



Tidal Lagoon Swansea Bay

Town & Country Planning Act 1990 (as amended)

275 kV Cable Route – Planning Application

Non-Technical Summary

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1 Introduction

1.1 Purpose and scope

- 1.1.1 This Non-Technical Summary (NTS) has been prepared by Tidal Lagoon (Swansea Bay) plc (TLSB) to support a planning application under the Town and Country Planning Act 1990 (TCPA) which will seek a permission for the 275kV cable route (the 275kV Project) associated with the development of Tidal Lagoon Swansea Bay.
- 1.1.2 This document has been produced to provide an updated NTS relevant to the construction of the 275kV cable route alone. This NTS has had regard to the TLSB Environmental Statement (ES) (TLSB, 2014) (which provides an assessment of the wider TLSB Project) and cross-refers to the relevant chapters from that ES (See Section 3). The ES reports on the full findings of the Environmental Impact Assessment (EIA), which assesses the potential effects of the TLSB Project as a whole (including the electricity cable) on the local and wider environment, and includes measures to reduce effects and provide benefits.
- 1.1.3 As part of this application, TLSB has also prepared an ES addendum that provides details of the likely environmental impacts that are specific to the 275kV cable route alone. The assessment provided is based on the environmental information and surveys presented in the TLSB ES (TLSB, 2014). This NTS also has had consideration to the information provided within that addendum.
- 1.1.4 This NTS, the ES and ES Addendum must be read together. Their purpose, in this instance, is to inform the decision maker(s) in determining a TCPA planning application for the installation of an underground electricity cable element of the 275kV Project.

1.2 The 275kV Project

- 1.2.1 TLSB will be the world's first purpose built tidal energy lagoon. The generating station will have an installed capacity of 320 Mega Watts (MW) and will enclose part of Swansea Bay, from the eastern side of the River Tawe to the eastern edge of the new Swansea University Bay-Campus.
- 1.2.2 TLSB made an application for development consent to the Planning Inspectorate on 7 February 2014 for a DCO. Examination of the application closed on 10 December 2014 and development consent was granted by the Secretary of State (SoS) on 9 June 2015.
- 1.2.3 A number of elements were excluded from the DCO which included the provision of the 275kV cable route from the Western Landfall of the development to the Baglan Bay National Grid substation. A separate TCPA permission is therefore being sought for the 275kV electrical grid connection works. This updated NTS forms part of that TCPA application.

- 1.2.4 The 275kV high voltage cable and associated trenching works will run alongside the access road of Queens Dock, along Fabian Way, through the Crymlyn Burrows before crossing underneath the Neath river to connect to the National Grid Transmission System via the Baglan Bay substation. The cable route corridor is illustrated in the Site Location Plan provided as part of this application.
- 1.2.5 The works associated with this planning application form a critical part of the wider TLSB Project which comprises the construction, operation and maintenance of a tidal lagoon generating station, located in Swansea Bay, South Wales. A summary of the wider TLSB Project is provided in Section 2 of this NTS.

1.3 Other relevant application documents

- 1.3.1 A number of documents have been provided as part of this TCPA application for the 275kV cable route. This NTS should be read in conjunction with those application documents. Key documents relevant to the NTS are summarised below.
- TLSB ES (2014);
 - TLSB 275kV ES Addendum (specific to the 275kV cable route application);
 - TLSB 275kV Construction Environmental Management Plan (CEMP) (specific to the 275kV cable route application); and
 - TLSB Ground Contamination Report (specific to the 275kV cable route application).

