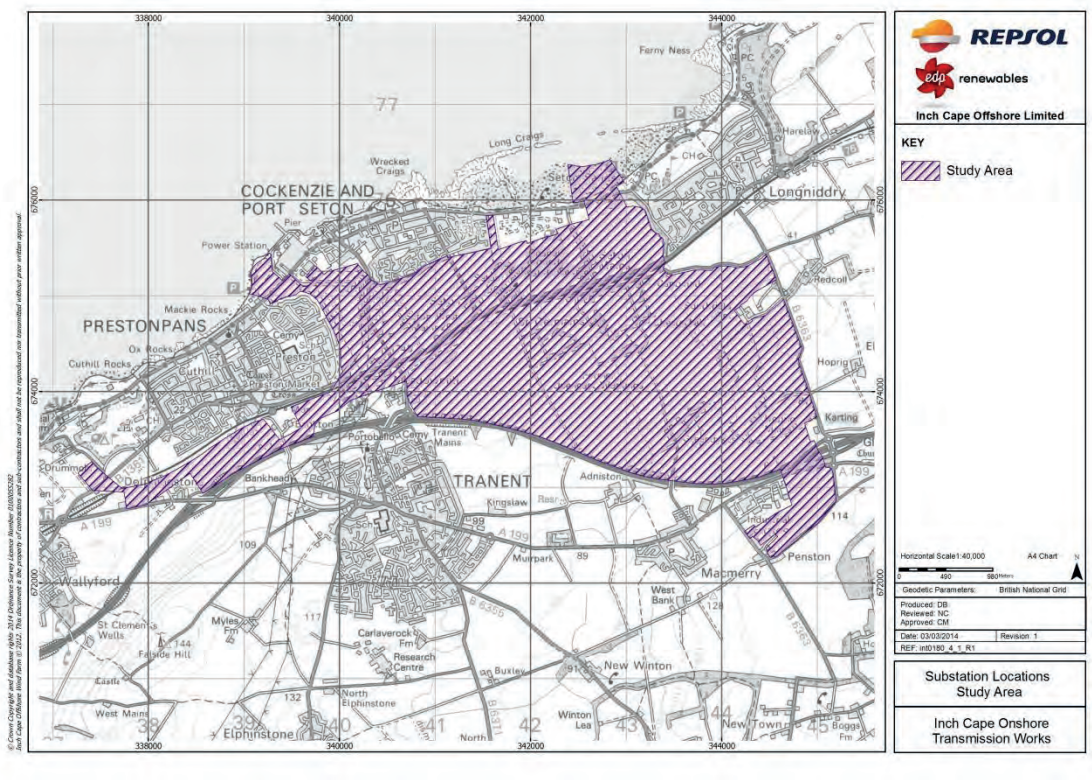


4A.6 Site Selection – Stage 1: Study Area

4A.6.1 Identification of Study Area

23 In mid-2012 ICOL identified a 'Substation Location Study Area', within which it would focus its principal efforts to identify a site capable of accommodating the various works associated with the OnTW.

Figure 4A.4: Substation Location Study Area



24 This study area incorporated the two potential landfall locations (Cockenzie and Seton Sands) and the grid connection at the existing Cockenzie Substation (*Figure 4.4*). and included land areas capable of accommodating the maximum potential dimensions of the Onshore Substation; this was done using the following criteria:

- Distance from the grid connection – locations which minimised the potential for unacceptable delay to the delivery programme or significantly increased construction costs were considered less attractive. Minimising distance from the landfall options and the grid connection was a priority in order to meet the statutory duties outlined in *Section 4.2*. In addition, ICOL recognised the potential for disruption to the land use or the environment and sought to minimise the extent of land which would be affected;
- Consideration of intervening land uses for cable routing – given the requirement to connect the Onshore Export Cables to the Onshore Substation and then to the grid connection point, it was considered important to identify and avoid those locations potentially most sensitive to the disturbance caused by the introduction of underground cables (e.g. the qualifying features of environmental designations and residential areas within settlement boundaries);
- Minimise the requirement for road and/or rail crossings – the requirement to cross roads and/or railway lines adds costs and complexity to the engineering process and potentially

disrupts the operation of these networks. The study area boundary considered the potential implications for project engineering associated with these potential constraints, while at the same time seeking to avoid being overly restrictive in identifying the initial Study Area; and

- Avoid sites within the urban area – a decision was taken to exclude land from within defined settlement boundaries from the Study Area as it was considered sites of the size required within such locations would most probably be more desirable locations for other land uses e.g. housing, employment, education, retail. The potential implications of disturbance to local residents and businesses associated with cable laying activities was also a consideration in deciding to exclude areas with defined settlement boundaries from the Study Area.

