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15 October 2012

Tidal Lagoon Swansea Bay Scoping Opinion

Dear Andy

Further to the submission of our GIS project boundary file on the 28th September 2012, we would be grateful if the Planning Inspectorate would provide a scoping opinion on the proposed tidal lagoon development in Swansea Bay. To facilitate the scoping process please find enclosed four paper copies of "*Proposed Tidal Lagoon Development in Swansea Bay, South Wales Environmental Impact Assessment Scoping Report*". In addition, as stated in your guidance, we have also provided the report in electronic format (38MB). We trust that the enclosed scoping document provides sufficient information for you to make an informed response.

Should you require any further information please do not hesitate to contact Gill Lock (gill.lock@tidallagoonpower.com).

Best wishes

Eva Bishop
Tidal Development Director

SCOPING OPINION

Proposed Tidal Lagoon Swansea Bay



November 2012



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The Planning
Inspectorate



EXECUTIVE SUMMARY

This is the Scoping Opinion (the Opinion) provided by the Secretary of State in respect of the content of the Environmental Statement for the proposed Tidal Lagoon Swansea Bay Development. The Development is a tidal energy scheme, grid connection and associated infrastructure.

This report sets out the Secretary of State's opinion on the basis of the information provided in Tidal Lagoon Swansea Bay Limited's report entitled 'Proposed Tidal Lagoon Development in Swansea Bay, South Wales: Environmental Impact Assessment Scoping Report' (October 2012). The Opinion can only reflect the proposals as currently described by the Applicant.

The Secretary of State has consulted on the Scoping Report and the responses received have been taken into account in adopting this Opinion. The Secretary of State is not satisfied that the topic areas identified in the Scoping Report encompass those matters identified in Schedule 4, Part 1, paragraph 19 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended).

The Scoping Report has not considered land quality, hydrology and flood risk, and vibration in the scope of the EIA. The Secretary of State considers that insufficient information has been provided at this stage to scope these issues out of the Environmental Statement (ES) and requires that full consideration is given to them in the ES. Further information on these issues is provided within Section 3 of this Opinion.

The Secretary of State draws attention both to the general points and those made in respect of each of the specialist topic areas in this Opinion. The main potential issues identified are:

- Description of the development;
- Impact on coastal processes;
- Marine water quality; and
- Impact on designated sites, ecology and ornithology.

Matters are not scoped out unless specifically addressed and justified by the Applicant, and confirmed as being scoped out by the Secretary of State.

The Secretary of State notes the potential need to carry out an assessment under the Habitats Regulations (Section 3.5)¹.

¹ The Conservation of Habitats and Species Regulations 2010 (as amended)



The Planning
Inspectorate

1.0 INTRODUCTION

Background

- 1.1 On 15 October 2012, the Secretary of State (SoS) received a Scoping Report submitted by Tidal Lagoon Swansea Bay Limited (the Applicant) under Regulation 8 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (SI 2263) (as amended) (the EIA Regulations) in order to request a scoping opinion for the proposed Tidal Lagoon Swansea Bay Development. This Scoping Opinion is made in response to this request and should be read in conjunction with the Applicant's Scoping Report.
- 1.2 In submitting the information included in their request for a scoping opinion, the Applicant is deemed to have notified the SoS under Regulation 6(1)(b) of the EIA Regulations that it proposes to provide an ES in respect of the proposed Tidal Lagoon Swansea Bay development. Therefore the proposed development is determined to be an EIA development in accordance with Regulation 4(2)(a) of the EIA Regulations.
- 1.3 The proposed development concerns energy generation. It falls within the description of a Schedule 2 development under the EIA Regulations as being an infrastructure project. An EIA is not mandatory for Schedule 2 development but depends upon the sensitivity of the receiving environment, the likelihood of significant environmental effects and the scale of the proposals.
- 1.4 Before adopting a scoping opinion the SoS must take into account:
- (a) the specific characteristics of the particular development;
 - (b) the specific characteristics of the development of the type concerned; and
 - (c) environmental features likely to be affected by the development'.
- (EIA Regulation 8 (9))*
- 1.5 This Opinion sets out what information the SoS considers should be included in the ES for the proposed development. The Opinion has taken account of:
- i the EIA Regulations
 - ii the nature and scale of the proposed development
 - iii the nature of the receiving environment, and
 - iv current best practice in the preparation of environmental statements.

- 1.6 The SoS has also taken account of the responses received from the statutory consultees (see Appendix 2 of this Opinion). The matters addressed by the Applicant have been carefully considered and use has been made of professional judgement and experience in order to adopt this Opinion. It should be noted that when it comes to consider the ES, the SoS will take account of relevant legislation and guidelines (as appropriate). The SoS will not be precluded from requiring additional information if it is considered necessary in connection with the ES submitted with that application when considering the application for a development consent order (DCO).
- 1.7 This Opinion should not be construed as implying that the SoS agrees with the information or comments provided by the Applicant in their request for an opinion from the SoS. In particular, comments from the SoS in this Opinion are without prejudice to any decision taken by the SoS (on submission of the application) that any development identified by the Applicant is necessarily to be treated as part of a nationally significant infrastructure project (NSIP), or associated development, or development that does not require development consent.
- 1.8 Regulation 8(3) of the EIA Regulations states that a request for a scoping opinion must include:
- (a) 'a plan sufficient to identify the land;
 - (b) a brief description of the nature and purpose of the development and of its possible effects on the environment; and
 - (c) such other information or representations as the person making the request may wish to provide or make'.

(EIA Regulation 8 (3))

- 1.9 The SoS considers that this has been provided in the Applicant's Scoping Report.

The Secretary of State's Consultation

- 1.10 The SoS has a duty under Regulation 8(6) of the EIA Regulations to consult widely before adopting a scoping opinion. A full list of the consultation bodies is provided at Appendix 1. The list has been compiled by the SoS under their duty to notify the consultees in accordance with Regulation 9(1)(a). The Applicant should note that whilst the SoS's list can inform their consultation, it should not be relied upon for that purpose.
- 1.11 The list of respondents who replied within the statutory timeframe and whose comments have been taken into account in the preparation of this Opinion is provided at Appendix 2 along with

copies of their comments, to which the Applicant should refer in undertaking the EIA.

- 1.12 The ES submitted by the Applicant should demonstrate consideration of the points raised by the consultation bodies. It is recommended that a table is provided in the ES summarising the scoping responses from the consultation bodies and how they are, or are not, addressed in the ES.
- 1.13 Any consultation responses received after the statutory deadline for receipt of comments will not be taken into account within this Opinion. Late responses will be forwarded to the Applicant and will be made available on the Planning Inspectorate's (PINS) website. The Applicant should also give due consideration to those comments in carrying out the EIA.

Structure of the Document

- 1.14 This Scoping Opinion is structured as follows:

Section 1 Introduction
Section 2 The proposed development
Section 3 EIA approach and topic areas
Section 4 Other information.

The Scoping Opinion is accompanied by the following Appendices:

Appendix 1 List of consultees
Appendix 2 Respondents to consultation and copies of replies
Appendix 3 Presentation of the environmental statement.

2.0 THE PROPOSED DEVELOPMENT

Introduction

2.1 The following is a summary of the information on the proposed development and its site and surroundings prepared by the Applicant and included in their Scoping Report. The information has not been verified and it has been assumed that the information provided reflects the existing knowledge of the proposed development and the potential receptors/resources.

The Applicant's Information

Overview of the Proposed Development

2.2 The proposed tidal power scheme would be located in Swansea Bay, South Wales. The development would have an installed capacity of between 250-350MW.

2.3 Section 2 of the Scoping Report has identified the following components of the proposed development:

- 9.5km seawall;
- hydro turbines;
- caissons;
- sluice gates and overhead gantries;
- electricity step up facilities;
- offshore and onshore cables;
- visitor centre building on the seawall;
- navigational lighting and safety warning systems;
- operation and control centre;
- onshore visitor facilities and access;
- parking provision and public transport pick up / drop off; and,
- a bridge link to the development.

2.4 The final grid connection route has not been defined, but a potential option described in the Scoping Report is a connection at the Baglan substation to the east of the site across the river Neath.