2 The TLSB Project

2.1 Introduction to the TLSB Project

- 2.1.1 TLSB is proposing to construct and operate a tidal energy lagoon, located in Swansea Bay, South Wales (Figure 2.1). The red line boundary of the TLSB Project, encompassing all the elements proposed, and the maximum extent of land over which powers are sought, is also shown in Figure 2.1. The tidal lagoon will generate renewable energy in the form of electricity using the large tidal range (the difference between high and low water) which is a distinguishing feature of the Bay. The Lagoon will have an installed capacity of 320 Mega Watts (MW), generating 400GWh net annual output. This is enough electricity for approximately 121,000 homes: more than Swansea's annual domestic electricity use (109,000 households); c.70% of Swansea Bay's annual domestic electricity use (Swansea, Neath & Port Talbot, 173,000 households); or c.9% of Wales' annual domestic electricity use (based on 1,369,000 households).
- 2.1.2 In addition to generating electricity, the TLSB Project aims to provide visitor facilities and other amenities including art, education, mariculture and sporting/recreational facilities. The seawall is expected to be open to the public during daylight hours for walking, running, cycling, fishing etc, though access will be controlled in extreme weather.
- 2.1.3 An integral part of the TLSB Project is the provision of an enclosed water sports venue capable of providing a safe body of water for local, regional, national and international events. The new rock armour of the Lagoon seawall, which will extend some distance offshore, will provide good opportunities for habitat creation both above and below the water level. In addition, opportunities will be available for both able-bodied and disabled recreational fishermen, with the provision of safe and formal fishing locations, as well as informal opportunities for walkers, runners and cyclists.
- 2.1.4 The TLSB Project is entirely privately funded. The development phase is funded by private individuals and green entrepreneurs, as well as a public share offer held in June 2013. The construction phase will be funded by major institutional investors and a further public share offer.

