NATIONAL GRID ELECTRICITY TRANSMISSION PLC

NGET PROJECT SPECIFIC SCOPE

(HV CABLE & SUBSTATION)

(Penrhos 132kV Substation Rebuild)

October 2024

VERSION 3

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Introduction

This Project Specific Scope document contains information, of a technical nature, relating to the National Grid Electricity Transmission Specific Project, which shall be read in conjunction with the Generic Scope document.

The *Client* reserves the right to amend the enclosed information if it considers it necessary or prudent to do so regarding a particular Project. This shall not prejudice the *Client's* rights or duties in respect to any current Projects nor shall it be taken as an indication of the *Client's* future intentions, unless otherwise stated.

Defined terms used in this document are identified as follows:

- Contract Data (in italics): *Client, Contractor, Project Manager, Supervisor*
- ECC terms (Capital Initials): Plant, Equipment, Site, Working Area etc.
- **Note:** National Grid **Safety Rules** and Guidance document contains defined terms in bold text for example **System, Equipment and Danger, Senior Authorised Person** in the definitions section (D).

1. Description of the Works

1.1 Project objectives

To establish a 132kV GIS substation at Penrhos with accompanying cable route capable of withstanding 390MVA nominal rating.

To facilitate the connections of an IDNO substation (with embedded generator) and a directly connected generation customer.

1.2 Description of the works

Stage 1 Scope of Work:

- GIS design to a position where an order can be placed
- Place order for GIS plant (8 bays)
- Protection & Control (P&C) design to a point where order of Protection & Control panels can be placed
- Place order of Protection & Control Panels
- Progress the design for the new GIS substation and cable routes to a point where the contractor can submit a target price and costed programme for the Option C Stage 2 contract

Stage 2 Scope of Work:

- To build a new 132kV indoor Gas Insulated Switchgear (GIS) substation with a double busbar configuration on the former Anglesey Aluminium site, located approximately in the same location where the old Penrhos Air Insulated Substation (AIS) used to be situated. This new 132kV GIS substation will serve as the infrastructure for the installation of the following new circuits:
    - Two 132kV NG feeder circuits – Wylfa and Caergeiliog-Wylfa
    - Two 132kV Customer cable feeder circuit – Eclipse Power Networks 1, 2
    - One 132kV Bus Coupler
    - One 132kV Customer cable feeder circuit – MMML
    - Two 132kV Bus Sections
    - Spare capacity for Two future 132kV circuits
- To replace existing oil filled cables between tower EV86 and new Penrhos substation with new XLPE cables.
- To install fibre Optic cables along with 132kV power cables between Penrhos and tower EV86.
- OHL works associated with the re-connection of new cables at tower EV86 and commissioning of the full EV route.
- All works to be delivered in accordance with ‘CDS Penrhos 132kV – Rev 03’ (Appendix A)

2. General Constraints on how the *Contractor* provides the Works

General Constraints

No further information than that stated in the Generic Scope or higher.

2.1 Access to Site

The site is owned by Anglesey Land Holdings and leased to NG. Access will be provided to the contractor to the working area as of the First Site Access date specified in Contract Data Part 1.

2.2 Primary Consents

The substation works within the boundary of the old Anglesey Aluminium site are classed as Permitted Development.

The Client will confirm Permitted Development Rights for the underground cables upon further details of the proposals from the Contractor.

The Client will be responsible for any exemption notifications required under the Electricity Act.

2.3 Secondary Consents

The following is in addition to that stated within the NGET Generic Scope.

Heritage Consents

The *Client* will apply for Scheduled Monument Consent and any Listed Building Consents required.

The *Contractor* shall adhere to the method of construction submitted within the Scheduled Monument Consent and Listed Building Consent applications. The methods will be discussed and agreed prior to the application submissions. The *Client* is to administer the discharge of any conditions as appropriate, but it is the responsibility of the Contractor to comply with and provide all information required in a timely manner to the Client to discharge the conditions. Timescales are to be agreed between the Client and Contractor.

Habitat Regulation Assessment Screening/Appropriate Assessment

The *Client* will be responsible for undertaking Habitat Regulation Assessment (HRA) Screening and Appropriate Assessment if required. The *Contractor* shall adhere to the method of construction submitted within the screening and assessment. The methods will be discussed and agreed prior to the application submissions. The *Contractor* shall adhere to any conditions on the project under these consents.