4A.7 Site Selection – Stage 2: Identification

25 Once the Study Area was defined, ICOL prepared an initial range of planning and environmental criteria based on the guidelines set out in the Horlock Rules (National Grid, 2006) and taking into account available relevant environmental and planning information relating to the Study Area. The Horlock Rules are National Grid's guidelines on siting and design of substations. The criteria used were:

- Existing and proposed land use designations as defined in the East Lothian Local Plan 2008 (the Local Plan);
- Undetermined applications for planning permission or approved, but unbuilt, planning permissions;
- Cultural heritage designations and other relevant interests;
- Landscape designations and sensitive receptors;
- Natural heritage designations;
- Identified areas of flood risk;
- Other land use constraints e.g. areas safeguarded for mineral extraction, utilities and any associated buffer zones; and
- Proximity to other potential constraints e.g. railway lines and major roads.

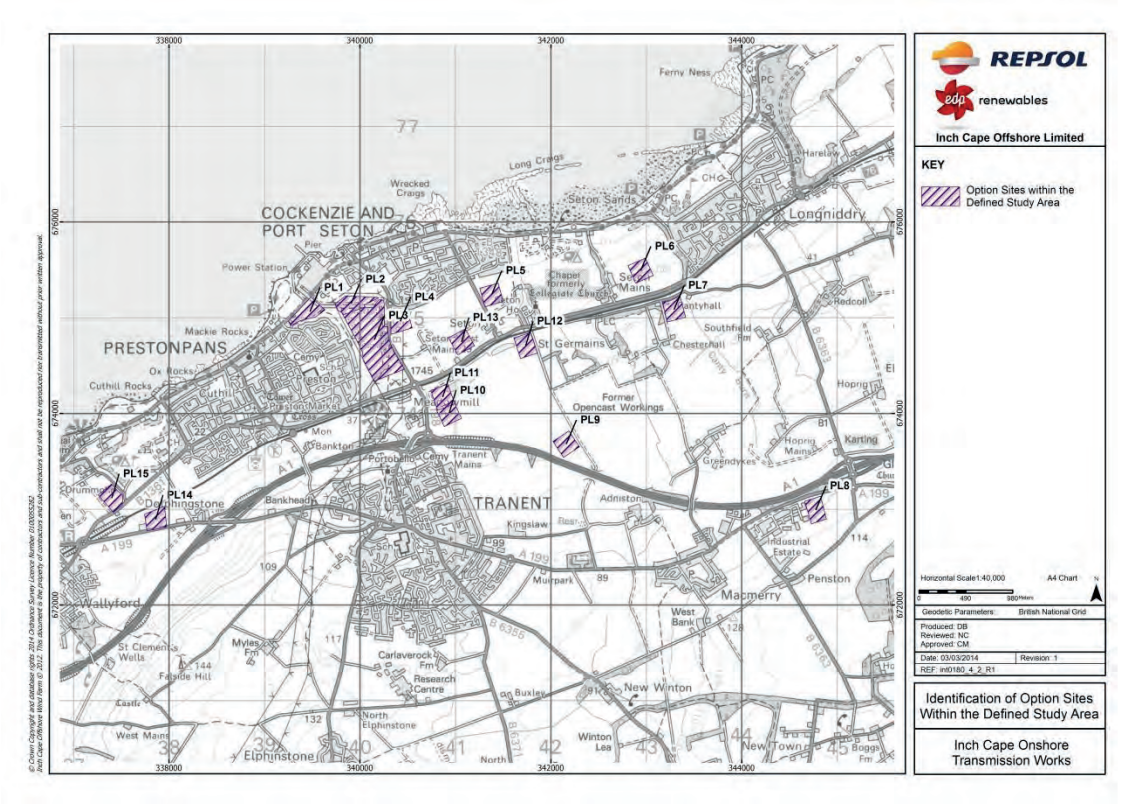
26 The Stage 2 appraisal using these criteria was undertaken in mid 2012 (see Figure 4.2 timeline). This desk based information was supplemented by information gathered in site visits. The objective of this exercise was to identify sensitivities and constraints for areas able to accommodate the footprint of the OnTW which would then be subject to more detailed analysis as part of the Stage 3 assessment.

27 A multidisciplinary appraisal of potential Onshore Substation Sites within the Study Area was undertaken using the criteria listed above.

28 ICOL identified 15 possible sites within the defined Study Area, using the multidisciplinary approach describe above, which were considered suitable for further detailed consideration

as part of the Stage 3 assessment. These sites are referenced PL1-PL15 and are shown on Figure 4.5.