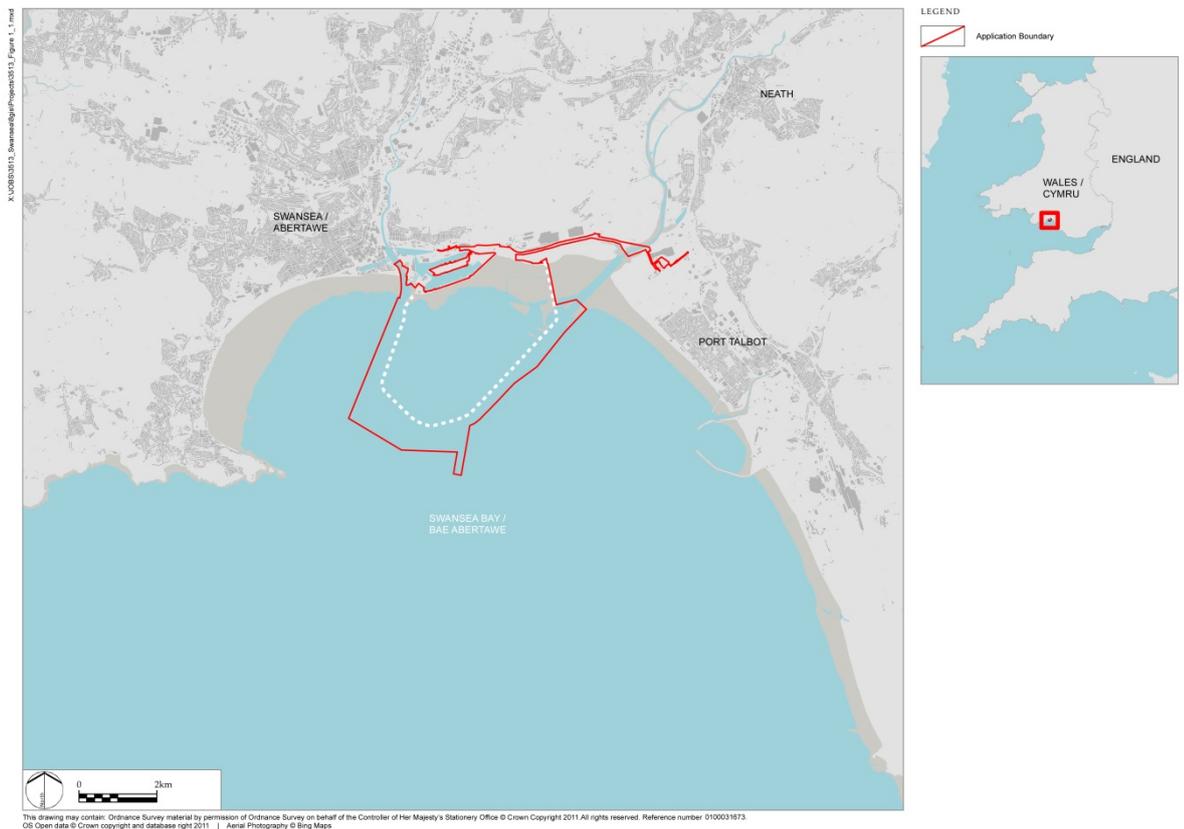


Figure 2.1 Location of the proposed Tidal Lagoon

2.2 Overview of the TLSB Project

- 2.2.1 The TLSB Project is situated at Swansea Port, approximately 2.2km southeast of Swansea city centre. The TLSB Project straddles the administrative areas of the City and County of Swansea Council (CCSC) and Neath Port Talbot County Borough Council (NPTCBC). The main onshore development lies within the Port area, immediately south of Fabian Way (A483) which is the main trunk road from Junction 42 of the M4 into Swansea.
- 2.2.2 The onshore development area provides an indication of where the structures associated with the TLSB Project will be located, with the grid connection route highlighted in yellow. Immediately west of the site, adjacent to the boundary, is the mouth of the River Tawe and to the east of the site, is the River Neath.
- 2.2.3 The Lagoon will enclose part of Swansea Bay, from the eastern side of the River Tawe (western landfall) to the eastern edge of the new Swansea University Bay Campus (SUBC - previously known as the Science and Innovation Campus, and currently under construction) (eastern landfall). The seawalls impounding the Lagoon will extend approximately 1.5km directly offshore from SUBC, adjacent to Crymlyn Burrows Site of Special Scientific Interest (SSSI). The seawalls will then extend in a southwest direction along the western boundary of the training wall of the River Neath Channel. A turbine and sluice gate housing structure will be located in the south west of the Lagoon, at an oblique angle to the dredged

channel of the River Tawe. The seawall will then extend north towards Swansea Port, close to the mouth of the River Tawe, parallel but offset by 100m from the dredged channel for the River Tawe and Port of Swansea. In total, this will form an approximately 9.5km-long, U-shaped, seawall which will impound approximately 11.5km² of the seabed, foreshore and intertidal area of Swansea Bay.

- 2.2.4 The electricity generated by the TLSB Project will be exported to the National Electricity Transmission System (NETS) at the existing Baglan Bay substation by means of underground cables. The cables will be laid in the seawall and then alongside existing roads/paths, crossing the River Neath, and on to the substation. To cross the River Neath, the cable will either be laid in existing disused pipes, or in ducts formed by directional drilling. This application is seeing TCPA consent for the elements of the cable route show in the Site Location Plan provided with this application.

2.3 Site selection and option appraisal

- 2.3.1 The TLSB Project aims to achieve a balance between optimum tidal energy output, at an appropriate scale, and maximising opportunities for additional benefits to the local area. As noted above, Swansea Bay has a naturally high tidal range which makes it suitable for this form of renewable energy. It also has a gently-sloping intertidal area suitable for construction of the Lagoon seawall. Finally, the location adjacent to Swansea Port provides great opportunities for regeneration and connectivity, meaning that all of these key ambitions are achievable.
- 2.3.2 Over the last two years, approximately 20 lagoon design layouts and multiple turbine configurations have been considered in TLSB's efforts to find the best solution with regard to energy generation, environmental impact and cost viability. The onshore elements have also undergone significant development such that the overall Masterplan encompasses O&M requirements (necessary for the operation of the energy generation facility) as well as related recreational opportunities and environmental mitigation and enhancement.

3 Environmental Summary

3.1 Introduction

- 3.1.1 The following Sections provides a summary of each of the environmental topics presented in the TLSB ES (2014). Each section includes a summary of the potential environmental impacts that are relevant to the construction of the 275kV cable route Project.
- 3.1.2 Where relevant, details of measure to manage and mitigate potential impacts are also provided. For full details on such measures, refer to the draft 275kV CEMP provided with this application.

3.2 Coastal processes, sediment transport and contamination

- 3.2.1 The proposed electricity cable does not have any likely significant environmental impacts upon coastal processes, sediment transportation and contamination.

3.3 Marine Water quality

- 3.3.1 The proposed electricity cable does not have any likely significant environmental impacts upon Marine Water Quality.

3.4 Intertidal and subtidal benthic ecology

- 3.4.1 The proposed electricity cable does not have any likely significant environmental impacts upon intertidal and subtidal benthic ecology.

