

XLINKS' MOROCCO-UK POWER PROJECT

Outline Decommissioning Strategy

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XLINKS MOROCCO – UK POWER PROJECT

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Glossary

Term	Meaning
Alverdiscott Substation Connection Development	The development required at the existing Alverdiscott Substation Site, which is envisaged to include development of a new 400 kV substation, and other extension modification works to be carried out by National Grid Electricity Transmission. This does not form part of the Proposed Development, however, it is considered cumulatively within the Environmental Impact Assessment as it is necessary to facilitate connection to the national grid.
Annoyance (dust)	Loss of amenity due to dust deposition or visible dust plumes, often related to people making complaints, but not necessarily sufficient to be a legal nuisance, as defined by the Institute of Air Quality Management.
Applicant	Xlinks 1 Limited.
Bipole	A Bipole system is an electrical transmission system that comprises two Direct Current conductors of opposite polarity.
Construction Traffic Management Plan	A document detailing the construction traffic routes for heavy goods vehicles and personnel travel, protocols for delivery of Abnormal Indivisible Loads to site, measures for road cleaning and sustainable site travel measures.
Converter Site	The Converter Site is proposed to be located to the immediate west of the existing Alverdiscott Substation Site in north Devon. The Converter Site would contain two converter stations (known as Bipole 1 and Bipole 2) and associated infrastructure, buildings and landscaping.
Converter station	Part of an electrical transmission and distribution system. Converter stations convert electricity from Direct Current to Alternating Current, or vice versa.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Environmental Impact Assessment	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
Environmental Statement	The document presenting the results of the Environmental Impact Assessment process.
HVAC Cables	The High Voltage Alternating Current (HVAC) cables which would bring electricity from the converter stations to the new Alverdiscott Substation Connection Development.
HVDC Cables	The High Voltage Direct Current (HVDC) cables which would bring electricity to the UK converter stations from the Moroccan converter stations.
Landfall	The proposed area in which the offshore cables make landfall in the United Kingdom (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Cornborough Range, Devon, between Mean Low Water Springs and the Transition Joint Bay inclusive of all construction works, including the offshore and onshore cable routes, and landfall compound(s).
Mean Low Water Springs	The height of mean low water during spring tides in a year.
National Landscape	An area of land designated for its natural features of outstanding beauty. The land is protected by the Countryside and Rights of Way Act 2000, in order to conserve and enhance its natural beauty. Previously referred to as an Area of Outstanding Natural Beauty.
Onshore Infrastructure Area	The proposed infrastructure area within the Order Limits landward of the transition joint bays, which contains the Onshore HVDC Cables, Converter Site, highway works, utility diversions and HVAC Cables.
Preliminary Environmental Information Report	A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project, and which helps to inform consultation responses.
Proposed Development	The element of the Xlinks Morocco-UK Power Project within the UK, which includes the offshore cables (from the UK Exclusive Economic Zone to landfall), landfall site,

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	onshore Direct Current and Alternating Current cables, converter stations, and road upgrade works.
Proposed Development Draft Order Limits	The area within which all offshore and onshore components of the Proposed Development are proposed to be located, including areas required on a temporary basis during construction (such as construction compounds).
Protected species	A species of animal or plant which it is forbidden by law to harm or destroy.
Receptor	The element of the receiving environment that is affected.
Runoff	Runoff occurs when there is more water than land can absorb. The excess liquid flows across the surface of the land.
Site Waste Management Plan	A site waste management plan aims to establish and estimate how much waste is produced by the Proposed Development and sets out how resources will be managed and waste controlled at all stages during construction activities.
Written Scheme of Investigation	A plan detailing the protocol for any archaeological investigation to be carried out prior to the construction of the Proposed Development, including procedures for field survey and watching briefs.
Xlinks Morocco UK Power Project	The overall scheme from Morocco to the national grid, including all onshore and offshore elements of the transmission network and the generation site in Morocco (referred to as the 'Project').