All other secondary consents are the responsibility of the *Contractor* to obtain and could include but may not be limited to:

- Any protected species licences as required;
- Requirements as defined by Natural Resources Wales including licence to affect, or the translocation of protected species and habitats;

- Hedgerow Removal Notices;
- Notification for any work adjacent to a SSSI, or SSSI assent for any works within a SSSI;
- Temporary closure of diversion of Public Rights of Way (PROW) (traffic regulation order);
- S278 highways agreement for road works;
- Any notifications/consents required under the Highways Act or NRSWA for example:
    - Section 59 of the Highways Act (1980)
    - Section 135A of the Highways Act (1980)
    - Sections 169 of the Highways Act (1980)
    - Section 171 of the Highways Act (1980)
    - Section 172 of the Highways Act (1980)
    - Section 173 of the Highways Act (1980)
    - Section 174 of the Highways Act (1980)
    - Section 177 of the Highways Act (1980)
    - Section 178 of the Highways Act (1980)
    - Section 184 of the Highways Act (1980)
    - Section 50 of the New Roads and Streetworks Act (1990)
    - Section 54 of the New Roads and Streetworks Act (1990)
    - Section 55 of the New Roads and Streetworks Act (1990)
    - Section 14 (1) of the Road Traffic Regulation Act (1984)
    - Schedule 14 of the Traffic Signs Regulations and General Directions (2016)
    - Schedule 9 of the The Road Vehicles (Authorisation of Special Types) (General) Order 2003-
- Section 61 (Control of Pollution Act 1974);
- Notice of street works;
- Sustainable Drainage Systems (SuDS) application for SAB Approving Body (SAB) approval;
- Flood risk activity permit;
- Land drainage consent - ordinary watercourse within internal drainage district (IDD);
- Abstraction licenses, discharge consents or transfer licences; and
- Any planning applications required for temporary accesses and bellmouths.

The Contractor shall be responsible for obtaining the secondary consents including the payment of any fees required. The *Contractor* shall comply with all secondary consent conditions.

2.4 Access and Egress

The site is located around an industrial area local to the Holyhead Port and therefore access via the local road network is favourable to haulage vehicles. It is recommended the gate located at the Southern boundary of the site is used for vehicular access.

Access for the cable works via existing easements shall be confirmed by NGET Lands team.

2.5 Occupied Premises and Users

One of the Client's customers will be delivering works to install an IDNO 132kV substation adjacent to the new NGET substation. There is sufficient space on site to separate the respective working areas however co-ordination will be required between the Contractor and relevant 3rd parties prior to and during the construction phase.

2.6 Working Hours

No further information than that stated in the Generic Scope or higher.

2.6.1 Working Hours Specific to OHL Works

Not Applicable

2.7 Consideration of Others

The substation works will require general coordination with Others delivering projects on the existing Anglesey Aluminium compound. It is suggested bi-monthly coordination calls are held between the Client, the Contractor and other key stakeholders on site during the construction phase to identify any potential hazards and interfaces.

The 132kV cable route crosses public highways, runs along the Stanley Embankment parallel to the A5 and crosses 3rd party land before Tower EV86. The contractor shall devise a strategy to minimise the disruption to the public for the duration of these works.

2.7.1 Community Relations KPIs

No further information than that stated in Site Information

2.8 Condition Survey

No further information than that stated in Site Information

2.9 Emergency Return to Service (ERTS) Requirements

Not Applicable

3. Programme

The project specific reference number provided in the Project Scope shall be used for all communication with the *Client* post contract award and will contain a unique Project ID and Project Name.

The Activity Schedule shall form the basis of the programme and shows how each activity on the Activity Schedule relates to the operations on each programme submitted for acceptance.

The agreed Organisation Identifier must be applied as a suffix to the Project ID; this can be provided in the Contract Data, e.g., 123456-123456-Organisation Identifier.

If no Programme is included in Contract Data Part 2, the *Contractor* shall submit the first programme for acceptance within 4 weeks from the Contract start date.

3.1 Programme Requirement

A Primavera P6 programme to be submitted using the *Client's* P6 cloud portal, and to the Project Manager, using the *Client's* nominated communication system, in the format of PDF and native file. The *Contractor* must budget load the programme.

3.2 Information Required

Mid-Month Programme Review

The *Contractor* shall attend a mid-month programme review session. As a minimum, the *Contractor* Project Manager and Planning Engineer will be expected to attend, but other key job roles (such as *Lead Designer, Site/Construction Manager* etc.) may also be required at the *Client's* request.

The purpose of this session is to review progress on the project to date, including progress achieved in the first half of the monthly cycle. This session can be led via a draft updated programme, or by utilising the progress spotlight function in P6 to carry out a review of progress. This session should cover, as a minimum;

- Progress in month to date.
- Any slippage in month, with plans to recover where required.
- Overall programme position to date vs. baseline (including review of earned value metrics)
- Any planned changes in sequencing since previous submission.
- Key upcoming activities
- Key plant/resource requirements
- Pending compensation events that may impact programme.

3.3 Revised Programme

The *Contractor* shall submit a revised programme monthly in the format of both native planning tool file and PDF via the *Client*'s nominated contract management system. This shall be accompanied with an explanation of changes. Each submitted programme shall use the 1st day of the calendar month at 00:00 as the data date. The programme shall be progressed to D (First working day of the month), Updated programmes shall be available in the *Client's* systems at D-2 @ 17:00.