Figure 4A.5: Substation Sites Identified

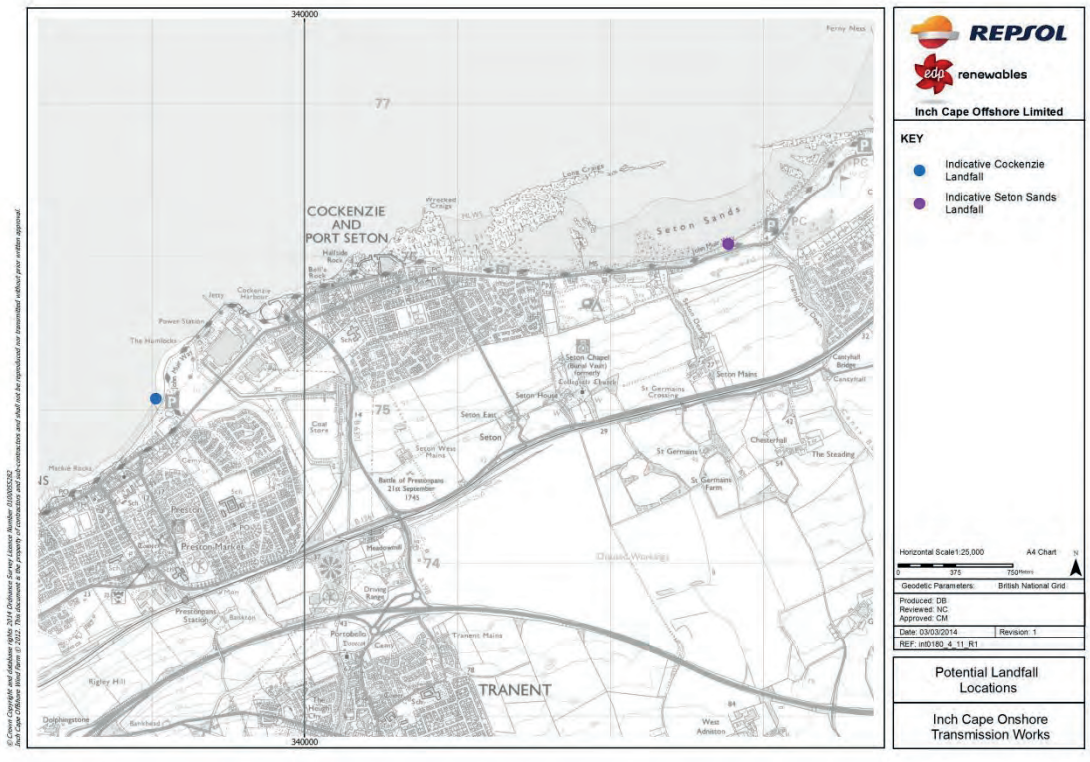


4A.8 Site Selection – Stage 3: Assessment

4A.8.1 Overview

29 More detailed assessment of each of the 15 site options was undertaken considering each in relation to the two potential landfall locations, at Cockenzie and Seton Sands (Figure 4.6), and potential associated cable corridors.

Figure 4A.6: Cockenzie and Seton Sands Potential Landfall Locations



4A.8.2 Landscape and Visual Analysis

30 As part of the Stage 3 assessment, an initial appraisal of the potential landscape and visual impacts associated with the 15 identified potential Onshore Substation Sites was also undertaken. This analysis considered each of the potential Onshore Substation Sites in relation to landscape character, landscape designations, visual receptors e.g. local residents, recreational receptors as well as paths, road and rail users.

31 At this stage of the assessment process, ICOL introduced broad parameters of potential size of the Onshore Substation into the analysis to ensure the landscape and visual analysis considered potential building scale. The configuration of the substation was not final, so the landscape and visual analysis progressed on the basis of the maximum parameters which included a building height of up to 25 m, which was based on an indoor AIS maximum size, although smaller GIS solutions were also considered against site parameters to ensure potentially suitable sites were not ruled out.

32 Initially, the appraisal comprised a desk based study of available information which was later supplemented by site inspections. The findings of the landscape and visual appraisal fed into the wider Stage 3 multidisciplinary assessment.

4A.8.3 Engineering Considerations

33 The Stage 3 engineering assessment comprised an overview of the potential safety, technical and engineering complexity associated with each of the 15 potential Onshore Substation Sites,

including an overview of landfall at both Cockenzie and Seton Sands. The following were considered as part of this assessment:

- The requirement for major road and rail crossings;
- Traffic and access requirements;
- Site stability;
- Presence of utilities;
- Length of Onshore Export Cables required;
- Specific engineering issues associated with landfall; and
- Issues associated with connecting to the NETS.

4A.8.4 Development Programme

34 Consideration was given to a number of programme risks, including:

- The likely duration of the construction programme associated with each of the 15 sites to gauge which were more likely to meet ICOL's overall Project programme (for example the extent of other matters which would need to be agreed with statutory undertakers and other agencies e.g. agreements for railway crossings);
- Technical complexities of connecting the Onshore Export Cables to each site;
- Construction of the Onshore Substation; and
- Interactions with neighbouring land uses (whether existing, approved, adopted or proposed).