Description of the site and surroundings

The Application Site

- 2.5 The Tidal Lagoon Swansea Bay Development would be located in the central part of Swansea Bay, directly south of Swansea Docks, and to the south east of the City of Swansea, in South Wales. Swansea Bay is located towards the northwest end of the Bristol Channel. The onshore infrastructure would be located within Swansea, extending to the National Grid substation at Baglan, Neath.
- 2.6 The proposed development would lie partially within the Harbour Limits of the Port of Swansea, and the Limits of the Port of Neath. Swansea Marina and Swansea Barrage are also located within the Swansea Bay area.
- 2.7 The inner bay is generally shallow, with a wide sandy beach to the west. The tides in Swansea Bay occur twice daily. The mean tidal range at Swansea is 8.5m for springs and 4.1m for neap tides. Tidal current speeds range from 0.72m/s in the Outer Bristol Channel increasing to 2.42m/s in the Severn Estuary. Flow patterns run parallel to the shoreline and reverse between flood and ebb stages.
- 2.8 A number of outfalls to Swansea Bay are identified in the Scoping Report, including a main outfall for the Swansea Waste Water Treatment Works which is located within the Bay and which would discharge its effluent into the lagoon.
- 2.9 The proposed lagoon would connect to shore at either end, and the preferred location for landfall would be at Swansea Docks.

The Surrounding Area

- 2.10 Swansea Port is located directly to the north of the site. Swansea marina is located to the northwest of the site and abuts the SA1 development which extends west along the Bay.
- 2.11 The key transport route into Swansea is the A483 which runs along Fabian Way, connecting to the M4 motorway. The Swansea docks, where the onshore infrastructure would be located, is accessed from the A483.
- 2.12 Mumbles Head lies at the western end of Swansea Bay, and is a rocky headland with two small islands. The town of Port Talbot, where the main industrial activity in the area is centred, is located on the eastern end of the Bay, and has an enclosed tidal harbour with flat sandy beaches on either side.

- 2.13 Swansea Bay is important in terms of tourism, with over 4.1 million people visiting the area in 2008. The designated bathing beaches of Aberafan Sands and Swansea Bay are located within Swansea Bay. The development would be located on intertidal area which is not a designated bathing area.
- 2.14 The bay as a whole is designated under the Shellfish Waters Directive and areas are identified under the Shellfish Hygiene Directive as a Mussel Production Areas for harvesting Mussels and Oysters.
- 2.15 The Rivers Tawe, Neath, Afan and Clyne discharge into the Bay. There are two deep water dredged channels in the Bay extending outwards from Swansea and Port Talbot harbour into the middle and eastern areas of the Bay respectively. The tidal lagoon would be located between these two channels.
- 2.16 There are a number of areas designated for their landscape qualities located in the Swansea Bay area, including: the Gower AONB; the Historic landscapes of Margam Abbey and Mountain, Merthyr Mawr and Kenfig Margam Burrows; Historic Gardens and Parks including Clyne Castle, Singleton Abbey and Sketty Hall, Margam Park, Cwmdonkin Park, Brynmill Park, Penllergaer, Victoria Park and The Gnoll, and Clyne Valley Country Park.
- 2.17 Features of archaeological interest include a submerged petrified forest, stone and wooden fish traps and trackways identified in the intertidal foreshore of the Bay.
- 2.18 The Severn Estuary Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site is located 60km to the east of the development within the Bristol Channel and extends from Lavernock Point near Cardiff to Bridgewater Bay in Devon. The Crymlyn Bog SAC/RAMSAR is located onshore to the north of the site beyond the A483 (Fabian Way). The site is designated for its plant species, invertebrates, and supports summer populations of reed warblers and sedge warblers. The Kenfig SAC is located 11.5km from the site and is designated for its dune habitats.
- 2.19 The Blackpill Site of Special Scientific Interest (SSSI) is located 2.5km from the site on the western edge of Swansea Bay, and is an overwintering and passage site for a large number of waders including Sanderling, Ringed Plovers, Oystercatchers, Grey Plover, Bar-tailed Godwit, Knot and Dunlin. The Crymlyn Burrows SSSI is located on the eastern side of the Bay to the west of the mouth of the River Neath, 2km from the site, and is designated for its local plant species and invertebrates, and is used by small waders overwintering at Blackpill SSSI.
- 2.20 Within a wider 15km radius of the site there are further SSSI's including Eglwys Nunydd Reservoir SSSI, Kenfig Pool and Dunes

SSSI and NNR, Pwll Ddu Head and Bishopston Valley SSSI , Pennard Valley SSSI, Caswell Bay SSSI, Bracelet Bay SSSI, Langland Bay SSSI, and Minchin Hole SSSI.

Description of the Proposed Development

- 2.21 The tidal lagoon would be created by constructing a 9.5km seawall within Swansea Bay, enclosing 9.3km² of intertidal sea area. The seawall would be constructed with a sand and gravel core using geotextile tubing to encase sediment dredged from within the lagoon. The sand and gravel core would then be overlaid with rubble and rock armour, and would have a mass concrete crest. The height of the seawall would be such that at Mean High Water Springs, 3m of the landward face of the wall would be visible and at Mean Low Water Springs, 12m of the landward face of the wall would be visible.
- 2.22 A series of hydro turbines would be set in a single concrete turbine caisson section on the seaward site of the seawall at 5-7m below Lowest Astronomical Datum. The caissons would be built in a line at one of the deepest points along the wall, measuring approximately 400m in length and would have a width of 30m. A sluice gate with an overhead gantry used to control the water levels would sit approximately 8m above the sea wall. Control facilities would be required close to the turbine caissons.
- 2.23 It is currently anticipated that the electricity generated by the turbines would be stepped-up to 132 kv prior to being exported by cable to the shore, and then routed to the National Grid substation at Baglan.
- 2.24 The development would require the construction of operation and control facilities onshore. Whilst a location is not confirmed, it is anticipated this would be close to the landfall of the eastern seawall, and would comprise:
- maintenance workshop and spares store;
 - parking and garages;
 - boat storage;
 - control room;
 - office accommodation;
 - welfare facilities; and,
 - slipway/jetty access point.
- 2.25 Various visitor facilities are proposed both onshore and offshore on the seawall. The Scoping Report states that exact details of these are to be determined during the EIA process.

- 2.26 The description of the development does not define what is integral to the scheme and what elements the applicant would be seeking separate consent for under the Town and Country Planning Act regime.

Proposed Access

- 2.27 The Scoping Report does not identify how materials and components of the redevelopment would be delivered to the site. Paragraph 2.4.3 states that rock armour for the lagoon walls could be imported by road, rail or sea although no decision has been made.
- 2.28 The Scoping Report does not identify how the site would be accessed.
- 2.29 A bridge link to the development would be constructed at the western end of the docks, linking into the SA1 development and the city of Swansea. No details of the type, function, location or infrastructure requirements of the bridge have been included within the Scoping Report.

Construction

- 2.30 The construction period is anticipated to last for 24 months.
- 2.31 The seawall would be constructed with a sand and gravel core using geotextile tubing to encase sediment dredged from within the lagoon. The sand and gravel core would then be overlaid with rubble and rock armour imported to the site.
- 2.32 The construction of the turbine caissons would involve the installation of a cofferdam structure and the removal of soft material in the seabed to create a solid base for the foundation. The concrete caissons would be either constructed in dry docks onshore and transported offshore, or built directly in the cofferdam.
- 2.33 The reinforced turbine houses have been designed as pre-fabricated models and piling may be required during the installation of the turbine houses. No description of the proposed piling method is provided within the Scoping Report.
- 2.34 A temporary onshore construction compound would be required for the caissons and turbine houses. It is anticipated that this will be located on brownfield land in Swansea Dock, but no location is confirmed in the scoping report.

Operation and Maintenance

- 2.35 It is anticipated that the tidal lagoon would be operated from the onshore facilities by site operatives. Remote surveillance will be installed in order to monitor the offshore components.
- 2.36 The Scoping Report outlines a regime of inspection and maintenance works that would likely occur during the lifetime of the development, and the anticipated frequency of such events.

Decommissioning

- 2.37 The lagoon would have a design life of 50 years but could operate for up to 100 years subject to maintenance and the replacement of parts.
- 2.38 Following the end of the design life, alternative options for the lagoon would be considered, including a continuation of the power generation, use for marine recreational facilities, and the removal of the whole or part of the structure.
- 2.39 The Scoping Report states that an overview of the decommissioning approach will be provided in the ES, and the environmental effects considered.

The Secretary of State's Comments

Description of the Application Site and Surrounding Area

- 2.40 The description of the application site and the surrounding area provided in the preceding section was based on the Applicants Scoping Report and the figures provided. However, the figures are of poor quality, with no referencing of places names. The Applicant should ensure that the description of the site and the surrounding area is clear in the ES, and refers to detailed figures.
- 2.41 The location of the scheme should be clearly identified on scaled maps with north points, illustrating the location of the development at a local and wider scale. The area of land within the DCO boundary, including onshore and offshore land take should be clearly defined within the ES.
- 2.42 The Scoping Report identifies a number of sensitive receptors that lie within Swansea Bay and the wider area. Where the Scoping Report describes features in Swansea Bay, the locations of these features in relation to the proposed development are not always clear, for example the Scoping Report references local place names, rivers, Swansea WWTW, dredged channels etc, but does not clearly show these on a plan. The ES should clearly describe the application site and the surrounding area. Where the ES identifies or refers to designated sites, environmental constraints

and receptors, or other geographical or man made features these should be clearly identified and labelled in the plans submitted as part of the ES, and where appropriate the location of proposed development should also be shown on the same plans.