3.4 Key Milestones

The *Contractor* shall include the following key dates as milestones within their programme. The *Contractor* shall include these activities within the programme and group them in the same manner shown in the table below.

Key Milestone description	**Constraint**
Key Date 1 - Contract start-up activities complete. • Provision of a programme compliant with the Scope. • Quality Plan submitted to the *Project Manager* for acceptance. • Submission of detailed drawing schedule. • Confirmation of project team, including a project organogram showing key persons identified. • Notification to the *Project Manager* of proposed surveys and survey plan. • Manufacturing Assurance Plan submitted to *Project Manager.*	No later than 4 weeks from the Contract *start date*
Key Date 2 - Early-stage documentation complete: • Procurement plan submitted, including all FAT dates as required. • Proposed subcontracts submitted to the *Project Manager* for acceptance. • Type registration programme (if applicable) submitted to the *Project Manager.* • Resource, Plant and Materials schedules issued to the *Project Manager*.	No later than 12 weeks from the Contract *start date*
Key Date 3 - Pre-Site start activities complete: • All drawings and schedules for working areas, temporary works and access routes submitted. • Construction Phase Plan submitted to the *Project Manager* for acceptance. • Risk Assessment and Method Statements to be provided to the *Supervisor* and the *Project Manager*. • Subcontractor nominations submitted to the *Project Manager* for acceptance. • All key 3rd party licences/assents applied for (e.g. Natural England/NWR/EA/etc). • Site compound location identified and agreed with all necessary agreements in place (OHL only).	No later than 6 weeks prior to work commencing on the Site

Key Milestone description	Constraint
Key Date 4 - Preparation for Site mobilisation complete: • Design packs complete and drawings accepted and marked "For Construction". • Provision to the *Project Manager* of the plans and arrangements for Site mobilisation. • All required Pre-Site start documentation accepted by the *Project Manager* • All Subcontractors nominated and accepted by the *Project Manager* • Competency matrix for all operatives and Subcontractors submitted to the *Project Manager*	No later than 4 weeks prior to work commencing on the Site
Key Date 5 - Operational readiness: • All welfare facilities installed, inspected and approved in accordance with CDSM017 (Site Welfare, Offices and Accommodation Inspection) • Resources in attendance in accordance with the accepted resource schedule • Successful Completion of GIS HV Test – 132kV Substation	No later than 1 week prior to work commencing on the Site
Key Date 6 - Final documentation submitted: • Submission of all closure documents as required under the contract and Scope.	Completion Date (no later than 12 weeks following completion of work on Site)

4. Design Management

The design management process is defined in NG/ET/SR188 Design Management.

4.1 Design Requirements

No further information than that stated in the Generic Scope or higher.

4.1.1 Design Responsibility

No further information than that stated in the Generic Scope or higher.

4.1.2 Design Coordination

No further information than that stated in the Generic Scope or higher.

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4.1.3 Design Submission Process

No further information than that stated in the Generic Scope or higher.

4.1.4 Design Approval from Others

No further information than that stated in the Generic Scope or higher.

4.2 Construction Design Specification: Substation (CDS-SUBS)

Please refer to Appendix A.

4.3 Construction Design Specification: Protection, Control and Telecoms (CDS-PCT)

Please refer to Appendix A.

4.4 Construction Design Specification: Civil (CDS-CIV)

Please refer to Appendix A.

4.5 Construction Design Specification: Overhead Lines (CDS-OHL)

Please refer to Appendix A.

4.6 Construction Design Specification: Cable (CDS-CAB)

Please refer to Appendix A.

5. Client's Work Specification and Drawings

5.1 Applicable Standards

No further information than that stated in the Generic Scope or higher.

5.1.1 Technical Specifications (TS/NGTS)

No further information than that stated in the Generic Scope or higher.

5.1.2 Transmission Procedures (SR)

No further information than that stated in the Generic Scope or higher.

5.1.3 Design Handbooks (DH)

No further information than that stated in the Generic Scope or higher.

5.1.4 Commissioning Handbooks (CH)

No further information than that stated in the Generic Scope or higher.

5.1.5 Site Commissioning Test Schedules (SCT)

No further information than that stated in the Generic Scope or higher.

5.1.6 National Grid Safety, Health and Environmental (SHE) Procedures

No further information than that stated in the Generic Scope or higher.

5.1.7 Safety Rules and National Safety Instructions (NSI)

No further information than that stated in the Generic Scope or higher.

5.1.8 Technical Guidance Notes (TGN)

No further information than that stated in the Generic Scope or higher.

5.1.9 Other Documents

No further information than that stated in the Generic Scope or higher.

5.1.10 Type Registration

No further information than that stated in the Generic Scope or higher.

5.2 Drawings

Please refer to FEED drawings in Appendix B

6. Working with the *Client* and Others

Contractors employed by Recell Energy Ltd will be constructing a new 132kV substation and BESS site adjacent to the new Penrhos 132kV substation.