3.5 Fish including recreational and commercial fisheries

- 3.5.1 The full assessment of the likely potential impact of the cable on fish is contained within Chapter 9 of the TLSBES. Please refer to this Chapter for full details on this impact.
- 3.5.2 It is proposed to transmit electricity from the turbines to the substation at Baglan Bay along three single core XLPE cables (800 mm²). Electromagnetic fields (EMF) are generated from the cable which may have the potential to disrupt electrosensitive and magnetosensitive fish (e.g. elasmobranchs, lamprey, eel and salmon). The main potential impact of any electric field would be disruption to the sensory feeding cues of some benthic species, whilst magnetic fields may impact upon fish fauna by impairing the orientation and migratory behaviour of diadromous fish.
- 3.5.3 Elasmobranchs are recognised as being very sensitive to EMF stimuli. However, the location of the planned cable where it crosses the River Neath is too far upstream to be of concern for this subclass of fish.
- 3.5.4 Diadromous fish (e.g. eel) have also been shown to display avoidance to EMFs from subsea 130kV AC cables, particularly in saline conditions (the impact being a

delay of an estimated average of 30 minutes). In saline conditions eel are likely to be using magnetic orientation and where EMFs propagate further. Within an estuary location such as this project location, eel is more dependent on chemical cues and EMFs propagate less due to lower conductivities.

- 3.5.5 Studies carried out on a 33 kV crossing in the Clwyd estuary in North Wales suggests that effect of the cables on lamprey and salmonids is restricted, based upon the continued flourishing population of these species.
- 3.5.1 The electric cables located onshore will run sub-surface to terminate at Baglan Bay substation, crossing the course of the River Neath. For the purpose of this TCPA application, it is only where the cable crosses the River Neath where there is the potential for impacts on elasmobranch and diadromous fish species. The proposed cable will cross the River Neath by the installation of a single large diameter or 3 smaller diameter ducts by directional drill (approximately 650m in length). The ducts will aim to be installed with approximately 10m clearance where possible from the top of the duct to the river bed above. Final duct depth will be determined following the undertaking of detailed getotechnical surveys prior to installation.
- 3.5.2 The burying of a cable will not affect the magnitude of the magnetic field, which will diminish with increasing distance from the cable (in proportion to the current passing along the cable). The ES models the electromagnetic fields produced from the cables, which shows that the electric fields will be fully contained by the shielding around the cable, whilst magnetic fields will be released in to the local environment with limited strength.
- 3.5.3 The electromagnetic fields generated by from the electrical transmission cable are therefore not expected to impact on fish fauna within the bay or impede those returning to rivers.
- 3.5.4 However, to minimise the potential impact of EMF on electrosensitive and magnosensitive fish species, electric cables across the River Neath will be laid at a depth in a new duct at 10m where ground conditions allow. Final duct depth will be determined following the undertaking of detailed getotechnical surveys prior to installation of the 275kV cable.
- 3.5.5 In summary, the key impacts occur during the operational phase of the 275kV Project. The source of the potential impact, the potential impact and potential effects are summarised in Tale 3.1 below:

Table 3.1 Operational impacts on fish

Potential source	Potential impact	Potential effect(s)	Mitigation
Installation of power cables under the River Neath	Creation of electromagnetic fields (EMF)	Behavioral disturbance of elasmobranchs and diadromous fish	Cables crossing the Neath Estuary will be placed at a depth of 10m where possible

3.6 Marine mammals

- 3.6.1 The TLSB ES assesses the potential significant impacts of the proposed electricity cable upon marine mammals. Please refer to Chapter 10 of the ES for full details of the impact assessment. For the purpose of this TCPA application, it is only where the cable crosses the River Neath where there is the potential for impacts on marine mammals.
- 3.6.2 Marine mammals are not considered to be electrosensitive species. In terms of magnosensitive species (cetaceans such as harbour porpoise), sensitivity relates to the geomagnetic field and direction finding ability (e.g. migration). However, there is no apparent evidence that cables have influenced the migration of cetaceans.
- 3.6.3 Due to magnetic field strengths quickly diminishing away from a cable, potential exposure to detectable B-fields is only likely to occur within a few metres of the River Neath crossing cable.
- 3.6.4 Harbour porpoise are rarely recorded in the River Neath estuary with grey seal only occasionally recorded.
- 3.6.5 Therefore, whilst there is a high probability of magnetic fields being generated, magnitude of change is considered to be negligible. No evidence linking magnetic fields from cables to impacts on the direction finding ability or movement of cetaceans has been found and seals are not considered magnetoreceptive. Sensitivity is therefore considered to be low. Therefore, whilst marine mammals are considered to be of high importance, the impact from electromagnetic fields during operation is considered to be **insignificant**.