4A.8.5 Economic Considerations

35 Consideration was given to the potential costs of constructing the OnTW at each of the identified potential sites, considering costs associated with landfall at both Cockenzie and Seton Sands. Factors considered as part of this exercise included an assessment of the cable length requirements for each site and associated costs for each, costs associated with major road and rail crossings, and costs associated with bringing the Onshore Export Cables ashore at each of the two landfall locations.

4A.8.6 Land Availability

36 Information relating to establishing land ownership information was gained for each of the 15 sites and potential cable corridor areas. Various landowners were approached and feasibility discussions commenced, where possible, to ascertain the availability of the preferred sites.

4A.8.7 Summary of Stage 3 Assessment

37 The Stage 3 assessment of the 15 sites culminated in a workshop in July 2012 attended by relevant ICOL team members and consideration of each site against a range of planning, environmental and technical criteria. The outcome of the workshop identified a shortlist of sites which were considered suitable for further analysis as well as giving greater consideration

to the potential route of a cable corridor study area, between the two potential landfall locations and the grid connection point at Cockenzie. The remaining sites were discounted for planning, environmental or technical considerations, as summarised below in *Table 4.1*

Table 4A.1: Summary of Stage 3 Site Assessment

ICOL Site Reference	Factors in favour of the site	Factors against the site	Stage 4 Assessed Yes/No
PL1 – adjacent to Preston Links	Proximity to connection point. Access from road system. Site is within single ownership and is partly located with an area safeguarded for use as or in association with a power generating station.	Whole site located in designated area of open space in local plan policy C3. Potentially high landscape and visual impacts, proximity to European, and national environmental designations, presence of utilities and redundant mine shaft. Proximity of consented Combined Cycle Gas Turbine (CCGT) plant and gas pipeline at Cockenzie a potential spatial and temporal conflict during construction. Land not available.	No
PL2 – adjacent to Cockenzie Substation	Proximity to connection point. Access from road system. Site is within single ownership and is partly located with an area safeguarded for use as or in association with a power generating station.	Site located in area of designated area of open space in local plan policy C3. Potentially high landscape and visual impacts. Proximity of consented Combined Cycle Gas Turbine (CCGT) plant and gas pipeline at Cockenzie a potential spatial and temporal conflict during construction. High risk site due to being directly under high voltage overhead lines. Congestion of new and existing buried electricity cables. Land not available.	No
PL3 – at or around Coal Store	Proximity to connection point. Access from road system. Incorporates areas of brownfield land. Site is within single ownership and is partly located with an area safeguarded for use as or in association with a power generating station. Potential to mitigate landscape or micro-site development to avoid cultural heritage features. Land potentially available.	Proximity to archaeology and cultural heritage features including Waggonway and Prestonpans Battlefield. Proximity to some utilities and redundant mine shaft. Proximity to consented gas pipeline corridor to be considered. Marginally longer onshore cable route than PL1 or PL2.	Yes

ICOL Site Reference	Factors in favour of the site	Factors against the site	Stage 4 Assessed Yes/No
PL4 – north west of Seton Mains West	Proximity to connection point. No obvious technical or engineering constraints at substation site. Access from road system.	Site located entirely with land designated as Policy DC1 (Development in the Countryside) under the East Lothian Local Plan 2008 (East Lothian 2008) with inward views from the east. High voltage overhead line passes through the site and large scale earth bunding/screening required due to nearby buildings and open views. Directly in view of core of Prestonpans Battlefield.	No
PL5 – near Seton House	No obvious technical or engineering constraints at substation site. Mid way between landfalls could provide flexibility.	Located further east than PL4, this site is also located within land designated in the Local Plan as countryside (DC1). Longer and more complex onshore cable route. Considered to be of high sensitivity in landscape terms due to the proximity of nearby housing to the north, Seton House and Prestonpans Battlefield. Large scale earth bunding/screening required due to nearby buildings and open views.	No
PL6 – east of Seton Mains	Site is largely screened from view from nearby residential properties due to existing tree screening. Potential to mitigate landscape or micro-site development to minimise visual. No obvious technical or engineering constraints at substation site. Close to Seton Sands landfall.	Site located within land designated as open countryside to west of Longniddry settlement boundary. Longer and more complex onshore cable route.	Yes
PL7 – south east of Longniddry	Reasonably close to Seton Sands landfall. Access from road system.	Site located within land designated as open countryside (DC1) to south of main east coast railway line. Crossing of railway line required with associated costs and technical complexities. Need for new access road (circa 5km), with associated costs and visual impacts. Proximity to consented gas pipeline corridor to be considered. Site considered one of the most sensitive of all 15 in landscape and visual terms.	No