A further generation customer Mentor Mon Morlais Ltd will be bringing their cable into Penrhos 132 kV substation from the East of the site.

SPEN will be installing a new DNO substation to upgrade the site's LVAC capacity.

For each of these schemes the interface points will be the cable entries into the NGET Penrhos 132kV substation.

6.1 Sharing the Working Areas with Others

Whilst the wider site arrangement allows all Party's working areas to be separated by CDM boundaries the Contractor may be required to co-operate with Others during the peak construction phase e.g co-ordinating deliveries.

6.2 Authorities and Utilities providers

SPEN are required to upgrade the LVAC supply to the site. These works will be managed by the Client

7. Management of the Works

The *Contractor* shall be responsible for the complete management of the Works including those of its subcontractors and those within their CDM area. The *Contractor* shall comply with the *Clients* processes and requirements on Site Management detailed in NG/ET/SR163 Management of the Works.

7.1 Photographic Records

The *Contractor* is responsible for providing documented evidence on the condition of Site prior to any activities commencing, during site activities and following completion at Site (including proposed access and egress routes). Copies of all documented evidence shall be submitted to the *Project Manager* at each stage of the Works.

These shall include, but not be limited to, the following photographic records:

a) General condition of existing site and surrounding area including, public highways, site access roads, etc. prior to Site Establishment and following Site De-mobilisation,

b) All Site works, not visible after reinstatement, prior to reinstatement,

c) Work activity Hold and Notification points identified within the *Contractor's* Inspection and Test Plan(s), prior to and following that relevant activity,

d) All Temporary Work activities (e.g., scaffolding, excavations, transformer movements, etc.)

e) Agreed Defects prior to and following remedial action,

f) Ratings/name-plates for all Plant and Materials which are to be installed/erected, prior to installation/erection; and,

g) Weekly general views of the construction site(s) from specific locations agreed by the *Project Manager.*

The *Contractor* is responsible for providing a schedule of condition including photographic records for all existing structures and services that relate to the Works and shall be agreed with the *Project Manager* and any relevant parties.

All photographs shall be provided digitally in colour with a minimum resolution size of 300dpi, date and time stamped with a clearly defined file title/description.

Unless agreed otherwise by the *Project Manager* all photographs shall be kept confidential to the *Client* to maintain security of Plant and Materials and the sites/locations.

The *Contractor* shall provide additional photographs as identified in the Project Specific Scope document.

The *Contractor* is responsible for providing photographic evidence in the event of a Compensation Event (CE). Should a CE not be supported by photographic evidence where it could have been, this will be taken into account when assessing the value of the CE.

7.2 Installation, Operation and Maintenance Documentation (IOM)

The *Contractor* shall be responsible for ensuring that an Installation, Operation and Maintenance (IOM) document is available on delivery of Plant and Materials at Site.

The *Contractor* shall formally submit the IOM documentation to the *Project Manager* a minimum of four (4) weeks prior to Stage 1 Commissioning. Documentation shall be specific to the Equipment supplied; common documents containing multi-site information shall not be accepted.

The *Contractor* shall formally submit to the *Client* all Operating & Maintenance Manuals in electronic format (pdf).

The *Contractor* shall formally submit to the Occupier all Operating & Maintenance Manuals in hard copy or electronic format (pdf).

Where the *Client* currently holds IOMs and work has been carried out which involves changes to the installed equipment, then the original IOMs shall be replaced by an updated version by the *Contractor*. This shall incorporate any part of the existing IOMs which are still applicable. In the event that IOMs are not available then the *Contractor* shall be responsible for the provision and submission to the *Client.*

The IOMs for each Overhead Line route (or part thereof), shall contain the following information:

i) Type, code number and description of all plant erected, together with names and addresses of each manufacturer,

ii) Methods of assembly of all fittings,

iii) Method of replacing any part of the plant including the use of maintenance holes provided on the support, access provisions and, where appropriate the application of 'live-line' maintenance techniques,

iv) Recommendations for preventative maintenance including frequency of inspections,

v) List of recommended maintenance equipment with a description of its use and limitations,

vi) Type and application of temporary earthing equipment; and,

vii) Personal safety equipment requirements and any risk assessments required.

Drawings and diagrams shall be used where necessary to enable the *Client* to maintain the Site on completion of the Works.

The manual(s) shall be in an electronic format and shall form part of final records.

7.3 Asset Technical Data

The *Contractor* shall be responsible for providing to the *Client* both Technical and Financial information for all assets that are provided, modified, or removed.