Acronyms

Acronym	Meaning
AIL	Abnormal Indivisible Load
CEMP	Construction Environmental Management Plan
CoPA	Control of Pollution Act
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EEZ	Exclusive Economic Zone
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicles
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IAQM	Institute of Air Quality Management
LEMP	Landscape and Ecological Management Plan
LGV	Light Goods Vehicles
MLWS	Mean Low Water Springs
PEIR	Preliminary Environmental Information Report
PPP	Pollution Prevention Plan
PRoW	Public Right of Way
SWMP	Site Waste Management Plan

Units

Units	Meaning
km	Kilometre
km ²	Square Kilometre
GW	Gigawatt
GWp	Gigawatt peak
mm	Millimetres
mph	Miles per hour

1 OUTLINE DECOMMISSIONING STRATEGY

1.1 Introduction

Background

- 1.1.1 This document has been produced to support the DCO (Development Consent Order) application for the UK elements of Morocco-UK Power Project (referred to as the 'Proposed Development'). This includes the offshore elements within the UK Exclusive Economic Zone (EEZ) and the onshore elements within the administrative area of Torridge District Council and Devon County Council. It should be noted that some aspects of the proposed highways works fall within the North Devon District Council administrative area.
- 1.1.2 A full description of the Proposed Development is provided in Volume 1, Chapter 3: Project Description (Document Ref. 6.1.3) of the Environmental Statement.

Purpose of the Outline Decommissioning Strategy

- 1.1.3 The Applicant is seeking consent for the installation, operation and maintenance of two converter stations and associated infrastructure, including HVDC and HVAC Cables, and highways improvements. The Applicant is not seeking consent for decommissioning and any consent required for decommissioning would be sought at the appropriate time.
- 1.1.4 However, this Outline Decommissioning Strategy has been developed to support the development of a Decommissioning Strategy prior to operation of the Proposed Development.

Scope of the Outline Decommissioning Strategy

- 1.1.5 The Outline Decommissioning Strategy applies to the onshore and offshore elements of the Proposed Development that are capable of being decommissioned. Other decommissioning strategies and plans would be developed for jurisdictions within France, Spain, Portugal and Morocco based on their jurisdictional requirements.
- 1.1.6 The Outline Decommissioning Strategy considers current best practices which are expected to evolve over the estimated operational life of the Proposed Development. Therefore, a key principle of the Outline Decommissioning Strategy is to ensure that the Decommissioning Plan(s) would be based on a suitable environmental appraisal and industry best practices available at the time of decommissioning.

Decommissioning Strategy and Plan(s)

- 1.1.7 A Decommissioning Strategy would be developed in accordance with the Outline Decommissioning Strategy in consultation with the local authority and prior to bringing the Proposed Development into operational use. In the event that

decommissioning is required, Decommissioning Plan(s) for the Proposed Development would be produced in accordance with the Decommissioning Strategy prior to decommissioning and in line with the latest available guidance, legislation and any new technologies at the time of the Proposed Development's decommissioning.

- 1.1.8 The Decommissioning Plan(s) would include provisions for the removal of infrastructure across the full extent of the Proposed Development both onshore and offshore where it is deemed environmentally advantageous to do so following an environmental appraisal. The Decommissioning Plan(s) would also provide details relevant to flood risk, pollution prevention and avoidance of ground disturbance. Decommissioning Plans for other jurisdictions beyond the UK would be developed in accordance with the requirements of those jurisdictions, ensuring consistency in approach across the Project.
- 1.1.9 Subject to the outcome of the decommissioning environmental appraisal to be completed ahead of decommissioning, the Decommissioning Plan(s) would be guided by the measures approved in the Construction Environmental Management Plan(s) for the Proposed Development given the similarity between the construction and decommissioning activities.
- 1.1.10 The Decommissioning Plan(s) would be developed in consultation with relevant stakeholders and approved by the local planning authority (Torridge District Council) for onshore elements and the Marine Management Organisation (MMO) for offshore elements prior to the commencement of decommissioning activities. Decommissioning Plan(s) would be developed in accordance with the Decommissioning Strategy.
- 1.1.11 The Applicant is committing, via bilateral discussions with the UK government, to establish a decommissioning fund to ensure (from a funding perspective) that decommissioning actions can be delivered.

1.2 Decommissioning elements

- 1.2.1 The converter stations would be designed, manufactured and installed for a minimum operational lifetime, which is currently anticipated to be 50 years. Taking account of ongoing repairs and maintenance, the operational lifetime of the onshore and offshore electricity cables (including both HVDC and HVAC) is anticipated to exceed that of the converter stations. The highways improvements would not have a forecast end of life and would not be decommissioned.
- 1.2.2 For the electricity infrastructure only, the end of the operational lifetime is anticipated to be 50 years from date of full commissioning. Subject to relevant additional consents and legislative requirements, it is anticipated that potential refurbishment and operational life extension of the Proposed Development may occur. This potential refurbishment and extension of operational life would be considered closer to the end of the initial operational lifetime.
- 1.2.3 In the event that the operational lifetime of the Proposed Development is not extended, decommissioning would take place. The decommissioning sequence would generally be the reverse of the construction sequence and involve similar types and numbers of vehicles, vessels and equipment. Therefore, it is likely that the effects of decommissioning on the environment would be no worse than those effects identified during the construction phase. Notwithstanding, decommissioning is considered in the relevant sections of this ES.