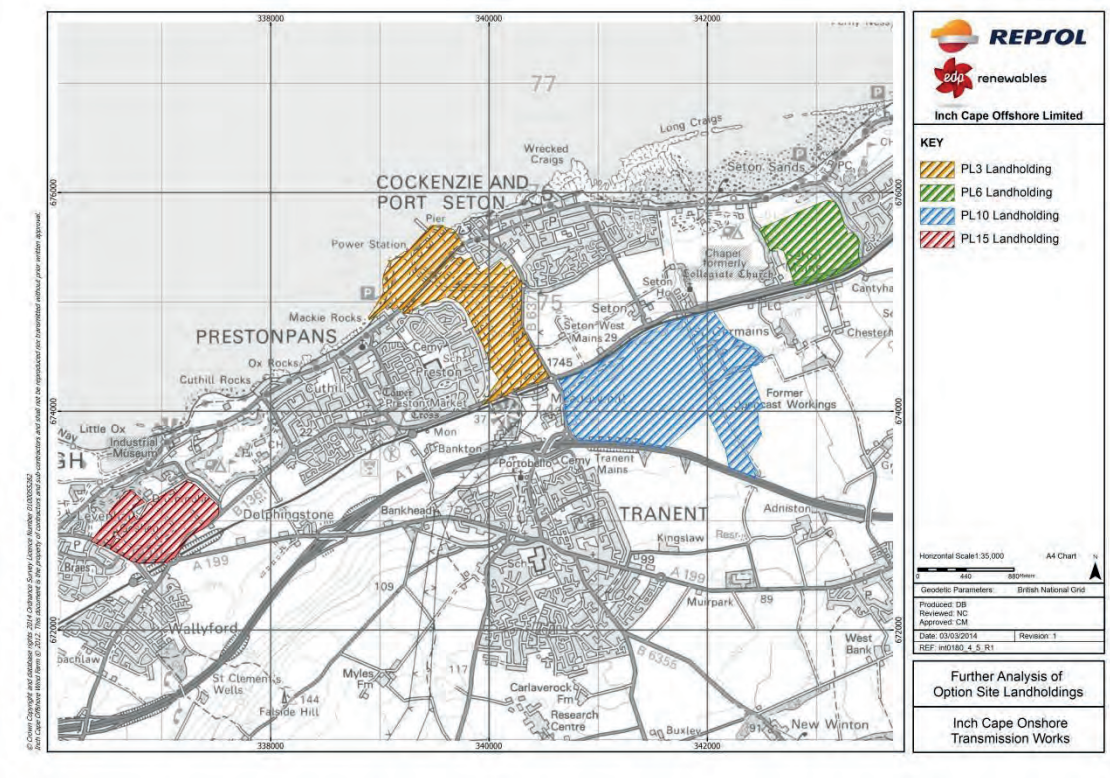
ICOL Site Reference	Factors in favour of the site	Factors against the site	Stage 4 Assessed Yes/No
PL8 – near Macmerry Industrial Estate	Immediately adjacent to existing Macmerry Industrial Estate and fewer landscape and visual concerns. Access from local road system to potential substation site.	Located within land designated as open countryside. Significant distances from both landfall location (approximately 6 km) and grid connection (approximately 5 km). Longer and more complex cable routes and requirement to cross east coast railway line. High cost and development programme implications.	No
PL9 – south east corner of Blindwells	Access from local road system to potential substation site. Land potentially available.	Not considered consistent with Blindwells strategic residential allocation. Possible programme issues due to potential parallel construction. Possible land stability/contamination issues associated with previous use as a coal mine as well as presence of several abandoned mine shafts. Longer distance from both landfall locations than other options. Visually prominent and open site.	No
PL10 - west side of Blindwells	Considered most suitable of sites identified within wider Blindwells allocation. Topography of the site provides opportunity to minimise potential impacts on existing receptors. Land potentially available.	Possible land stability/contamination issues associated with previous use as a coal mine as well as presence of several abandoned mine shafts. Longer distance from both landfall locations than other options. Crossing of east coast main line required.	Yes
PL11 – north west corner of Blindwells	Topography of the site provides some opportunity to reduce potential impacts on existing receptors. Land potentially available.	Not considered consistent with Blindwells strategic residential allocation. Possible programme issues due to potential parallel construction. Possible land stability/contamination issues associated with previous use as a coal mine as well as presence of several abandoned mine shafts. Longer distance from both landfall locations. Proximity to consented gas pipeline corridor to be considered. Large pond on site and dismantled railway runs through site.	No