This area is covered in more detail in NG/ET/SR106 Equipment Commissioning and Decommissioning and contains specific forms and schedules relating to different Plant and Material (post commissioning defined as equipment) groups i.e., OHL, HV Cables and Substation. The following includes the major elements of required data but is not limited to:

a) Asset Data Template (ADT)

The *Contractor* shall validate the ADT and provide any required supporting documentation within the contractual period of reply.

b) Technical Data Workbook (TDW)

The *Contractor* shall populate the Technical Data Workbook within the contractual period of reply. This includes submitting serial numbers for all the identified assets.

c) Asset Financial Data

The *Contractor* shall provide costs and/or percentage splits for all the assets on the TDW prior to Available for Commercial Load (ACL).

d) Geospatial Data

The *Contractor* shall submit geospatial data of any new assets installed or existing assets that have been moved to the *Client* no later than four (4) weeks after ACL. These should be provided in a format viewable within ArcMap, for example in shapefile or file geodatabase format and be in either the British National Grid or OSGB-GPS-2015 coordinate system, any other coordinate system should be noted in the metadata or a readme file.

7.4 Cost Reporting (Delivery)

A CVR detailing Defined Costs and Forecasts (jointly totalling the ECC) for the current reporting month shall be submitted to the Project Manager by the *Contractor* for validation at D-10. Submissions must be in the CVR format at Appendix A.2 to the Generic Scope.

7.5 Project Handover Documentation

The *Contractor* shall, where practicable, ensure that all documentation is provided in an electronic format i.e., PDF, DWG, etc. and shall be produced in the English Language. Where it is not practicable, the *Contractor* shall seek agreement from the *Project Manager* that the documentation can be submitted in hard copy. This documentation shall be of a quality that is suitable for Digital Scanning and provided in Ring Binders (four-hole types).

7.5.1 Route Maps

Overhead Line and HV Cable Site Access Maps

The *Contractor* shall maintain a set of Maps covering the complete Overhead Line Route upon which are marked Site Access Routes.

The Map shall be sufficiently detailed to make clear any restrictions or requests that may apply to the use of these Accesses. The Maps can be supplemented with a table explaining in greater detail the restrictions applicable to any Access together with any other pertinent information. Sketches should also be produced if they would further clarify any access situation.

The Maps shall be kept updated throughout the progress of the Works and copies supplied to the *Client* each time a new revision is produced.

Overhead Line and HV Cable Proximity Schedule of Underground Services

The *Contractor* shall be responsible for maintaining, throughout the Works, a Proximity Schedule showing all relevant underground features in close proximity to the Overhead Line Route. Where applicable this information shall be shown on the Site Access Maps.

Overhead Line Route Maps

The *Contractor* shall record on a set of the latest issue of Ordnance Survey Maps of approved scale such particulars as will allow an accurate reference to be made afterwards in case of any projected modifications to the Overhead Line.

The Map sheet shall show the exact position of every support with approved reference marks. The Maps shall be supplemented, unless profiles are marked, by sketches where necessary, to delineate boundary positions of supports which cannot be clearly indicated on the Maps. Overhead Line Tower Numbers, including Route Identification Codes, shall be added adjacent to each Overhead Line Tower, including a note indicating if a Fibre Optic Joint Box is mounted upon it.

When any Map has, a Substation located upon it this should be shown accurately and its Name and Voltage added. When any Overhead Line reaches the edge of any Map sheet, then the Name and direction of the next Substation along the Overhead Line shall be shown. This shall include all Overhead Line recorded by Ordnance Survey except that Overhead Line belonging to other authorities shall state Owner's Name only.

Requirements above apply equally to both new and existing Overhead Line Routes.

Overhead Line Schedule(s)

Not Applicable

Insulator Sets, Conductor and Earthwire Systems (Including OPGW)

The *Contractor* shall prepare route specific insulator set drawings and conductor and earthwire sub system drawings which shall eventually form part of the final records. Drawings shall be based on the Type Registered solution and shall refer to the allocated EGI code. All drawings shall be fully dimensioned.

Wire Clearance Diagrams

Generic wire clearance diagrams shall be provided for each tower type used on the Works where they do not already exist. Drawings shall be in accordance with NG/ET/SR135 Drawing Management. A search shall first be made with ECM to determine whether a 'generic' wire clearance diagram for the relevant tower/conductor configuration already exists.

In the case of terminal, tee-off or junction towers, a site-specific clearance diagram shall be provided for the actual conditions of installation. Each circuit and phase shall be identified clearly to prevent misunderstanding.

All items comprising the arrangement shall be listed in full together with details of the quantity, manufacturer, material, drawing numbers etc., unless these are fully covered elsewhere. In this case a cross reference to the source shall be given instead. Where not specifically provided for elsewhere, copies of all drawings shall be submitted.

Downlead arrangements should also be provided, and these shall include the connection onto the substation equipment or sealing end platform as appropriate including any cable support steelwork.

Included on each wire clearance diagram shall be details of the insulator set length, conductor type, the stringing basis, and a table of clearances.