- 2.43 The Scoping Report does not identify the location of settlements within the site boundary or in the surrounding area. It is acknowledged that the site is located within the city of Swansea, but it would be useful for other settlements, and those areas of Swansea potentially affected, to be identified within the ES. Sensitive residential and sensitive receptors should also be identified and carefully assessed within the ES.
- 2.44 The designated historic landscapes within the area surrounding the site are identified, but no other heritage assets such as listed buildings, Scheduled Ancient Monuments and Conservation Areas, or any other sites or finds of archaeological interest derived from the Sites and Monuments Record (SMR) are mentioned within the Scoping Report. These features should be identified within the description of the site and the surrounding area.
- 2.45 When referring to distances within the text, it will be useful to indicate the direction as well as the distance, and any potential environmental pathways that connect receptors with the proposed development site. In addition, it should be clear whether distances are taken from the central point of the area within the DCO boundary, or from the nearest part of the boundary.

Description of the Proposed Development

- 2.46 The Scoping Report provides a brief description of the development and information on some of the components. It is understood that at this stage in the evolution of the scheme, the description of the proposals and the location of the various elements may not be confirmed.
- 2.47 The Scoping Report identifies that the DCO will provide for the generating station itself with its component parts, and that these will include the electrical grid connection works. It also states that onshore elements of the project which are not categorised as 'associated development' will be applied for under the Town and Country Planning Act 1990 to the relevant local authority. The Scoping Report does not clearly identify for all elements whether they are integral to the scheme and therefore components of the proposed DCO application.
- 2.48 The ES should clearly identify the location of the proposed NSIP, including any related development which should be clearly distinguished from NSIP development. Within the DCO application, the Applicant must be able to clearly justify the elements of the development it considers integral to the NSIP and those which are

related or ancillary development for which consent would be sought under the Town and Country Planning Act 1990.

- 2.49 The SoS welcomes comments in the Scoping Report which indicate that regardless of whether elements form part of the DCO they will be considered within the ES as part of an integrated approach to environmental assessment. The Applicant should ensure that all elements are fully assessed as part of the EIA, including related development which will need to be assessed as part of the EIA as cumulative development. The ES should give equal prominence to any development which is related to the proposed development to ensure that all the impacts of the proposal are assessed (see further comments in Appendix 3 of this Opinion).
- 2.50 The SoS recommends that the ES should include a clear description of all aspects of the proposed development, at the construction, operation and decommissioning stages, including:
- land use requirements, including the area of the offshore elements, and the land required for construction purposes;
 - site preparation;
 - construction processes and methods;
 - construction and operational requirements including the main characteristics of the production process and the nature and quantity of materials used;
 - transport routes; by road, rail or water; and,
 - maintenance activities including any potential environmental or navigation impacts.
- 2.51 The ES should include detailed plans illustrating the layout of the scheme and annotations to show where various components of the scheme would be located.
- 2.52 The Scoping Report states that the electricity generated by the turbines would be stepped up to 132kV prior to exportation to shore. However, no description of the methods or infrastructure needed to facilitate the 'stepping up' have been provided within the Report. These features should be clearly described and illustrated within the ES.
- 2.53 At this stage the type of turbine likely to be used has not been identified in the Scoping Report. The ES should identify the type of turbine that would be used. Where assumptions are made in the assessment of environmental effects, for example in relation to the level of noise and vibration emitted by turbines, then a clear source or justification for these assumptions should be provided in the ES, and these should represent a worst case. The locations of turbines should be clearly identified in the ES.

- 2.54 Further detail of the trash screens that would be used to prevent debris passing through the turbines should be provided within the ES. It is important that the impact of the trash screens on the marine ecology is assessed within the ES.
- 2.55 The Scoping Report uses technical terms to describe elements of the proposed development. The ES should clearly explain all technical terminology, and should clearly identify the main characteristics for the processes for each element of the proposed scheme.
- 2.56 The Scoping Report uses a variety of units of measurement to describe the proposed development. For example, heights are compared against Mean High Water Springs (MHWS), Mean Low Water Springs (MLWS), Chart Datum and Lowest Astronomical Tide (LAT). The ES should clearly explain units of measurement and their application in the assessment, and where appropriate the ES should apply units consistently, or provide equivalent measurements.
- 2.57 The ES should identify types and quantities of waste to be removed from site and of materials required for construction, including materials sourced within the footprint of the proposed development. This information should inform the calculation of construction vehicle movements for the purpose of the assessment of potential effects on transport, and potential associated impacts of traffic related noise and air quality. The environmental effects of all wastes to be processed and removed from the site should be addressed. The ES will need to identify and describe the control processes and mitigation procedures for storing and transporting waste off site.

Flexibility

- 2.58 The SoS notes within the Scoping Report that the detailed design of the tidal power project is still being developed and scheme design has not been finalised. The SoS welcomes that the proposals are to be firmed up during the pre-application stages and encourages the description to be as accurate and firm as possible so that its environmental impact can be more accurately assessed. The ES should demonstrate how the EIA has informed the final design.

Grid Connection

- 2.59 The SoS notes that the grid connection works are proposed to be included within the DCO (paragraph 1.2.4). A potential route for the grid connection is illustrated in Figure 2.3 of the Scoping Report. The Scoping Report does not give a description of the route proposed for the cable, the nature of the land affected, or a

description of the cabling laying processes. However, it appears that the route may include a river crossing.

- 2.60 The SoS notes the Applicants intention to confirm and assess the final option for the grid connection within the EIA. The SoS considers however that potential impacts resulting from alternative connection points/cable routes should also be considered to demonstrate why the final option has been chosen.
- 2.61 The cable corridor should be clearly identified within the ES and should be broad enough to encompass access points, construction works, temporary compounds and any potential mitigation works, to enable the comprehensive assessment of effects.

Proposed Access

- 2.62 The Scoping Report does not identify how access to the site will be gained or describe the potential route options. The access arrangements for the construction, operation and decommissioning of the development will need to be considered within the ES. The Scoping Report does not state how the components of the scheme and materials will be delivered to the site although it is acknowledged that various options are currently being considered. It is essential that the construction access options are carefully considered to minimise disruption in the local area. The selected option should be modelled into the transport, noise and vibration and air quality assessments.
- 2.63 No details of the location or infrastructure requirements of the bridge link mentioned in paragraph 2.3.10 are provided within the Scoping Report. It is not clear whether this link would be for vehicular access, pedestrians or cyclists. It is not clear whether this link would be part of the DCO or located within the boundary defined in Appendix 1.1. The ES should provide clarification on these aspects of the proposed development.
- 2.64 The access arrangements for vehicles and pedestrians on the sea wall should be described, taking account of variations in weather conditions and relevant health and safety issues. Consideration should be given as to how emergency service vehicles, including the RNLI would be able to access the site and the surrounding area during the operation and maintenance of the scheme.

Construction

- 2.65 The ES should include a construction programme and phasing plan to identify the stages of the construction that would occur in the 24 months timescale proposed.
- 2.66 The SoS considers that the following information on construction should be provided within the ES:

- siting of onshore and offshore construction compounds;
- construction methods and activities, including plant or machinery that would be required, and any methods for the installation of the lagoon structure such as piling methods, foundations and fill materials;
- lighting equipment/requirements;
- navigational aids;
- number of workers required during construction, if they are full/part time, if shift work is required, potential for night time working;
- number, movements and parking of construction and staff vehicles; and,
- description of construction hours, and the potential for night time working.

2.67 This information should be provided within a construction programme, which should identify how the development would be phased during the construction period of 24 months. It would also be useful for an outline Construction Environmental Management Plan (CEMP) to be appended to the ES providing details of specific mitigation measures required to reduce the construction related impacts.

2.68 The Scoping Report provides limited detail relating to the material resources and dredging requirements within the construction phase. The ES must include an assessment of the types and volumes of material, and where these will be sourced from. It is stated in paragraph 2.4.4 of the Scoping Report that some soft material may require removal to lay the foundations of the sea wall. The ES should outline the volumes of this material and assess options and environmental impacts of its disposal.

2.69 The ES should carefully consider the environmental implications of extracting material from the sea bed and transporting material from elsewhere.

2.70 Please also refer to the comments made with regard to construction access in the preceding section.

Operation and Maintenance

2.71 The Scoping Report gives an overview of the operation and maintenance requirements of the scheme. The environmental impacts of the approach and requirements of the operational phase should be included within the EIA.