Onshore elements

Converter Stations

- 1.2.4 The operation of the converter stations is intended to form permanent elements of electrical infrastructure serving the national grid, however as stated above, the minimum operational lifetime is currently anticipated to be 50 years. It is likely that this operational lifetime could be extended through refurbishment and the replacement of equipment, rather than decommissioning.
- 1.2.5 If the operation of the Proposed Development does not continue beyond 50 years, the converter stations would be decommissioned. If complete decommissioning is required, then all the electrical infrastructure and buildings would be removed and any waste arising recycled or disposed of in accordance with the waste hierarchy and relevant regulations at the time of decommissioning. The Converter Site may be re-purposed for an alternate use (separately agreed and consented) or would be reinstated as far as possible to a suitable use, in accordance with the Onshore Decommissioning Plan(s).

Onshore HVDC and HVAC Cables

- 1.2.6 If the Proposed Development is required to be decommissioned, the underground electricity (HVDC and HVAC) cables would be decommissioned. HVDC and HVAC Cables may be recovered and removed by pulling the cables through the ducts (e.g., for recycling). Otherwise, they would be left in place in the ground with the cable ends cut, sealed and securely buried as a precautionary measure.
- 1.2.7 Cable ducts, joint bays and link boxes would be left in-situ, to minimise environmental disturbance.
- 1.2.8 The decommissioning of the HVDC and HVAC Cables would require the construction of temporary accesses to the cable joint bays, where the cables would be removed and cut into manageable lengths. Following removal, cables would be transported to an appropriately licensed recycling or waste disposal facility.
- 1.2.9 Following decommissioning of the HVDC and HVAC Cables, cable ducts would be sealed and the working areas and temporary accesses would be restored to the original condition.

Offshore elements

- 1.2.10 If decommissioning is required, the options for decommissioning the cables would be evaluated at the time of decommissioning, with the available technologies of the time reviewed fully (in recognition that engineering technologies are ever evolving). The least environmentally damaging decommissioning option, is (in general) to de-energise the cable, disconnect it from any wider system, and secure it in place to be left *in-situ*, thereby avoiding unnecessary seabed disturbance.
- 1.2.11 However, other options may include the requirement for full or partial removal of the cables. The methods for removal would be broadly similar to those used during the construction phase with the potential for the cables to be removed by direct pulling, rather than de-burial. The requirement for any removal could also apply to other infrastructure installed as part of the project i.e. cable protection.

The footprint of decommissioning activities (disturbance footprint at the sea bed) is anticipated to be less than that of the construction phase.

1.3 Approach to Decommissioning

General Approach

- 1.3.1 The Proposed Development would be decommissioned in an environmentally sensitive manner and would meet the requirements of all relevant legislation, codes of practice and standards as identified in the DCO, ES and any updates to legislation or standards adopted at the time of decommissioning, to limit the adverse impacts on the local community and environment as far as reasonably practicable.
- 1.3.2 The Project outside of the Proposed Development would also be decommissioned in an environmentally sensitive manner and would meet the requirements of all relevant legislation, codes of practice and standards as applicable in each jurisdiction, and any updates to legislation or standards adopted at the time of decommissioning, to limit the adverse impacts on the local community and environment as far as reasonably practicable.
- 1.3.3 If decommissioning is required, the Project is anticipated to commence decommissioning activities in the early 2080s. Therefore, it is neither possible nor desirable to create Decommissioning Plan(s) at this stage. Detailed assessments prior to the commencement of decommissioning activities would be required to determine the Decommissioning Plan(s) that account for good practice and market conditions of the time.
- 1.3.4 This Outline Decommissioning Strategy has been prepared on the basis that all aspects of the Project would be decommissioned to the full extent that is reasonably practicable and where environmentally advantageous to do so. Options for minimising impacts, re-purposing or extension of life as an alternative use would inform the full extent of the decommissioning required. This would result in a more comprehensive schedule of decommissioning than is considered best practice today to account for future changes in what may be considered to be best practice in the future.

Resource Recovery

- 1.3.5 Resources recovered through decommissioning of the Proposed Development and the wider Project would be managed in accordance with the principles of the waste hierarchy (i.e., avoid, reduce, reuse, recycle, recover and disposal). A Resource and Waste Management Plan (SWMP) or similar would append the final Decommissioning Plan(s).