The jumper loop shall be shown together with details of any insulator strings, counterweights, jumper stiffeners, joints, and spacers. The minimum bending radius and / or stiffness of the conductor shall be taken into account when preparing the shape of the jumper loop. Swung jumper loops shall be shown by dotted line. The type of jumper terminal i.e., straight or 30° angle shall be included. Any other items used e.g., quad to twin connector plates, shall also be shown.

The 3-D model used to develop the wire clearance diagrams shall also be submitted as part of the Final Record to facilitate ease of future amendments.

Substation Line Entries

Drawings shall be provided showing all the line entries into a substation, irrespective of owner or project, to reduce the numbers of similar drawings. For each of the *Client's* overhead lines, shown on the drawing, the following data shall be provided:

- Route ID and tower number,

- Designation of each circuit,
- Designation of each phase with phasing arrangement,
- Design specification for each tower; and,
- Tower types and extensions.

For lines belonging to other authorities, the name of the owner only needs to be shown.

The drawings shall be sufficiently dimensioned to enable the locations of all towers to be clearly defined in relation to each other and the substation without recourse to a site visit.

For existing line routes, there may be a number of drawings available, each showing a separate series of lines. These should be combined onto one drawing, including any missing data, some of which shall be provided by the *Client* from third parties.

Overhead Line Profile Drawings

Not Applicable

7.6 Health and Safety File Information

The *Contractor* shall develop and manage all necessary Health and Safety File Information in accordance with NG/ET/SR163 Management of the Works, including the remaining Hazards identified in the Hazard Register and ensuring suitable documentation is available for handover to the *Client.*

All such information shall be included within the Handover Documentation/Health and Safety File in accordance with the requirements of NG/ET/SR163 Management of the Works and, where applicable, the relevant Framework Agreement.

7.7 Meetings

The *Contractor* shall refer to NG/ET/SR163 Management of the Works for the *Clients* minimum requirements on meetings.

7.8 Accounts & Records

The *Contractor* is required to comply with the financial records and account procedures issued by the Financial Reporting Council.

8. Services and other things to be provided

No further information than that stated in the Generic Scope or higher.

8.1 Services and other things provided by the *Contractor* for the use by the *Client*, *Project Manager*, *Supervisor* or Others

No further information than that stated in the Generic Scope or higher.

8.2 Services and other things to be provided by the Client

No further information than that stated in the Generic Scope or higher.

9. Safety, Health, Environment and Sustainability

This section addresses Safety, Health and Environment and Sustainability (SHES) issues and is intended to convey PCI information provided by the *Client*, to the Principal Designer, Principal Contractor or Contractors (referred to here as '*Contractor*'), and their subcontractors and others during the project lifecycle. The *Client*'s requirements are supplementary to the requirements of legislation.

The *Contractor* shall work to, as a minimum, in accordance with industry standards for SHES as set by the Regulators, including the Health and Safety Executive (HSE), Environmental Regulators, Competent Authorities, and Industry bodies. The *Contractor* shall apply, as a minimum standard, the guidance provided in HSE Approved Codes of Practice and HSE Guidance (ACOP) and Environment Agencies guidance where it is best practice to do so.

9.1 Health and Safety Requirements

No further information than that stated in the Generic Scope or higher.

9.1.1 Safety Leadership

No further information than that stated in the Generic Scope or higher.

9.1.2 Communication and Consultation

No further information than that stated in the Generic Scope or higher.

9.1.3 *Client's* Safety Communication

No further information than that stated in the Generic Scope or higher.

9.1.4 Health, Safety and Environment Notice Boards

No further information than that stated in the Generic Scope or higher.

9.1.5 Subcontractor Performance

No further information than that stated in the Generic Scope or higher.

9.2 SHE Management Plans

No further information than that stated in the Generic Scope or higher.

9.3 Method statement, Risk Assessments and Safe Systems of Work

No further information than that stated in the Generic Scope or higher.

9.3.1 Safe Systems of Work

No further information than that stated in the Generic Scope or higher.

9.3.2 *Contractor's* Work Permit Management Systems

No further information than that stated in the Generic Scope or higher.

9.3.3 The use of Radio Detection Cable Avoidance Tool

No further information than that stated in the Generic Scope or higher.

9.3.4 Excavations

No further information than that stated in the Generic Scope or higher.

9.3.5 Impressed Voltage (IV)

No further information than that stated in the Generic Scope or higher.

9.3.6 Asbestos

No further information than that stated in the Generic Scope or higher.

9.3.7 Scaffolding

No further information than that stated in the Generic Scope or higher.

9.4 Training and Competency

No further information than that stated in the Generic Scope or higher.

9.4.1 Training and Competency of the *Client's* Staff

No further information than that stated in the Generic Scope or higher.

9.5 Hazard Substances and Physical Agents

No further information than that stated in the Generic Scope or higher.

9.6 Occupational Health and Drugs & Alcohol

No further information than that stated in the Generic Scope or higher.

9.7 Personal Protective Equipment

No further information than that stated in the Generic Scope or higher.