Decommissioning

- 2.72 The SoS welcomes the consideration of decommissioning within the EIA. This should include the process and methods of decommissioning for the various options mentioned within the Scoping Report.
- 2.73 The identification and environmental assessment of construction processes will help to inform the potential impacts that could occur during the decommissioning of the scheme. However, it is considered that further modelling could be required to determine the extent of the impacts as a result of the decommissioning, particularly in relation to coastal processes.

3.0 EIA APPROACH AND TOPIC AREAS

Introduction

- 3.1 This section contains the SoS's specific comments on the approach to the ES and topic areas as set out in the Scoping Report. General advice on the presentation of an ES is provided at Appendix 3 of this Scoping Opinion and should be read in conjunction with this Section.
- 3.2 Applicants are advised that the scope of the DCO application should be clearly addressed and assessed consistently within the ES.

ES Approach

- 3.3 The information provided in the Scoping Report sets out the proposed approach to the preparation of the ES. Whilst early engagement on the scope of the ES is to be welcomed, the SoS notes that the level of information provided at this stage is not always sufficient to allow for detailed comments from either the SoS or the consultees.
- 3.4 The SoS would suggest that the Applicant ensures that appropriate consultation is undertaken with the relevant consultees in order to agree wherever possible the timing and relevance of survey work as well as the methodologies to be used. The SoS notes and welcomes the intention to finalise the scope of investigations in conjunction with ongoing stakeholder liaison and consultation with the relevant regulatory authorities and their advisors.
- 3.5 The SoS recommends that the physical scope of the study areas should be identified under all the environmental topics and should be sufficiently robust in order to undertake the assessment. The extent of the study areas should be on the basis of recognised professional guidance, whenever such guidance is available. The study areas should also be agreed with the relevant consultees and, where this is not possible, this should be stated clearly in the ES and a reasoned justification given. The scope should also cover the breadth of the topic area and the temporal scope, and these aspects should be described and justified.

Matters to be Scoped Out

- 3.6 The applicant has not provided a list of topics within the Scoping Report that it proposes to Scope out of the ES. However, information in the main text of the Scoping Report indicates an intention to scope out the following element:

- Impacts on Registered Historic Landscapes – due to the distance from the sites identified in paragraph 4.15.3.4 to the lagoon, and the low lying nature of the structure.
- 3.7 In addition, the following topics have not been considered in the Scoping Report or listed for inclusion in the ES:
- land quality;
 - hydrology and flood risk; and,
 - vibration.
- 3.8 Matters are not scoped out unless specifically addressed and justified by the Applicant, and confirmed as being scoped out by the SoS.
- 3.9 The SoS does not agree to scope impact on Registered Historic Landscapes out of the ES because there insufficient evidence has been presented to support this proposal.
- 3.10 The ES identifies a long history of mining and manufacturing within the Swansea Bay. The ES should identify the locations of previous operations that could potentially be a source of contaminants. Land quality is scoped into the ES because the onshore infrastructure, including the landward connections of the seawall and the grid connection corridor require disturbance to the land and therefore an assessment of land quality and suitability is required. The onshore operation and maintenance facilities and visitor facilities would be located on brownfield land formerly used by Swansea Port. The potential for land contamination should be addressed within this chapter. The scope of the assessment should be agreed with the prescribed consultees.
- 3.11 Hydrology and flood risk is scoped into the ES because the extent of the proposed works has the potential to impact upon hydrology and hydrogeology within the local area. The assessment should consider how the proposed works could affect drainage in terms of ground water, and surface run off. There is no indication to suggest that a Flood Consequence Assessment (FCA) would be submitted as part of the DCO application. The applicant should provide an FCA, the scope of which should be agreed with EAW and other prescribed consultees. The FCA should include consideration of flood risk in relation to both the lagoon and onshore elements of the scheme. The ES should also assess the potential for impacts to ground water quality, including the potential for saline intrusion resulting from the development, which may affect terrestrial sites of nature conservation interest, including Crymlyn Bog SAC. The applicant's attention is drawn to the response received from CCW in this respect.

- 3.12 There is no reference to an assessment of vibration effects in the Scoping Report. The ES should clearly identify any potential sources of vibration during construction (including piling if required) and operation, provide vibration levels and assess the likely effects on both human and ecological receptors.
- 3.13 In order to demonstrate that topics have not simply been overlooked, where topics are scoped out prior to submission of the DCO application, the ES should still explain the reasoning and justify the approach taken.

ES Structure

- 3.14 Chapter 3 of the Scoping Report provides an overview of the structure of the ES.
- 3.15 Paragraph 3.1.4 lists the environmental topics which will be included within the ES:
- coastal, sediment transport and contamination;
 - marine water quality assessment;
 - intertidal and subtidal benthic ecology;
 - fish, including recreational and commercial fisheries;
 - marine mammals;
 - coastal birds;
 - navigation (commercial and recreational) and marine transport assessment;
 - terrestrial ecology
 - seascape and visual assessment;
 - marine and terrestrial archaeology and historic landscape;
 - marine and terrestrial noise assessment;
 - onshore transport and noise assessment;
 - economy, tourism and recreation; and,
 - information for a Habitats Regulation Assessment.
- 3.16 The SoS advises that information to inform a Habitats Regulation Assessment (HRA) forms a separate report. Further guidance on the format of this report is located in Section 4.

General Comments

- 3.17 The SoS notes that whilst the Scoping Report states that comments received through consultation with key stakeholders have been incorporated into the proposed scope of the EIA, a number of issues identified by key stakeholders appear not to

have been addressed adequately within the Scoping Report. Furthermore, a number of surveys have already been undertaken and the extent to which the scope of these surveys has been agreed with key EIA consultees is not clear. It is noted that a number of prescribed consultees are keen to undertake further dialogue with the applicant in order to discuss the issues raised in their responses to the scoping consultation. The SoS would encourage a good dialogue during the pre-application process between prescribed consultees and the applicant on EIA related matters. It is advised that upon the submission of a DCO application the ES should make clear where the scope, methodologies, findings of the assessment, and mitigation have been agreed with consultees, with evidence provided in support. The applicant should consider the possible application of Statements of Common Ground with key consultees to ensure that there is clarity on areas of agreement and disagreement at the point of submission of a DCO application.

- 3.18 Section 3.2 describes the general approach that will be taken to assessing environmental impacts and refers to the identification of the value of the receptor and the magnitude of the impact in order to predict the significance of the impact. Paragraph 3.2.1 states that the general principles described in Section 3.2 will be employed to determine the significance of the impacts, and these will be developed and explained for each topic area.
- 3.19 Section 3.4 describes the study areas that will be used for the various topics within the ES. The study area should be clearly defined and justified for each topic. It is advised that this information is included within the individual chapters to avoid the need to cross refer to a separate section to note the study. It would be useful for the study areas to be illustrated on plans and identify the locations of the key receptors linked to that topic, to ensure the study area is broad enough to encompass all issues. The study area for the development should be agreed with the relevant stakeholders.
- 3.20 The baseline year, construction year/s, operational future assessment year, and year of decommissioning are not included within the ES. It is important that these dates are established in the ES and are used consistently throughout the various assessments.
- 3.21 Section 3.3 of the Scoping Report sets out the approach that will be taken to assessing cumulative effects. It is noted within paragraph 3.3.1 that it is intended to consider cumulative effects within each topic chapter. The structure of each topic chapter is reported in paragraph 3.1.5 but cumulative impacts are not mentioned as a specific subsection. The applicant should clarify whether the cumulative impacts will be considered within the main

text, or whether a separate subsection would be required to provide a detailed assessment of cumulative impacts.

- 3.22 Table 3.4 outlines the development that is currently intended to form part of the cumulative assessment. It is necessary that this list is revised and agreed with the relevant stakeholders through the consultation process where appropriate to ensure all relevant future development is incorporated into the cumulative impact assessment. The SoS draws the applicant's attention to the suggestions made by the prescribed consultees in relation to potential cumulative impacts.
- 3.23 The Coal Authority have informed that a license has been issued for underground coal gasification within Swansea Bay to Clean Coal Energy Ltd. The implications of this on the proposed development should be considered within the cumulative impact assessment.

Topic Areas

Coastal Processes, Sediment Transport and Contamination (see Scoping Report Section 4.6)

- 3.24 The applicant's intention is to carry out detailing modelling of the impacts of the development on coastal processes. The SoS welcomes agreement of the model requirements with the relevant prescribed bodies. CCW have provided initial details of the type and extent of modelling that would be appropriate for this development (see Appendix 2). The applicant should clearly identify any assumptions and uncertainties within the modelling approach and evaluate the degree of confidence in the findings of the assessment.
- 3.25 The SoS welcomes that impacts resulting from climate change will be reflected in the assessment, and suggests that the long term effects of coastal erosion are also included within the assessment.
- 3.26 The Scoping Report refers to a geophysical survey that was carried out and that will inform the assessment of coastal process, water quality, benthic ecology and marine archaeology (see paragraph 4.6.3.13 of the Scoping Report). The scope and methodology of the survey has not been provided within the ES and it is unclear whether this has been agreed with the prescribed consultees. This information should be provided within the ES and the SoS advises that that the applicant seeks agreement with the prescribed consultees on the approach taken.
- 3.27 The Scoping Report recognises that changes in sediment transport as a result of the development could have a detrimental impact on the Crymlyn Burrows dunes. The ES should also consider the

impact upon the Baglan Dunes, and the Aberavon and Margam Burrows dune system.