3.7 Coastal birds

- 3.7.1 The only potential impact of the proposed electricity cable will occur during construction within the Crymlyn Burrows SSSI. The nearest high tide roost is Roost 3 (at the mouth of the River Neath in the east) (Fig. 11.21 of Volume 2 of the main ES) and the construction activity will not interfere with that roost.
- 3.7.2 No significant residual adverse impact on Crymlyn Burrows SSSI is expected.
- 3.7.3 TLSB has produced a draft 275kV CEMP to support this planning application. Section 11 of the CEMP includes details of the measures that will be implemented to manage and where necessary mitigate any potential impacts on Crymlyn Burrows SSSI during the construction of the 275kV cable.

3.8 Terrestrial ecology

- 3.8.1 The potential impacts of the 275kV Project on ecological receptors, including terrestrial birds, were considered by investigating existing baseline conditions, followed by prediction and assessment of likely impacts. Mitigation measures designed to alleviate potential impacts, in addition to enhancement measures,

have been proposed. The ecological impact assessment was carried out in line with the CIEEM Guidelines for Ecological Impact Assessment (2006).

- 3.8.2 Five statutory designated sites were identified within 5km of the 275kV Project: Crymlyn Bog/Cors Crymlyn – Special Area of Conservation (SAC), Ramsar wetland, and Site of Special Scientific Interest (SSSI) (circa <200m north); Pant-y-Sais SSSI and Local Nature Reserve (LNR) (circa 1.5km north-east); Crymlyn Bog and Pant-y-Sais National Nature Reserve (NNR) (circa 850m north); Crymlyn Burrows SSSI (circa <100m east); and Blackpill SSSI (circa 3km west). Four further SSSIs remote from the 275kV Project area, notified for their geological interest, were also identified. The closest coastal sites with a geomorphological connection with the Severn Estuary / Bristol Channel include: Kenfig SAC, SSSI, NNR and LNR (circa 12.5km south-east); and Oxwich Bay SSSI and NNR (circa 14km west). Non-statutory sites in proximity to the 275kV Project include the Fabian Way (A483) Conservation Verge, Red Jacket Fen Wildlife Trust Reserve and Spontex Dunes Site of Importance for Nature Conservation (SINC) designated by the City and County of Swansea.
- 3.8.3 Baseline surveys included a Phase 1 habitat survey; a rapid National Vegetation Classification (NVC) assessment of coastal habitats associated with Swansea Bay (Photo 3); and faunal surveys including breeding birds, bats, reptiles, invertebrates and mammals including otter.
- 3.8.4 No impacts to sites of international nature conservation importance were identified. Direct but temporary impact to Crymlyn Burrows SSSI and the Fabian Way Conservation Verge will result from cable installation. Changes in coastal processes will result in indirect effects on Blackpill SSSI and Crymlyn Burrows SSSI.
- 3.8.5 Cable installation will temporarily affect Crymlyn Burrows SSSI and Fabian Way Conservation Verge. Mitigation for cable installation includes seasonal timing, use of existing tracks, minimisation of the construction corridor and use of ground protection matting. For protected or otherwise notable species, winter clearance of scrub, a capture and translocation programme for reptiles, and minimisation of light spill is likely to result in an insignificant impact.
- 3.8.6 TLSB has produced a draft 275kV CEMP to support this planning application. The 275kV CEMP includes details of the measures that will be implemented to manage and where necessary mitigate any potential impacts during the construction of the 275kV cable. Section 6, 12 and 13 provides details relevant to construction lighting, terrestrial INNS and reptiles.

3.9 Seascape and landscape visual impact assessment (SLVIA)

- 3.9.1 The proposed electricity cable will not have a likely significant visual impact upon the seascape or landscape.