9.8 Incident Reporting

No further information than that stated in the Generic Scope or higher.

10. Environmental Management

No further information than that stated in the Generic Scope or higher.

11. Sustainability

No further information than that stated in the Generic Scope or higher.

12. Quality Management

No further information than that stated in the Generic Scope or higher.

13. Equipment Commissioning and Decommissioning

13.1 Tests and inspections

No further information than that stated in the Generic Scope or higher.

13.1.1 Software Provision

No further information than that stated in the Generic Scope or higher.

13.1.2 Commissioning Programme

No further information than that stated in the Generic Scope or higher.

13.1.3 Acceptance Testing Requirements

No further information than that stated in the Generic Scope or higher.

13.1.4 Acceptance Testing Resources

No further information than that stated in the Generic Scope or higher.

13.1.5 Protection and Automatic Switching Schedules

No further information than that stated in the Generic Scope or higher.

13.2 Management of Tests and Inspections

No further information than that stated in the Generic Scope or higher.

13.3 Covering up Completed Work

No further information than that stated in the Generic Scope or higher.

13.4 Type Registration

No further information than that stated in the Generic Scope or higher.

13.5 Decommissioning of Redundant Assets

No further information than that stated in the Generic Scope or higher.

13.5.1 *Client's* Requirements for the Retention of Decommissioned Redundant Assets

No further information than that stated in the Generic Scope or higher.

14. Construction (Design and Management) Regulations

No further information than that stated in the Generic Scope or higher.

15. Subcontracting

No further information than that stated in the Generic Scope or higher.

15.1 Restrictions or requirements for subcontracting

No further information than that stated in the Generic Scope or higher.

15.2 Acceptance Procedure

No further information than that stated in the Generic Scope or higher.

16. Completion

16.1 Introduction

Prior to hand-over, the *Contractor* shall submit to the *Client* a technical completion statement clearly stating that the Works have been designed and constructed to meet the functional performance characteristics specified for the required design life.

16.2 Pre-Completion Arrangements

The *Client* operates a formal commissioning process for Plant and Materials to be added to the Transmission System. This process is detailed within NG/ET/SR106 Equipment Commissioning and Decommissioning and the *Contractor* shall make provisions for the appropriate staff and equipment to assist in this process.

16.3 Final Clean

The *Contractor* shall ensure that final reinstatement of all Works after the construction work is completed, suitably documented and evidence provided to the *Client*.

This shall include, but not be limited to:

- Removal of all construction Equipment, unused Plant and Materials, temporary works site establishment including temporary services,
- Reinstatement of Highways access points unless required by the final design,

- Reinstatement of Cable/Overhead Line route to agreed final condition with grantors,
- Provision of any required landscaping determined in the planning requirements,
- Reinstatement of any hedgerows, stock fences/gates etc. removed during construction,
- Cleaning of local highways, private roads or access tracks used during the Works, and
- Photographic Records.

16.4 Completion Certificate

The *Contractor* shall formally submit (via Fast Draft) an application for handover of partial or full Works completion, following acceptance of the *Contractor's* technical completion statement to the *Project Manager*.

16.5 Correcting Defects

The *Contractor* shall refer to NG/ET/SR241 Quality Assurance and Manufacturing Assurance procedure and the applicable framework agreement (section 43 of Core Clauses: Searching for and Notifying of Defects).

17. Acceptance (Option C)

No further information is provided from that stated in the Generic Scope or higher.

17.1 Procurement Procedures

No further information than that stated in the Generic Scope or higher.

17.2 Submission and Acceptance Procedures

No further information than that stated in the Generic Scope or higher.

18. Accounts and records (Option C)

No further information is provided from that stated in the Generic Scope or higher.

19. Parent company guarantee (Option X4)

Not used in-line with Framework Agreement.

20. Undertakings to the Client or Others (Option X8)

Not applicable to this project.

20.1 Undertakings to Others

Not applicable to this project.

20.2 Subcontractor undertakings to Others

Not applicable to this project.

20.3 Subcontractor undertakings to the *Client*

Not applicable.

21. Transfer of rights (Option X9)

Not applicable.

21.1 *Contractor's* rights over material prepared for the design of the works

Not applicable.

21.2 Other rights to be obtained by the *Contractor*

Not applicable.

22. Information modelling (Option X10)

Not applicable to this project.

22.1 Information Model requirements

Not applicable to this project.

23. Performance bond (Option X13)

Not applicable to this project.

24. Advanced payment to the *Contractor* (Option X14)

Not applicable to this project.

25. The *Contractor's* design (Option X15)

Not applicable.

26. Retention (Option X16)

If Option X16 is used, the *Contractor* provides a retention bond in the form set out in Schedule 19 of the Framework Agreement.

27. Low performance damages (Option X17)

Not applicable.

27.1 Performance requirements

Not applicable.