- 3.28 Neath Port Authority has raised concerns over sediment build up on the seawall. The assessment should consider the extent to which this may occur and identify what mitigation, for example in the form of maintenance and the removal of sediment build up could be required to reduce the effects.
- 3.29 The beaches within Swansea Bay and the wider area to the west and east are a recreational asset and therefore the assessment should consider how the development would impact upon beaches and address concerns over the potential loss of sand on the beaches resulting from the development.
- 3.30 It is noted in the Scoping Report that the wave regime in Swansea is such that a large amount of wave energy and large waves are often present at the entrance to Swansea Dock. The assessment should consider the health and safety impacts of the development and provide justification to demonstrate the engineering potential of the seawall to withstand the predicted forces, and what mitigation measures would be in place to protect users of the wall during storm weather conditions. The ES should also consider the impact of the development upon existing coastal defences.
- 3.31 It is acknowledged that the assessment of impacts on coastal processes during construction will be established once further details of the construction methodology and programme are developed (paragraph 4.6.5.9).
- 3.32 Should the assessment identify any requirements for mitigation and/or monitoring, this should be agreed with the relevant stakeholders.
- 3.33 The section does not make reference to the potential impacts on coastal processes during decommissioning. The assessment should consider the impacts for all of the decommissioning options referenced in Section 2.6. Careful consideration should be given to assessing how the potential removal of the tidal barrage would affect coastal processes, particularly as a result of sediment build up.
- 3.34 The SoS is pleased to note that the interrelationships with marine ecology, terrestrial ecology, marine water quality, navigation and recreation will be considered within the ES.
- 3.35 Please refer to the comments made by EAW and CCW in relation to the assessment of coastal processes (Appendix 2).

Marine Water Quality Assessment (see Scoping Report Section 4.7)

- 3.36 It is noted within the Scoping Report that the 2D modelling software proposed to assess marine quality has been agreed with Welsh Water. EAW suggest that a 3D model would be more appropriate for a development of this scale (see comments in Appendix 2). It is therefore recommended that the applicant liaise with both parties to develop a robust methodology that provides the necessary data to allow for a comprehensive assessment of the impacts on marine water quality.
- 3.37 The SoS draws the applicant's attention to the Mussel Farm at Queens Dock, and suggests this would be an appropriate monitoring point in addition to those listed in paragraph 4.7.4.2 of the Scoping Report. (See comment from EAW at Appendix 2.)
- 3.38 It is not proposed to model effects on marine water quality during the construction period because it is anticipated that the effects caused by the tidal lagoon in operation will be the worse case scenario and will therefore the impacts caused during the construction period can be assessed using the data gained from modelling the development in operation (paragraph 4.7.3.6). The ES should still consider the potential for increased turbidity, and accidents in the form of spills of hazardous waste, chemicals, oils etc., and appropriate mitigation measures, during the construction period.
- 3.39 The assessment should also consider how the onshore infrastructure and the offshore visitors centre close to marine waters could affect marine water quality. The assessment should consider how waste would be managed, including the disposal of foul sewerage.
- 3.40 It is important that the presence of the lagoon does not affect the discharges that are currently released into Swansea Bay. In addition to the outfalls mentioned within the Scoping Report, assessment should also consider the Baglan Pumping Station long sea outfall, and the outfall at Mumbles Head.
- 3.41 It is noted in the Scoping Report that the outfall from the Swansea Waste Water Treatment Works would discharge into the lagoon (paragraph 2.2.7 of the ES). The impacts of enclosing the WWTW outfall in the lagoon should be carefully assessed within the ES. The applicant is advised to engage closely with Welsh Water and the Environment Agency Wales on this matter. The applicant is advised to note the concerns raised by EAW (see Appendix 2), and ensure that the ES provides a robust assessment of the potential issues.

- 3.42 The SoS advises that reference should be made to other regimes (such as pollution prevention from the EA). On-going monitoring should also be addressed and agreed with the relevant authorities to ensure that any mitigation measures are effective.
- 3.43 The interrelationships between the marine water quality assessment and fishing, marine ecology and recreation should be fully considered in the ES.

Intertidal and Subtidal Benthic Ecology (see Scoping Report Section 4.8)

- 3.44 The figures provided within this section of the Scoping Report are too small to be easily read and do not help to improve the understanding of the habitats in the Swansea Bay area. It is recommended that within the ES, figures are provided to an appropriate size and scale to ensure they can contribute to the understanding of the scheme.
- 3.45 It is stated within paragraph 4.8.2.3 of the Scoping Report that it is intended to undertake a characterisation benthic sampling programme to inform the EIA, and then undertake a further baseline benthic survey once consents have been gained. It is essential that the baseline is fully established within the EIA process to ensure that impact prediction is based upon a comprehensive and accurate baseline. Whilst it may be necessary to conduct checking surveys prior to the construction of the development, there is concern that obtaining the full extent of the baseline post consent is not an appropriate approach and a robust baseline should be fully established during the EIA process. In this regard, the SoS draws attention to the comments made by CCW and EAW concerning surveys required, which are contained at Appendix 2.
- 3.46 Paragraph 4.8.3.2 states that a new rocky intertidal habitat would be created from the construction of the seawall and associated rock armour. The ES should consider what species this may attract to this area, and the impacts of such colonisations on benthic ecology, particularly non-mobile species which would be attracted to the seawall. The ES should consider the impacts of creating a seawall barrier within the marine environment and the impacts this will have on the movement of species within the intertidal and subtidal zones. The ES should consider how any activity in the lagoon area such as maintenance works, and recreational uses if applicable, could affect benthic ecology.
- 3.47 The SoS welcomes the applicant's intention to carry out a risk assessment to consider how the project may spread or bring in non-native invasive species into the lagoon area. Mitigation to prevent the spread of invasive species should be defined in a mitigation/management plan. Any mitigation measures proposed

to reduce identified impacts should be agreed with the prescribed consultees.

- 3.48 The development would involve dredging works during the construction and maintenance of the development and therefore the ES should assess the impact upon such species by suspended sediments and the smothering effect.
- 3.49 The comments raised above should be read in conjunction with those made by CCW, EAW and Neath Port Talbot Borough Council in relation to the assessment of potential impacts on intertidal and subtidal benthic ecology, which are contained at Appendix 2.

Fish, including Recreational and Commercial Fisheries (see Scoping Report Section 4.9)

- 3.50 The assessment of commercial and recreational fishing should consider if the lagoon development would result in a loss of the fishing ground and how this would affect the fishing industry, for example through the displacement of fishing fleets creating greater pressure on the fishing industry elsewhere. The assessment should also consider how the development could affect the future expansion of the fishing industry within Swansea, such as the revival of oyster fishing. Impacts on resident and migratory fish species should be considered.
- 3.51 The disturbance of fish should be assessed within the ES, and should consider the effects of noise, vibration and light. The assessment will be dependent on the final construction methods chosen, for example the impacts of piling.
- 3.52 The assessment should consider the impact of creating a sea wall on fish, including entrapment in the lagoon, collision risk with the turbines and the trash screens.
- 3.53 It is noted that from paragraph 4.9.3.5 that the current intention is to build the export cables into the lagoon wall to prevent the need for separate cables. As such, it is not proposed to carry out an assessment of EMF effects on elasmobranchs. However, the Scoping Report does note that should this change during the design process, an assessment of these aspects would be carried out. Should this situation occur, the assessment of the cable corridor would need to be modelled into all relevant sections within the ES.
- 3.54 The information gained from the marine water quality assessment should be used to inform the assessment on fish and the fisheries industry.

Marine Mammals (see Scoping Report Section 4.10)

- 3.55 It is stated within the Scoping Report that no site specific studies will be carried out as there are sufficient existing data sources and consultation could provide data updates (paragraph 4.10.2.1). Of the data sources listed described within the Scoping Report, the most up to date source goes back to 2005. Whilst older data sources can compliment a baseline study, it is important that current data is provided to establish an accurate baseline. The SoS advises that in addition to the information gained from the existing data sources, updated mammal surveys are required to fully characterise the baseline. The survey works should be agreed in consultation with CCW.
- 3.56 Information from EAW indicates that there are records to show that Grey Seals and Harbour Porpoise are more commonly found in Swansea Bay than reported in the Scoping Report. The applicant should ensure that the impacts on these species are carefully assessed within the ES (see comments in Appendix 2).
- 3.57 The section does not mention the assessment of cumulative effects on marine mammals. The ES should assess how the tidal lagoon with other development could cumulatively impact upon marine mammals during construction, operation and decommissioning.