ICOL Site Reference	Factors in favour of the site	Factors against the site	Stage 4 Assessed Yes/No
PL12 – north east corner of Blindwells	Topography of the site provides some opportunity to reduce potential impacts on existing receptors. Land potentially available.	Near to Blindwells Mine Water Treatment Plant. Possible programme issues due to potential parallel construction. Possible land stability/contamination issues associated with previous use as a coal mine as well as presence of several abandoned mine shafts. Longer distance from both landfall locations. Proximity of east coast railway line a potential issue for parallel cable corridor. Proximity to consented gas pipeline corridor to be considered. Considered more visually prominent than PL10 and PL11.	No
PL13 – near Seton Mains West	No significant obvious technical or engineering constraints at substation site. Mid way between landfalls could provide flexibility.	Located within land designated as open countryside to north of east coast railway line. High visual sensitivity due to open and small scale nature of landscape. Screening and bunding would be highly visible due to open nature of landscape. Directly in view of core of Prestonpans Battlefield.	No
PL14 – near Dolphinstone	Located adjacent to waste recycling plant and landscape and visual issues may be limited. Potential to offer alternative landfall at Prestonpans if other landfalls proved technically unfeasible. Reasonable local road access.	Site allocated within designated Green Belt. Not suited to Seton Sands or Cockenzie landfall. Previously used as an open cast mine with several abandoned mineshafts. High voltage critical infrastructure would be affected and diversion of BT services required. Crossing of east coast rail line required.	No

ICOL Site Reference	Factors in favour of the site	Factors against the site	Stage 4 Assessed Yes/No
PL15 – near Drummohr	Large site with potential to mitigate landscape or micro-site development to minimise visual impact. Limited technical/engineering constraints at substation site. Potential to offer alternative landfall at Prestonpans if other landfalls proved technically unfeasible. Reasonable local road access.	Site allocated within designated Green Belt. Not suited to Seton Sands or Cockenzie landfall. Crossing of east coast rail line may be required due to developed areas.	Yes

38 The Stage 3 site assessment concluded that the landholding areas within which sites PL3, PL6, PL10 and PL15 were located should be taken forward for further analysis as part of the Stage 4 assessment (see *Figure 4.7*).

Figure 4A.7: Landholdings for Example Sites PL3, PL6, PL10 and PL15



4A.9 Site Selection – Stage: Further Analysis

4A.9.1 Overview

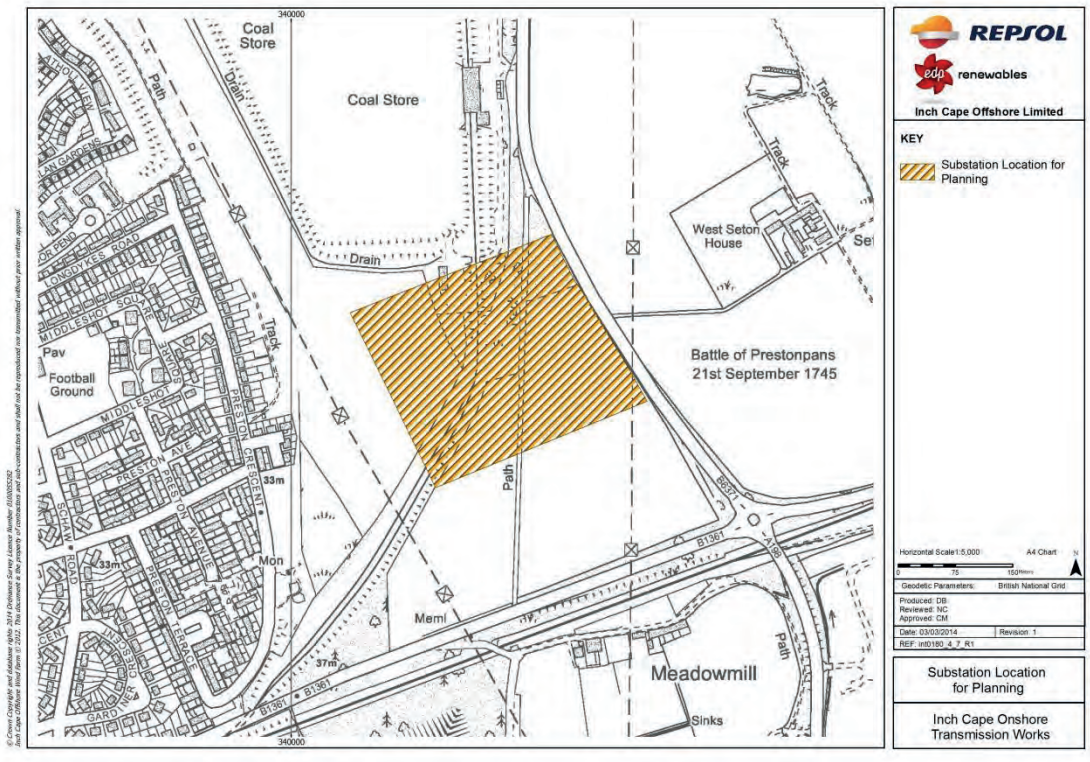
39 The Stage 4 assessment considered land ownership issues in more detail based on discussions with landowners or their agents. A more detailed review of technical issues associated with each site and associated costs of connecting these sites to the landfall locations at Cockenzie and Seton Sands and the grid connection point. A summary of the key findings associated with the Stage 4 assessment are presented on a site by site basis below.