3.10 Navigation

- 3.10.1 The proposed electricity cable will not have a likely significant impact upon navigation.

3.11 Onshore transport

- 3.11.1 The potential impact of the installation of the electricity cable in terms of construction traffic is not significant.
- 3.11.2 The ES carries out an assessment of the potential impacts to onshore traffic and transport resulting from the 275kV cable route Project. In addition, an assessment of the likely impact of the 275kV cable route Project together with other schemes in the surrounding area ('cumulative developments') has been carried out. The baseline environment was examined in relation to the surrounding highway network, public transport, cycling and pedestrian facilities within the vicinity of the 275kV cable route Project. The assessment then considered the interaction between future development related movements and the baseline environment.
- 3.11.3 The proposed route of the electricity cable runs, as it leaves the Port of Swansea, along Fabian Way. Fabian Way is an arterial road which forms part of the A483, connecting Swansea city centre with the M4 motorway at Junction 42. It is the main route into Swansea from the surrounding area and for traffic from further afield and runs adjacent to the Port. There are two junctions off Fabian Way providing access to the Port (the old Port access opposite the Park & Ride, and Baldwin's Crescent). There is no public access to the Port of Swansea at present. Bus services operate along Fabian Way and the TLSB Project can be accessed from bus stops at two locations. There is a cycle path running along the length of Fabian Way that forms a section of both National Cycle Network route 4 (NCN 4) and the Swansea to Glyncorrwg Loop. There is a Park & Ride facility located to the north of Fabian Way at the Langdon Road junction.
- 3.11.4 TLSB has produced a draft 275kV CEMP to support this planning application. The 275kV CEMP includes details of the measures that will be implemented to manage and where necessary mitigate any potential impacts on traffic during the construction of the 275kV cable (see Section 14). This includes mitigation which will help to minimise the impact of construction of the 275kV cable route on all modes of transport. HGV movements along Fabian Way will be managed to ensure that deliveries are timed to avoid the commuter peak periods as far as possible. The impact of the 275kV Project on the local highway network is predicted to be of minor adverse significance. The impact on public transport during the construction phase is expected to be negligible. Impacts on pedestrian and cyclist amenity will also be minimised through the 275kV CEMP, and the impact is expected to be negligible.
- 3.11.5 With or without the 275kV Project, traffic generated by cumulative developments will result in a moderate adverse impact on the local highway network.

3.12 Air quality

- 3.12.1 The proposed electricity cable will not give rise to any potential significant environmental impacts on air quality.

3.13 Hydrology and flood risk

- 3.13.1 An assessment of the hydrological conditions and flood consequences has been undertaken for the site preparation, construction and operation of the 275kV Project.
- 3.13.2 During the construction phase of the proposed electricity cable, standard good practice construction practices will be used to control and minimise the effect on surface waters. This would include reducing potential contamination caused by the construction process, such as release of sediments into the sewers, spillage and leakage of oils and fuels, leakage of wet cement and concrete, and the disturbance of existing contamination and drainage. The overall likely impact of the 275kV Project during construction would be minor and temporary in nature with the implementation of the mitigation measures.
- 3.13.3 The proposed electricity cable will not give rise to any significant impacts upon flooding or flood risk.
- 3.13.4 TLSB has produced a draft 275kV CEMP to support this planning application. The 275kV CEMP includes details of the measures that will be implemented to manage and where necessary mitigate any potential impacts during the construction of the 275kV cable. Section 8 and 9 of the 275kV CEMP includes measures specific to pollution prevention and spill response.

3.14 Land quality & hydrology.

- 3.14.1 A robust desk study of land quality has taken place to identify key land contamination receptors and their sensitivity. The potential impacts of the 275kV Project have been assessed against the importance or sensitivity of the receptors. A walkover was also carried out to visually assess the land quality.
- 3.14.2 Most of the land along the foreshore of the Port of Swansea was reclaimed, many years ago, from the intertidal area to form the dock enclosure and is therefore comprised of 'made ground'. Queen's Dock was formerly an oil terminal with pipelines that ran to the Llandarcy Refinery and Baglan Bay chemical works. Pipelines are thought to remain in the ground from the Port boundary to the River Neath / Baglan Bay on approximately the same route to that proposed for the 275kV Project's grid connection to the NETS.
- 3.14.3 Parts of the onshore area have been subject to industrial use, in conjunction with the Port operations and associated industrial activities, for many years. Some areas with previously-identified land contamination have already been remediated by the landowners. Remediation works to the ground and groundwater are currently ongoing in other parts of the onshore area. The proposed onshore development areas of the 275kV Project avoid areas of known contamination, particularly those associated with former oil industry