28. Early Contractor involvement (Option X22)

The Project is to be divided into two stages. The driver for this is to compress the procurement timescales and allow the Contractor to tender for the Stage 2 Works in parallel to the design and procurement activities of Stage 1.

28.1 Stage One and Two

Stage One (ECI Phase)

- GIS design to a position where an order can be placed
- Place order for GIS equipment (8 bays)
- Protection & Control (P&C) design to a point where order of Protection & Control panels can be placed
- Place order of Protection & Control Panels
- Progress the design for the new GIS substation and cable routes to a point where the contractor can submit a target price and costed programme for the Option C Stage 2 contract

Stage Two (Delivery Phase)

To build a new 132kV indoor Gas Insulated Switchgear (GIS) substation with a double busbar configuration on the former Anglesey Aluminium site, located approximately in the same location where the old Penrhos Air Insulated Substation (AIS) used to be situated. This new 132kV GIS substation will serve as the infrastructure for the installation of the following new circuits:

  - Two 132kV NG feeder circuits* – Wylfa and Caergeiliog-Wylfa
  - Two 132kV Customer cable feeder circuit – Eclipse Power Networks 1, 2
  - One 132kV Bus Coupler
  - One 132kV Customer cable feeder circuit – MMML
  - Two Bus Sections
  - Spare capacity for Two future 132kV circuits

- To replace existing oil filled cables between tower EV86 and new Penrhos substation with new XLPE cables.

- To install fibre Optic cables along with 132kV power cables between Penrhos and tower EV86.
- OHL works associated with the re-connection of new cables at tower EV86 and commissioning of the full EV route.
- All works to be delivered in accordance with 'CDS Penrhos 132kV – Rev 02' (Appendix A)

28.2 Budget

The budget shall include the following:

Stage One (ECI Phase)

- GIS design to a position where an order can be placed
- Place order for GIS equipment (8 bays)
- Protection & Control (P&C) design to a point where order of Protection & Control panels can be placed
- Place order of Protection & Control Panels
- Progress the design for the new GIS substation and cable routes to a point where the contractor can submit a target price and costed programme for the Option C Stage 2 contract

Stage Two (Delivery Phase)

To build a new 132kV indoor Gas Insulated Switchgear (GIS) substation with a double busbar configuration on the former Anglesey Aluminium site, located approximately in the same location where the old Penrhos Air Insulated Substation (AIS) used to be situated. This new 132kV GIS substation will serve as the infrastructure for the installation of the following new circuits:

  - Two 132kV NG feeder circuits* – Wylfa and Caergeiliog-Wylfa
  - Two 132kV Customer cable feeder circuit – Eclipse Power Networks 1, 2
  - One 132kV Bus Coupler
  - One 132kV Customer cable feeder circuit – MMML
  - Two Bus Sections
  - Spare capacity for Two future 132kV circuits
- To replace existing oil filled cables between tower EV86 and new Penrhos substation with new XLPE cables.
- To install fibre Optic cables along with 132kV power cables between Penrhos and tower EV86.
- OHL works associated with the re-connection of new cables at tower EV86 and commissioning of the full EV route.
- All works to be delivered in accordance with 'CDS Penrhos 132kV – Rev 02' (Appendix A)

28.3 Stage One milestones and deadlines

Not applicable to this project.

28.4 Pricing Information

28.5 Total of the Prices

Total of the Prices is to be populated in the format as presented in the Activity Schedule titled “Penrhos Tender Pricing Document- Subs & Cables Stage 1&2’. Separate Activity Schedules for Stage One and Two shall be prepared, with the activity schedule for Stage Two being refined over the course of Stage One and finalised as part of the Stage One deliverables. The Total of the Prices for Stage One shall become a line item in the Activity Schedule for Stage Two

28.6 Agreement of the Prices for Stage Two

Refer to Framework Clause X22.5 Notice to Proceed to Stage two.

28.7 Stage One design submission procedures and acceptance criteria

No further information than that stated in the generic scope or higher

28.8 Stage One Client requirements

he required deliverables for Stage One and Two are set out in Section 28.1.

28.9 Stage One design approval from others

Not applicable to this project.

28.10 Stage One performance requirements

Not applicable to this project.

29. Project Bank Account (Option Y(UK)1)

Not applicable to this project.

29.1 Adding a Supplier under Y(UK1)

Not applicable to this project.

Table A (Digital Links)

Link	Document Title:	Completed / Provided by:

Appendices

Appendix:	Document Title:	Completed / Provided by:
A	Penrhos 132kV CDS	Clive Nunn
B	Penrhos 132kV SDS	Saran Selvaraj
C	Penrhos 132kV OTS FRS	Saran Selvaraj
D	FEED Drawings	Clive Nunn

Document Control

Issue	Date	Summary of changes/reasons	Author(s)	Authorised by	Approved by
V1.0	19/09/2023	First draft	Elliot Hobbs		
V2.0	21/06/2024	Updated copy	Elliot Hobbs		