4A.9.2 Site PL3 Analysis – Cockenzie

40 This site comprises land at and adjacent to the coal store, located to the south of Cockenzie Power Station and includes land identified as part of the Application Site (referred to in Figure 5.1 as the Indicative Onshore Substation Site). This site is within the ownership of a single landowner and ICOL initiated discussions with the landowner to investigate the potential feasibility of the site for the Onshore Substation.

41 During these discussions, the landowner explained to ICOL that land within and to the north of the coal store was not available. However, the landowner advised that land to the immediate south of the coal store was potentially available. Subsequent appraisal by ICOL focused on this area of PL3 and considered potential Onshore Export Cable Corridors to this site from the two potential landfall locations. This planning, environmental and technical appraisal together with landowner willingness to further explore matters, resulted in this part of PL3 being identified as a site offering significant potential for the Onshore Substation Site based on either landfall at Cockenzie or Seton Sands, although landfall at Cockenzie was considered preferable.

Figure 4A.8: Site Identified as Offering Significant Potential for the Onshore Substation Site



4A.9.3 Site PL6 Analysis - Seton Sands

42 Commercial discussions with landowners were initiated in 2012 however the potential substation site was sold in late 2012 and thereafter was not available. This option was therefore not progressed any further.

4A.9.4 Site PL10 Analysis - Blindwells

43 Early discussions with the owner of this site confirmed they were agreeable in principle to ICOL considering further the potential of this site for the Onshore Substation. A key consideration was how any Onshore Substation could be accommodated within the masterplan for the strategic housing site, both in terms of location and development programme.

44 Discussions were then held with representatives from East Lothian Council's Planning Department who raised concerns about the compatibility of locating the Onshore Substation within the strategic housing site. ICOL was subsequently advised that they were considering revisions to the scope of the masterplan for the site and were considering submitting a Proposal of Application Notice (PAN) in respect of these proposed revisions (now submitted under reference 13/00009/PAN). Having considered the respective development programmes and the potential for conflict with the emerging masterplan, ICOL decided not to progress interest on this site further.

45 As part of discussions regarding PL10, it became known that there may be scope to accommodate the Onshore Substation within land further to the east of the strategic release allocation, also within the control of the landowner. This site is discussed further in *Section 4.10*.

4A.9.5 Site PL15 Analysis - Prestonpans

46 Results from site investigation of the technical suitability of the principle landfall locations at Cockenzie and Seton Sands were positive for each location. Further consideration of PL15 was therefore not required as this option would only suit a landfall at Prestonpans and overall this site was considered less suitable than PL3, PL6 or PL10.

4A.9.6 Summary of Stage 4 Assessment

47 The Stage 4 site assessment exercise concluded that land to the south of the coal store as part of site PL3 was the preferred site for the Onshore Substation as it offered the following key advantages over the other identified sites:

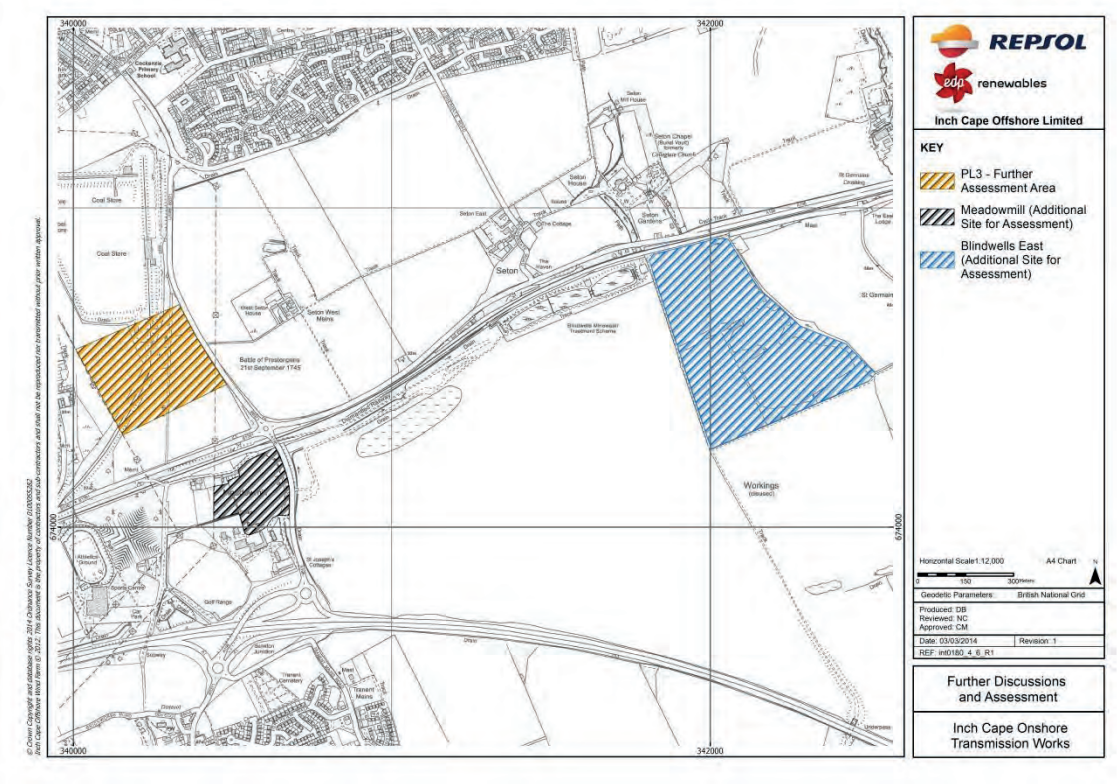
- Proximity to landfall option;
- Proximity to grid connection at Cockenzie;
- Landowner agreeable, in principle, to accommodating Onshore Substation on land (restricted to land to south of coal store);
- Favourable in relation to National and Local planning considerations;
- Potential to minimise disturbance from cable laying on local communities, and other receptors, by limiting distance Onshore Export Cables need to travel between landfall and Onshore Substation and back to grid connection to a relatively short distance (c 2.3 km);
- Ability to maintain existing access infrastructure from B6371 (subject to potential improvements);
- Land already partly disturbed/developed as part of railway link to coal store and historic use related to the coal store and power station;
- Presence of existing tree planting to east along B6371 offers well established screening;
- Potential for design refinement (including footprint definition) during Project detailed design and further ELC planning processes; and
- Significant electrical infrastructure already present in locality e.g. towers and overhead lines.