infrastructure. Prior to construction of the 275kV cable route Project, further investigation will be undertaken, and any contaminated areas likely to be affected by the works will be avoided, or investigated, assessed and remediated as necessary.

- 3.14.4 Visual evidence of contamination of the groundwater was observed during the site walkover, with the localised presence of a surface sheen on groundwater seepages on the foreshore. This was interpreted as being due to both hydrocarbon contamination and the natural breakdown of hydrocarbon contaminants. The visual observation of sheens on the foreshore groundwater seepages appeared to be associated with areas that are currently undergoing remediation works to reduce the impact of oil industry-related contamination.
- 3.14.5 During the construction phase, potential impacts will be temporary in nature and controlled by standard operating procedures detailed within the 275kV CEMP produced for this application. This covers potential contamination caused by the construction process and existing contamination. During the operational phase, land quality impacts will be negligible.

3.15 Noise and vibration

- 3.15.1 An assessment of the potential noise and vibration effects of the 275kV Project has been undertaken for terrestrial environments. Background terrestrial (land) noise surveys have been undertaken to inform the EIA.
- 3.15.2 Baseline land noise surveys were undertaken at seven sites within the vicinity of the 275kV Project, extending from Swansea Marina on the western side of the River Tawe, eastwards to the southern end of Aberafan seafront. Existing noise data in the public domain collected for CCSC and NPTCBC and the Welsh Noise Map for the area were reviewed. On land, the baseline dominant noise sources are associated with vehicle movements, namely traffic on Fabian Way and around the industrial sites within Swansea Port. Offshore, the highest noise levels are associated with shipping accessing one of the three ports in the area (Swansea, Neath and Port Talbot).
- 3.15.3 The construction phase of the 275kV Project will generate the most noise. Noise associated with increased traffic during the construction phase will not result in adverse effects over the baseline noise levels, and due to the existing commercial / industrial nature of the adjacent port areas.
- 3.15.4 TLSB has produced a draft 275kV CEMP to support this planning application. The 275kV CEMP includes details of the measures that will be implemented to manage and where necessary mitigate any potential noise impacts during the construction of the 275kV cable (see Section 5).

3.16 Cultural heritage: marine archaeology

- 3.16.1 The proposed electricity cable will not have a likely significant impact upon marine archaeology.

3.17 Cultural heritage: terrestrial archaeology

- 3.17.1 The cable connection route passes through an area of sandy foreshore deposits, some of which appear to have formed in the very recent past through sedimentation, probably due to the construction of the dock piers in the 19th and 20th centuries. From the landfall of the cable at the high water mark to where it either joins Fabian Way there has been much 20th century development and any archaeological remains of significance in this location are unlikely to survive due to modern disturbance. As the cable trench is not expected to be very deep the potential to impact archaeological remains along this section is low
- 3.17.2 The cable route lies within the southern verge of Fabian Way. The road, which was constructed in the 1940s, was almost certainly elevated by one to two metres throughout the extent of the cable run and the archaeological potential of this central section of the proposed cable route option is low.
- 3.17.3 As the cable route runs through Crymlyn Burrows SSSI, there may be potential for the area to contain archaeological remains at a depth relating to former marine environments. This has been considered in greater detail in Chapter 20: Cultural Heritage: Marine Archaeology of the wider TLSB Project ES (TLSB, 2014). Relevant to the cable route, Chapter 20 identifies that there appears to be some potential for maritime remains, comprising ships or boats dating to the medieval period to be present, due to the foundation of a settlement of Swansea, and contemporary examples of shipping along the south Wales coast. However, due to the location of the coastline this potential may be somewhat limited to wreck sites, with any extant deliberately beached boats likely to be in the Crymlyn Burrows area, and thus beyond the 275kV Project site.
- 3.17.4 Consequently, it is very likely that any remains associated with former marine environments will be located at sufficient depth for the cable trench not to cause any impact. The potential for archaeological remains in the Crymlyn Burrows area of the proposed cable route option is considered to be low.
- 3.17.5 Where the cable route diverges in a south easterly direction across Crymlyn Burrows, the assessment records evidence for a Jersey Marine airfield in the 1930s and WWII military installations during the 1940s further to the north. However, aerial photographic evidence suggests that the extent of the WWII remains was limited to an area sufficiently distant from the 275kV Project for there not to be an impact. However, it is possible that further WWII military activity took place in the location of the proposed cable trench options and the potential for archaeological remains pertaining to this are low to medium. The 1920s-1930s airfield was located on Crymlyn Burrows to the north of the 275kV Project, but its exact location is not currently known. The airfield is not thought to have been a surfaced runway, and a linear feature shown on the 1937-1947 OS maps possibly represents this feature. The potential for remains relating to the former airfield is low.