Coastal Birds (see Scoping Report Section 4.11)

- 3.58 It is not clear whether this section will be limited to the assessment of coast line ornithology, or whether onshore ornithology potentially affected by the onshore infrastructure including the grid connection corridor will also be discussed in this section. If the assessment on all birds will be considered in 'Coastal Birds' it may be appropriate to rename this section 'Ornithology' to provide clarity on the matter.
- 3.59 It is noted that the baseline data would be developed from existing sources detailed in section 4.11.2, combined with an over wintering survey covering Blackpill SSSI to the west of the site and Crymlyn Burrows SSSI at Neath Estuary to the east of the site which was carried out between October 2011 and March 2012. The Scoping Report does not identify a requirement for breeding bird surveys. The need for and the scope of any overwintering and / or breeding bird surveys should be agreed with CCW and the relevant local planning authorities. It is also advisable that the prescribed consultees are consulted to confirm the suitability of the existing data sources that are intended to form part of the baseline within the ES.
- 3.60 The figures provided in the coastal birds methodology (Appendix 4.1) are not clear and therefore it is difficult to identify the study

area of the development. EAW suggest that a zone of influence is established to aid the identification of the extent of the indirect effects on coastal birds in consultation with the prescribed consultees (see comments Appendix 2).

- 3.61 The section on coastal birds mentions the Crymlyn Bog SAC/Ramsar site located inland to the north of the site beyond the A483. It is stated that this site is important for its summer populations of reed warblers and sedge warblers. The ES needs to consider potential impacts on these birds that may result from the development.
- 3.62 Paragraph 4.11.1.1 of the Scoping Report described the bird species present within Swansea Bay that are protected through European legislation. Due to the importance of the species, the ES would need to carefully consider the effects of the development on these species and clearly assess the potential impacts.
- 3.63 The SoS welcomes the proposal for the assessment of coastal processes to feed into the assessment on coastal birds.

Navigation and Marine Transport Assessment (see Scoping Report Section 4.12)

- 3.64 The ES should define the dredging requirements of Swansea Port and Neath Port along the dredged channels to maintain a safe passage for vessels. This information should inform the assessment in respect of coastal processes, sediment transport and contamination.
- 3.65 The Neath Port Authority has raised concerns that the changing coastal processes could result in a larger amount of sediment drifting into the dredged channels resulting in a safety hazard for vessels using the channel. The ES should include an assessment of the effects of sediment changes to navigation and safety.
- 3.66 The SoS notes that a Navigation Risk Assessment will be carried out as part of the EIA. Mitigation measures proposed to address impacts on navigation and safety should be detailed in this assessment. It is advisable that this is developed with the prescribed consultees.
- 3.67 The ES should identify whether the area of the Bay that would be lost as a result of the development is currently used by recreational vessels, and the impacts of displacing such vessels elsewhere in the Bay.
- 3.68 Paragraph 4.12.3.8 states that navigational lighting may be required on the seawall as a navigational safety aid. It is advisable that the lighting requirements are investigated with Trinity House

at an early stage to ensure that these can be modelled into the seascape and visual assessment.

- 3.69 It is noted that the impact on the pilotage of both commercial and recreational vessels, for example from the changing local wave conditions and changes to sediment levels on the seabed will be informed by the coastal process modelling (paragraph 4.12.3.4-6). The interrelationship between these chapters must therefore tie in.

Terrestrial Ecology (see Scoping Report Section 4.13)

- 3.70 The preliminary screening of SSSI and NNR Sites (Table 4.7 of the Scoping Report) should be agreed in consultation with CCW, and follow on from relevant assessment work. At this stage it is considered premature to screen out any designated sites from the environmental impact assessment. The SoS notes that BAP species should also be identified and assessed within the ES.
- 3.71 It is stated in paragraph 4.13.2.2 of the Scoping Report that a desk based assessment and an extended phase 1 walkover survey will be carried out. The methodology for the walkover survey is not stated in the Scoping Report and it is advised that this should be agreed with CCW. The results of the survey work should be discussed with the prescribed consultees to determine whether further species specific survey work will be required. The SoS recommends that surveys should be thorough, up to date and take account of other development proposed in the vicinity.
- 3.72 It is noted that the final cable route has not been determined and therefore the scope of the terrestrial ecology assessment remains broad until the final route has been determined. The applicant's attention is drawn to the conservation interest of the verge along Fabian Way (A483), and note that the disturbance of this habitat should be taken into consideration when planning the onshore cable route.
- 3.73 It is noted from the Scoping Report that the grid connection cable would be required to cross the River Neath. It is important that the ES assesses the impact of these works on the ecology in the River and further downstream, particularly at the mouth of the River Neath where Crymlyn Burrows SSSI is situated.
- 3.74 The Scoping Report states that the EIA would consider the direct and indirect impacts on habitats within and adjacent to the proposed construction compound area, cable route and substation. This scope should be extended to include all of the proposed development within DCO boundary of the proposal, including the operation and maintenance facilities, onshore visitor facilities etc.
- 3.75 The impacts on terrestrial ecology should be considered during both construction, operation and decommissioning. The

assessment should take account of impacts on noise, vibration and air quality including dust, and cross reference should be made to these specialist reports.

- 3.76 The SoS recommends that the proposals should address fully the needs of protecting and enhancing biodiversity, for example in the form of an ecological management plan. The necessity for any mitigation should be agreed with the relevant stakeholders and should be clearly detailed in the ES and secured within the DCO.
- 3.77 Where landscaping is proposed for the onshore works, an assessment of the impact of on ecology should be considered.

Seascape and Visual Assessment (see Scoping Report Section 4.14)

- 3.78 Figure 4.7 of the Scoping Report which illustrates the Preliminary ZTV is not clear and therefore it is difficult to identify the potential visibility of the development from varying distances. As previously stated, all figures included within the ES should be legible, clearly annotated, and to an appropriate scale.
- 3.79 It is noted that a 15km radius will be used in the visual assessment. The study area should be agreed with the prescribed consultees and justified in the ES.
- 3.80 Within the methodology it stated that a maximum of 15 viewpoints will be included within the assessment. It is useful for a wide range of viewpoints to be included within the ES to inform the assessment and therefore a more flexible approach to viewpoint selection should employed to ensure more than 15 viewpoints are included if it is deemed necessary. The SoS notes the applicant's intention to agree the final viewpoints in consultation with the prescribed consultees. In particular, the SoS considers that it will be appropriate for views from the seaward side of the development to be included within the assessment.
- 3.81 It is anticipated that the onshore infrastructure, including the visitors' facilities, access, operation and maintenance facilities etc, would require landscape and screening works to reduce visual effects. The applicant may find it appropriate to provide this information in the form of a landscape strategy/management plan.
- 3.82 The applicants attention is drawn the comments made by CCW in relation to the assessment of seascape, landscape and visual impacts.

Marine and Terrestrial Archaeology and the Historic Seascape Assessment (see Scoping Report Section 4.15)

- 3.83 It is noted within the Scoping Report that a geophysical survey was carried out on the marine area of the development, but it is not clear whether the survey work extended to the area covered by the onshore development or the cable corridor. The ES would need to demonstrate that an archaeological assessment of the onshore area had been carried out in accordance with an approach agreed with the prescribed consultees.
- 3.84 The Scoping Report does not mention or identify any conservation areas, listed buildings and structures or any other sites or finds of archaeological interest derived from the Sites and Monuments Record (SMR). It is not indicated whether these elements would be assessed within the ES. The SoS advises that the applicant should identify a study area for assessing the impact on heritage assets using the ZTV as an initial tool. The ES should identify these heritage assets and consider if the proposed development will have an impact on the setting of the heritage assets. The importance of the heritage assets should be defined to allow an assessment of the significance of impacts to be carried out.
- 3.85 The applicant should consider what potential mitigation and monitoring works may be required as part of the development, subject to the conclusions developed from the survey work.