Environmental Management

- 1.3.6 The Decommissioning Plan(s) would include relevant environmental management and mitigation measures, consistent with those used in the construction phase or reflective of best practice when the Plans are produced.

1.4 Legal and Regulatory Requirements

- 1.4.1 A primary function of the Decommissioning Plan(s) would be to ensure all construction site personnel are aware of their legal duties and environmental responsibilities during the decommissioning of the Proposed Development and wider Project. A framework of legislation would be produced alongside the Decommissioning Plan(s) to reflect relevant legislation.
- 1.4.2 Specific decommissioning-related activities may be subject to regulatory controls through the provision of consents, licenses or permits as required.

1.5 Roles and Responsibilities

- 1.5.1 The following roles and responsibilities are anticipated to be required during the decommissioning of the Proposed Development. There may be nuances between the onshore and offshore elements which would be decommissioned by separate contractors.

Project Team

Primary Management

Project Management Team

- 1.5.2 The Applicant's onshore and offshore project management teams would be responsible for coordinating the works on behalf of the Applicant, ensuring that the measures in the Decommissioning Plan(s) are implemented and giving necessary direction to Principal Contractor(s) (e.g. setting contractual obligations).

Secondary Management

Decommissioning Manager(s)

- 1.5.3 The Decommissioning Manager has overall responsibility for the decommissioning activities and would be responsible for the following:
- compliance with the Decommissioning Plans, procedures and legislation;
 - overseeing the management of vessel movements (for offshore decommissioning) through the implementation of a decommissioning phase navigational safety and vessel management plan.
 - managing specialist environmental subcontractors and service providers;
 - ensuring that environmental issues are covered during all induction training sessions;
 - reporting to the Project Management Team on any environmental incidents;
 - ensuring environmental quality standards are adhered to and monitoring compliance during construction works; and
 - ensuring that liaison with the environmental regulators is maintained as appropriate.

Environment Manager

- 1.5.4 The Environmental Manager (s) would be responsible for the interface between the environmental specialists and engineers including the following:
- coordinating the preparation of environmental appraisals required to develop the Decommissioning Plan(s).
 - coordinating and attending necessary meetings and consultations relating to environmental and sustainable construction aspects of the work;
 - ensuring that the commitments from statutory procedures, are included in the decommissioning Plan(s) and detailed environmental design;
 - reporting on site environmental monitoring; and
 - maintaining all Decommissioning Plan(s) documents and management systems as working documents undertaking reviews and updates as necessary; and obtaining the relevant licences and consents.

Decommissioning Supervisor

- 1.5.5 The Decommissioning Supervisor would assist the Site Manager in the preparation of the method statements and would be responsible for overseeing decommissioning activities on a day-to-day basis to ensure all environmental commitments are met.

Health and Safety Manager

- 1.5.6 The Health and Safety Manager would be responsible for identifying and managing health and safety risk for the onshore works, in accordance with legal requirements and best practice, which would be set out in the Health and Safety Plan prepared post-consent and updated prior to the submission of the Decommissioning Plan(s).

Technical Roles

Environmental Clerk of Works

- 1.5.7 Depending on the extent of works required, an Environmental Clerk of Works may be required to oversee the decommissioning activities. The Environmental Clerk of Works would be the site representative and would be responsible for overseeing decommissioning activities to ensure all environmental commitments are met and compliance with the conditions of all licences and permits. It is anticipated that the Environmental Clerk of Works would work with the Decommissioning Supervisor and report to the Environmental Manager.

Ecological Clerk of Works

- 1.5.8 An Ecological Clerk of Works (ECoW) may be required if the environmental appraisal identifies potential ecological impacts associated with the decommissioning activities. The ECoW would report on ecological matters and would be responsible for undertaking pre-decommissioning surveys and monitoring. The ECoW would be the primary point of contact for ecological

matters and would assist with site induction and tool-box talks, where necessary, to ensure ecological constraints are identified to all staff. It is anticipated that the ECoW would work with the Decommissioning Supervisor and report to the Environmental Manager.

Agricultural Liaison Officer

- 1.5.9 An Agricultural Liaison Officer would be appointed in time for commencement of pre-decommissioning activities and would be the prime contact for ongoing engagement about practical matters with landowners, occupiers and their agents before and during the construction process.
- 1.5.10 The Agricultural Liaison Officer (or their company) would be contactable within the core working hours during the decommissioning phase to landowners, agents and occupiers and would provide 24-hour team or company contact details for use in the event of emergency.

Fisheries Liaison Officer

- 1.5.11 A Fisheries Liaison Officer (FLO) would be appointed to support the ongoing liaison with commercial fisheries during the decommissioning activities.