- 3.17.6 As the cable route options approach the River Neath, on both the western and eastern sides there is little archaeological evidence, presumably due to the dangers associated with the river at this point. Even as early as the Norman period, the crossing at Briton Ferry was known to be treacherous due to sandbanks and strong currents (Morgan 1977). Limited and small scale industrial activity has taken place further away from the river and on the western side, a coal drift to the north of the route options and abandoned tunnel workings of 19th century date to the south were once present. Further tunnel workings were also present on the eastern side of the river, and additional upstream major industrial activity took place with iron and copper works. The potential for archaeological remains in this area is low.
- 3.17.7 Having crossed the River Neath, the final section of the route crosses Baglan Bay to link to a substation at the site of Baglan Bay Power Station, an area not previously developed until the mid- to late 20th century. The sandy deposits and the topographically isolated location suggests that the area was little used in the past and any archaeological remains would have been restricted to temporary activities that would have probably left few traces. It is likely that extensive development during the later 20th century will have removed any potential remains that may have existed. This is apparent on an aerial photograph from 1970 (Plate 18, Appendix 21, Volume 3 of chapter 20 of the TLSB Project wide ES) (TLSB, 2014). The HER records the existence of an early 20th century rifle practice range in this approximate location, but it is unlikely that any remains of this exist. Research has shown that peat deposits may be present at depth in this area, but the cable trench is not expected to be deep enough to disturb any potential palaeoenvironmental remains of significance. The potential for archaeological remains to be present in the Baglan Bay section is low.
- 3.17.8 In conclusion, ground works for the construction of the cable trench connection between Baglan Bay and Queens Dock may traverse areas of previously undisturbed ground (Crymlyn Burrows). These areas have been assessed as having as having a low level of archaeological importance, with the magnitude of impact considered to be low. Therefore, the impact on the Historical resource is **negligible**.
- 3.17.9 With the proposed mitigation, the electricity cable is judged to have a negligible impact on the terrestrial cultural heritage resource.
- 3.17.10 TLSB has produced a draft 275kV CEMP to support this planning application. The 275kV CEMP includes details of the measures that will be implemented to manage and where necessary mitigate any potential impacts terrestrial archaeology and historic assets during the construction of the 275kV cable. This includes the implementation of a watching brief during construction. In addition, all archaeological work shall be carried out in accordance with the Code of Conduct (2014) and Standard and Guidance for Archaeological Watching Brief (2014) produced by the Chartered Institute for Archaeologists (CIfA).



3.18 Economy, tourism and recreation

- 3.18.1 The proposed electricity cable will not have a significant impact on the economy, tourism or recreation.

4 Application publicity

4.1 Further information

4.1.1 This NTS and all other documents that form part of this TCPA application for the 275kV cable route are available to view (free of charge) on the Tidal Lagoon Power (TLP) website.

4.1.2 For information about the 275kV Project and TLSB's application, contact TLSB on:

- Call: **01792 274006**
- Website: www.tidallagoonpower.com
- Email: tlsbplanning@tidallagoonpower.com
- Write to: **Tidal Lagoon Swansea Bay plc, Suite 6, J-Shed, King's Road, Swansea SA1 8PL**