Marine and Terrestrial Noise Assessment (see Scoping Report Section 4.16)

- 3.86 The Scoping Report states that baseline noise levels will vary depending on geographic location, time of day and season and that surveys will be carried out during appropriate conditions. Appropriate conditions are not defined. Baseline noise measurements should ensure that a worst case change in noise levels is assessed, and 'appropriate conditions' for undertaking survey work should be agreed with the relevant local authorities. Noise data should be referred to the prescribed consultees to ensure that it is fit for purpose.
- 3.87 The Scoping Report states that seasonal variations will be considered with respect to differences in sensitivity relating to tourist activity. When determining baseline noise levels and assessing impacts, consideration should also be given to seasonal variations in respect of ecological receptors, for example periods during which species are present and periods during which particular species are likely to be most sensitive to noise and vibration effects.
- 3.88 The Scoping Report states that noise monitoring would be undertaken at up to four locations, and that these will be

representative of sensitive receptors. However, it does not provide evidence to demonstrate that four monitoring points would adequately represent sensitive receptors or that this has been agreed with the prescribed consultees, and therefore the SoS is unable to agree to the number of noise monitoring points at this time. The applicant is advised to identify noise and vibration receptors, and agree both terrestrial and underwater monitoring locations with the local authorities and other relevant consultees.

- 3.89 The Scoping Report references a number of advice and guidance documents relating to the process for defining acceptable noise levels. The criteria for assessing the significance of noise impacts, for both terrestrial and underwater impacts, should be agreed with the prescribed consultees in order to ensure that the appropriate guidance and advice is followed.
- 3.90 The Scoping Report states that noise emissions for construction activities will be assessed against baseline conditions and other guidance, although the guidance is not identified. All guidance and standards should be clearly referenced within the ES.
- 3.91 The Scoping Report refers to construction works occurring outside normal working hours. Where such works are required, estimated durations and timings for each element of works should be provided and assessed within the ES.
- 3.92 Paragraph 4.16.3.3 indicates that the assessment will consider the additional HGV movements generated as a result of the rock armouring importation. The assessment of noise effects should consider all construction vehicle movements including all HGV and construction worker vehicle movements, and boat and rail movements if selected as an appropriate means for transporting materials.
- 3.93 The SoS welcomes the presentation of noise impacts on a noise map. The distance to, sensitivity and number of receptors likely to be affected should also be identified in the ES.
- 3.94 The SoS welcomes the commitment to applying the results of the noise assessment to the ecology and ornithological assessments. This should include consideration both noise and vibration impacts resulting from construction activities such as piling. At present the applicant has only identified the need to consider effects of noise on the Blackpill SSSI. The SoS recommends that the ecological receptors considered in the assessment should be determined by defining the area likely to be impacted by noise and through the noise maps. In assessing potential effects of noise, species sensitivities should be clearly set out in the ES.
- 3.95 The Scoping Report does not indicate the basis for noise levels for various machinery and processes that will inform the noise

assessment. The ES should provide a list of construction machinery and processes that are likely to give rise to noise emissions, indicating the basis for the predicted noise levels provided.

- 3.96 The Scoping Report does not make reference to any assessment of terrestrial noise impacts during the operational phase. The ES should identify any processes or machinery that may emit noise during operation, providing predicted noise emissions. Where such emissions could affect sensitive receptors, an assessment of potential noise impacts should be undertaken.
- 3.97 The Scoping Report states that an assessment of underwater noise effects from operational turbines will be undertaken. The ES should clearly indicate how the predicted underwater noise effects are determined, for example from manufacturers' specifications and measurements at existing installations. It should also demonstrate that no other noise impacts could arise from other parts of the machinery either alone or in combination with the turbine noise.
- 3.98 As with all topics, cumulative effects should be considered. In the case of noise and vibration these should include any activities that are ongoing within the Bay. The applicant will need to clearly distinguish activities occurring at the time of noise monitoring so that activities that are not occurring at that time can be taken into account in the assessment.
- 3.99 No reference is made within the Scoping Report to monitoring. Where necessary the applicant should identify the need for any monitoring to ensure that noise and vibration limits are met.

Onshore Transport Assessment and Air Quality (see Scoping Report Section 4.17)

- 3.100 The Scoping Report identifies that the likely access route for construction traffic is via the eastern gateway to Swansea Docks, which has a direct link to Fabian Way. The likely route to the strategic road network should be confirmed in the ES and the spatial scope of the transport assessment should be agreed with the relevant Highway Authorities.
- 3.101 The calculation of construction vehicle movements on which the assessment will be based, should take into account the amounts of waste likely to be generated and materials likely to be required.
- 3.102 The Scoping Report states that the transport assessment will rely on existing traffic data obtained from the City and County of Swansea (CCS). The applicant is advised to agree that the data available is adequate and that there is no need for further traffic surveys with CCS.

- 3.103 The Scoping Report indicates that vehicle movements associated with construction will be assessed and that movements associated with operation and maintenance are likely to be minimal. Nonetheless the ES should indicate the likely number of vehicle movements during operation and maintenance.
- 3.104 The Scoping Report indicates that transport consideration to address future tourist opportunities will be reviewed. The Scoping Report indicates that the proposed development could include parking provision, public transport pick-up/drop-off and landscaped circulation space suitable for 70-100,000 visitors per year. If the scheme is likely to include such facilities then the transport assessment should consider the potential effect on the road network and on public transport facilities either as part of the EIA of the DCO scheme, if these elements are included within the DCO, or as part of the cumulative assessment. Where effects on the road network are identified then these should be taken into account in the assessment of air quality and noise effects.
- 3.105 The Transport Assessment should identify the need for any movements of abnormal loads and the need for any works to highways to accommodate such movements.

Economy, Tourism and Recreation (see Scoping Report Section 4.18)

- 3.106 The Scoping Report states that the potential impacts associated with landscape, marine craft usage, navigation, noise and recreational fishing will be addressed within the relevant chapter and included within this assessment. In addition to the findings of these chapters being included, the chapter should also identify any secondary effects on tourism and the economy that result identified in the aforementioned chapters. Where possible the effects on tourism or the economy should be quantified.
- 3.107 In addition to the abovementioned chapters, the tourism chapter should assess any effect on local and regional beaches identified in the coastal and sediment transport assessment.

Habitats Regulation Assessment (see Scoping Report Section 4.20)

- 3.108 The SoS notes the information given in Section 4.20 relating the HRA. The applicant should refer to the general comments made in Section 4 of the Scoping Opinion on HRA, and note the comments made by the prescribed consultees in relation to HRA (Appendix 2). The SoS cannot agree on the scope of the HRA until adequate supporting evidence is provided and agreement with the statutory nature conservation bodies (SNCBs) has been confirmed.

4.0 OTHER INFORMATION

- 4.1 This section does not form part of the SoS's opinion as to the information to be provided in the environmental statement. However, it does respond to other issues that the SoS has identified which may help to inform the preparation of the application for the DCO.

Habitats Regulations Assessment (HRA)

- 4.2 The SoS notes that European sites may be located close to the proposed development. It is the Applicant's responsibility to provide sufficient information to the Competent Authority (CA) to enable them to carry out a HRA if required. The Applicant should note that the CA is the SoS.
- 4.3 The Applicant's attention is drawn to The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) (The APFP Regulations) and the need to include information identifying European sites to which the Habitats Regulations applies or any Ramsar site or potential SPA which may be affected by a proposal. The submitted information should be sufficient for the competent authority to make an appropriate assessment (AA) of the implications for the site if required by Regulation 61(1) of the Habitats Regulations.
- 4.4 The report to be submitted under Regulation 5(2)(g) of the APFP Regulations with the application must deal with two issues: the first is to enable a formal assessment by the CA of whether there is a likely significant effect; and the second, should it be required, is to enable the carrying out of an AA by the CA.
- 4.5 When considering aspects of the environment likely to be affected by the proposed development; including flora, fauna, soil, water, air and the inter-relationship between these, consideration should be given to the designated sites in the vicinity of the proposed development.
- 4.6 Further information with regard to the HRA process is contained within Planning Inspectorate's Advice Note 10 (October 2012, Version 3) available on the National Infrastructure Planning's website.

Sites of Special Scientific Interest (SSSIs)

- 4.7 The SoS notes that a number of SSSIs are located close to or within the proposed development. Where there may be potential impacts on the SSSIs, the SoS has duties under sections 28(G) and 28(I) of the Wildlife and Countryside Act 1981 (as amended) (the W&C Act). These are set out below for information.

- 4.8 Under s28(G), the SoS has a general duty ‘... to take reasonable steps, consistent with the proper exercise of the authority’s functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest’.
- 4.9 Under s28(I), the SoS must notify the relevant nature conservation body (NCB), CCW in this case, before authorising the carrying out of operations likely to damage the special interest features of a SSSI. Under these circumstances 28 days must elapse before deciding whether to grant consent, and the SoS must take account of any advice received from the NCB, including advice on attaching conditions to the consent. The NCB will be notified during the examination period.
- 4.10 If applicants consider it likely that notification may be necessary under s28(I), they are advised to resolve any issues with the NCB before the DCO application is submitted to the SoS. If, following assessment by applicants, it is considered that operations affecting the SSSI will not lead to damage of the special interest features, applicants should make this clear in the ES. The application documents submitted in accordance with Regulation 5(2)(I) could also provide this information. Applicants should seek to agree with NE the DCO requirements which will provide protection for the SSSI before the DCO application is submitted.