Community Liaison Officer

- 1.5.12 The Community Liaison Officer would be the dedicated contact for liaising with residents and local businesses and would be responsible for implementing the Communications Plan as updated prior to the submission of the Decommissioning Plan.

1.6 Overview of Decommissioning Activities

Programme

- 1.6.1 The programme of decommissioning works would be assessed based on the scope of the Decommissioning Plans ahead of decommissioning works commencing. Each element would require ongoing planning, management, permitting, and surveying throughout the decommissioning phase. The programme of activities anticipated for the HVDC converter stations, underground cables, and offshore cables would require revaluation ahead of the Decommissioning Plans being submitted, but the anticipated programme of works are outlined below. The duration for each element of the Proposed Development to be decommissioned based on the most comprehensive programme or works anticipated is summarised in the below sections.

HVDC Converter Stations

- 1.6.2 There are eight overlapping phases of decommissioning that are currently envisaged for the converter stations. The total programme for the below works is indicatively anticipated to be 30 months, including 12 months for reinstatement:
 - Preparation and planning in line with Decommissioning Plan(s)

- Licenced removal or materials or equipment which could create an environmental hazard
- Removal and recycling of high voltage equipment within the HVDC converter station
- Removal and recycling of electrical components within the HVDC converter station
- Removal and recycling of mechanical components within the HVDC converter station
- Structural dismantling or demolition of steel portal frame
- Excavation and breaking structural foundations and surface treatment for recycling.
- Reinstatement to original condition or for redevelopment

Underground Cables

1.6.3 The decommissioning activities related to the underground HVDC cables in the UK reflect the ducted solution which would be used. There are seven overlapping phases of decommissioning that are currently envisaged, and the total duration of the below works is indicatively anticipated to be 10 months:

- Preparation and planning in line with Decommissioning Plan(s)
- Construction of temporary access to the cable joint bays
- Excavation of the cable joint bays
- Cable pulling and cutting into manageable lengths
- Cable removed to an appropriately licensed recycling or waste disposal facility
- Sealing of the cable ducts
- Reinstatement of the temporary accesses

1.6.4 For avoidance of doubt, it is unlikely that it would be environmentally advantageous to remove cable ducts, link boxes or joint bay bases. It is assumed therefore that for the purposes of this Outline Decommissioning Strategy that ducts would be capped and left in-situ.

Offshore Cables

1.6.5 The decommissioning activities related to the Offshore HVDC cables in the UK reflect the intention for the cables to be protected along the entirety of the route through burial in the sea bed or placement on the sea bed with protection. The pre-decommissioning environmental appraisal may conclude a detrimental impact associated with recovering all offshore elements of the HVDC cable route and the associated protection. Where it is determined that the cables should be removed as part of decommissioning, it is envisaged that the following steps would be required. The total duration of the below works is indicatively anticipated to be eight months:

- Preparation and planning in line with Decommissioning Plan(s)
- Where necessary, deburial of the cables ahead of cable recovery
- Cutting of the offshore cables via ROV or grapnel

- Recovery of one end of the cable onto a vessel fitted with recovery equipment
- Recovery of the cable in large lengths
- Cutting of the offshore cable once the recovery vessels has reached full capacity
- Transport of the cable to an appropriately licensed onshore waste management and recycling facility

1.7 Environmental Control Plans

Onshore Environmental Control Plans

1.7.1 The Onshore Decommissioning Plan would include a range of environmental control plans to minimise the impact of decommissioning on the onshore environment. The range and extent of these plans would be assessed following an EIA performed contemporaneously with the drafting of the Decommissioning Plan.

1.8 Monitoring Plan(s)

1.8.1 A monitoring plan(s) would be developed as part of the Decommissioning Plan(s) to monitor the performance of environmental mitigation and measures implemented during decommissioning. The plan would be based on the monitoring principles set out in the ES and would reflect all mitigation requirements as set out in the ES, and any other relevant licences/consents.

1.8.2 The objective of the monitoring would be to:

- Determine if the environmental measures have achieved or are achieving their intended purpose
- Identify any successes, failures or weaknesses in the implementation of those measures
- Identify remedial measures required to achieve the environmental requirements
- To ensure that the agreed environmental commitments as set out within the Decommissioning Plan(s) are being implemented.

Inspections

1.8.3 Monitoring of site operations with respect to environmental protection would be carried out on a regular basis. The extent of inspections would be confirmed in the Decommissioning Plan..

1.9 Environmental Records

1.9.1 All environmental documents and records would be maintained and stored within the Applicant's data management system. Key environmental documentation would be maintained in their most current version.