4A.9.7 Site Selection – Stage 5: Further Discussions and Assessment

48 Following identification of land at site PL3 as a potentially favourable location for the Onshore Substation, ICOL commenced detailed discussions with the landowner in 2013 regarding site acquisition. While these discussions were ongoing, two further potential Onshore Substation Sites were identified as potentially available in the land market and these were considered against the planning, environmental and technical criteria used in Stage 2 and 3 to ascertain

their potential suitability for an Onshore Substation. These sites are shown on *Figure 4.9* below are referred to as PL10 (Blindwells East - Further Assessment Area) and Meadowmill, as discussed below.

Figure 4.9: Further Discussion on PL3 and Assessment of Two New Sites



4A.9.8 Blindwells East

49 Blindwells East refers to land to the immediate east of the existing strategic housing land allocation at Blindwells and was brought to the attention of ICOL as part of the land discussions regarding site PL10 (see *Section 4.9*). This site is located within an area of designated open countryside to the south of the A198 and the east coast main line.

50 After careful consideration, ICOL decided not to progress with any further land searches in this area as, in general, the land exhibited many of the characteristics associated with site PL12, which had earlier been discounted from further consideration as part of the Stage 2 assessment, see Table 4.1. Furthermore, land at site PL3 had emerged as preferred potentially favourable site as part of the Stage 4 assessment and it was considered that site remained preferable to Blindwells East in terms of planning, environmental, economic and technical considerations.

4A.9.9 Meadowmill

51 In late 2013 ICOL was made aware that land at and including the former St. Joseph's School at Meadowill was being marketed. This site is located between the B1361 and the A1, and to the

immediate west of the A198. The area of land comprised in the sale extended to 6.53ha and included the former school site and associated buildings and an area of open ground to the north. Parts of the building complex are listed and the site contains housing. The site is in close proximity to the east coast main line.

52 Following a review of planning, environment, economic and technical criteria, ICOL decided not to progress interest in the site further as it was considered that the configuration and siting of the land available was not suitable to accommodate the Onshore Substation Site and associated infrastructure.

4A.10 Final Assessment of site PL3

53 Following further commercial discussions, an agreement (in principle) has been reached with the landowner of site PL3 for a potential option to acquire the site for the purpose of developing an Onshore Substation with associated rights to locate cables in a corridor reaching landfall within the landholding at Cockenzie. Based on this ICOL has proceeded to prepare an application for Planning Permission in Principle (including this ES) for the OnTW and Onshore Export Cables based on a landfall at Cockenzie which represents the preferred combination in terms of planning, environmental, economic and technical and land considerations.

References

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National Grid, 2006 Guidelines on Substation Siting and Design (The Horlock Rules)

East Lothian, 2008. East Lothian Local Development Plan 2008, available at http://www.eastlothian.gov.uk/downloads/download/317/the_adopted_east_lothian_local_plan_2008_text

Inch Cape Offshore Environmental Statement, Appendix 6B (ICOL, 2013) available at http://www.inchcapewind.com/files/Environmental_Statement_Structure/Chapter6/Appendix6B.pdf