European Protected Species (EPS)

- 4.11 The Applicant should also be aware that the decision maker under the Planning Act 2008 (PA 2008) has, as the CA, a duty to engage with the Habitats Directive.
- 4.12 The SoS considers that there is potential for the presence of EPS within the study area for the proposed development. Where a potential risk to an EPS is identified and before making a decision to grant development consent the CA must, amongst other things, address the derogation tests in Regulation 53 of the Habitats Regulations. Therefore the Applicant may wish to provide information which will assist the decision maker to meet this duty. Where required the Applicant should, in consultation with the Welsh Government, agree appropriate requirements to secure necessary mitigation.
- 4.13 If the Applicant has concluded (in consultation with the Welsh Government) that an EPS licence is required the ExA will need to understand whether there is any impediment to the licence being granted. It would assist the examination if the Applicant could provide with the application confirmation from the Welsh Government whether they intend to issue the licence in due course.

Health Impact Assessment

- 4.14 The SoS considers that it is a matter for the Applicant to decide whether or not to submit a stand-alone Health Impact Assessment (HIA). However, the Applicant should have regard to the responses received from the relevant consultees regarding health, and in particular to the comments from the Health and Safety Executive in relation to electrical safety issues (see Appendix 2).
- 4.15 The methodology for the HIA, if prepared, should be agreed with the relevant statutory consultees and take into account mitigation measures for acute risks.

Other regulatory regimes

- 4.16 The SoS recommends that the Applicant should state clearly what regulatory areas are addressed in the ES and that the Applicant should ensure that all relevant authorisations, licences, permits and consents that are necessary to enable operations to proceed are described in the ES. Also it should be clear that any likely significant effects of the proposed development which may be regulated by other statutory regimes have been properly taken into account in the ES.
- 4.17 It will not necessarily follow that the granting of consent under one regime will ensure consent under another regime. For those consents not capable of being included in an application for consent under the PA 2008, the SoS will require a level of assurance or comfort from the relevant regulatory authorities that the proposal is acceptable and likely to be approved, before they make a recommendation or decision on an application. The Applicant is encouraged to make early contact with other regulators. Information from the Applicant about progress in obtaining other permits, licences or consents, including any confirmation that there is no obvious reason why these will not subsequently be granted, will be helpful in supporting an application for development consent to the SoS.

Transboundary Impacts

- 4.18 Regulation 24 of the EIA Regulations, which *inter alia* require the SoS to publicise a DCO application if the SoS is of the view that the proposal is likely to have significant effects on the environment of another EEA state and where relevant to consult with the EEA state affected. The SoS considers that where Regulation 24 applies, this is likely to have implications for the examination of a DCO application.
- 4.19 The Scoping Report does not make reference to potential transboundary impacts. The SoS recommends that the Applicant

should provide to the SoS as soon as possible any available information about potential significant trans-boundary effects and identify the affected state(s). In order to ensure the efficient and effective examination of applications within the statutory timetable under Section 98 of the Planning Act, it is important that this information is made available at the earliest opportunity to facilitate timely consultations, if required, with other EEA States in accordance with Regulation 24.

- 4.20 If potential transboundary impacts are identified, the ES will also need to address this matter in each topic area and summarise the position on trans-boundary effects of the proposed development, taking into account inter-relationships between any impacts in each topic area.

APPENDIX 1

List of Consultees

APPENDIX 1

LIST OF BODIES FORMALLY CONSULTED DURING THE SCOPING EXERCISE

CONSULTEE	ORGANISATION
The Welsh Ministers	The Welsh Government
The Health and Safety Executive	Health and Safety Executive
The relevant Strategic Health Authority	Public Health Wales - Mid & West Wales Region Abertawe Bro Morgannwg University Health Board
The relevant fire and rescue authority	Mid and West Wales Fire and Rescue Service
The relevant police authority	South Wales Police Authority
The relevant Parish Council	Coedffranc Community Council Briton Ferry Town Council Dyffryn Clydach Community Council Neath Town Council Pelenna Community Council
The Environment Agency	The Environment Agency
The Equality and Human Rights Commission	Equality and Human Rights Commission
The Commission for Sustainable Development (Wales)	Office of Commissioner for Sustainable Futures
Royal Commission On Ancient and Historical Monuments Of Wales	Royal Commission On Ancient and Historical Monuments Of Wales
The Countryside Council for Wales	The Countryside Council for Wales
The Joint Nature Conservation Committee	Joint Nature Conservation Committee
The Maritime and Coastguard Agency	Maritime and Coastguard Agency
WAG (Welsh Waters)	Welsh Government
The Marine Management	The Marine Management Organisation

CONSULTEE	ORGANISATION
Organisation	
The Scottish Fisheries Protection Agency	Marine Scotland
The Civil Aviation Authority	Civil Aviation Authority
The Relevant Highways Authority	Swansea County Council Neath Port Talbot County Borough Council
The Rail Passengers Council	Passenger Focus
The Disabled Persons Transport Advisory Committee	DPTAC
The Coal Authority	The Coal Authority
The Office of Rail Regulation	Office of Rail Regulation
Approved Operator	Network Rail Infrastructure Ltd Network Rail (CTRL) Ltd
The Gas and Electricity Markets Authority	OFGEM
The Water Services Regulation Authority	OFWAT
The Relevant Waste Regulation Authority	Environment Agency
The British Waterways Board	The Canal and River Trust
Trinity House	Trinity House
The Health Protection Agency	The Health Protection Agency
The Relevant Local Resilience Forum	South Wales Local Resilience Forum
Relevant Statutory Undertakers	
Health Bodies (s.16 of the Acquisition of Land Act (ALA) 1981)	
Local Health Board	Public Health Wales - Mid & West Wales Region Abertawe Bro Morgannwg University Health Board

CONSULTEE	ORGANISATION
Ambulance Trusts	Welsh Ambulance Services NHS Trust
Relevant Statutory Undertakers (s.8 ALA 1981)	
Railways	Network Rail Infrastructure Ltd Network Rail (CTRL) Ltd BRB Residuary Limited
Water Transport	The Canal and River Trust Company of Proprietors of the Neath Canal Navigation
Port	Associated British Ports
Harbour	Neath Harbour Commissioners
Lighthouse	Trinity House
Civil Aviation Authority	Civil Aviation Authority
Licence Holder (Chapter 1 Of Part 1 Of Transport Act 2000)	NATS en Route plc
Universal Service Provider	Royal Mail Group
Relevant Environment Agency	Environment Agency
Water and Sewage Undertakers	Dwr Cymru (Welsh Water)
Public Gas Transporters	British Gas Pipelines Ltd Energetics Gas Ltd ES Pipelines Ltd ESP Connections Ltd ESP Networks Ltd ESP Pipelines Ltd Fulcrum Pipelines Limited GTC Pipelines Limited Independent Pipelines Limited National Grid Gas Plc (NTS) National Grid Gas Plc (RDN) Quadrant Pipelines Limited SSE Pipelines Ltd The Gas Transportation Company Limited Utility Grid Installations Limited Wales and West Utilities Limited
Electricity Generators With CPO Powers	Baglan Operations Limited
Electricity Distributors having CPO	Energetics Electricity Limited ESP Electricity Limited Independent Power Networks Limited

CONSULTEE	ORGANISATION
Powers	The Electricity Network Company Limited Western Power Distribution (South Wales) Plc
Electricity Transmitters with CPO Powers	National Grid Electricity Transmission plc
The Crown Estate Commissioners	The Crown Estate
The Forestry Commission (Wales)	The Forestry Commission
Local Authorities (s.43)	
Brecon Beacons National Park Authority Swansea County Council Neath Port Talbot County Borough Council Carmarthenshire County Council Powys County Council Rhondda Cy non Taf County Borough Council Bridgend County Borough Council	
Non Prescribed Consultees	
Welsh Language Commissioner South West Wales Integrated Transport Consortium (SWWitch) Cadw Ministry of Defence Royal National Lifeboat Institution	

Note: the Prescribed Consultees have been consulted in accordance with the Planning Inspectorate's Advice Note 3 'Consultation and notification undertaken by the Planning Inspectorate' (April 2012).

APPENDIX 2

Respondents to Consultation and Copies of Replies

APPENDIX 2

LIST OF BODIES WHO REPLIED BY THE STATUTORY DEADLINE

Bridgend Borough Council
Civil Aviation Authority
Coal Authority
Countryside Council for Wales
Crown Estate
Environment Agency Wales
ES Pipelines
Health and Safety Executive
Health Protection Agency
National Grid
National Rail
NATS
Neath Canal Navigation
Neath Port Authority
Neath Port Talbot Borough Council
Ofwat
SWWITCH

