

Pre-Qualification Questionnaire

Port of Felixstowe

TC01353 Primary Substation & HV Route – Professional Engineering Services

Project Description

1. Introduction

Freeport East is one of 12 freeports in the United Kingdom, positioned on the east coast of England and encompassing parts of Suffolk and Essex. Freeport East is anchored around three main development sites that offer a suite of investment incentives. The main sites are located at the Port of Felixstowe, Harwich International Port and Gateway 14 near Stowmarket.

The Felixstowe site is located within the Port of Felixstowe and includes an area approved for development as a logistics park, which lies wholly within the Port boundary – to the west and east of Dock Road.

The development requires a new connection and infrastructure capable of high voltage electrical power distribution which is estimated to be 2 x 12MVA and will require a new primary sub-station to be located within the Port connected to the existing DNO Sub-Station which is located outside of the port estate by new cables / cable routes.

Those who are successful with their Pre-Qualification, will be eligible to tender for the Professional Engineering Services at Felixstowe.

2. General Requirements

HV Route and Works at DNO Substation

The works to install the new HV Route / Cabling from the existing DNO substation to new Primary Substations is anticipated to require a combination of DNO contestable and non-contestable works including inter alia:

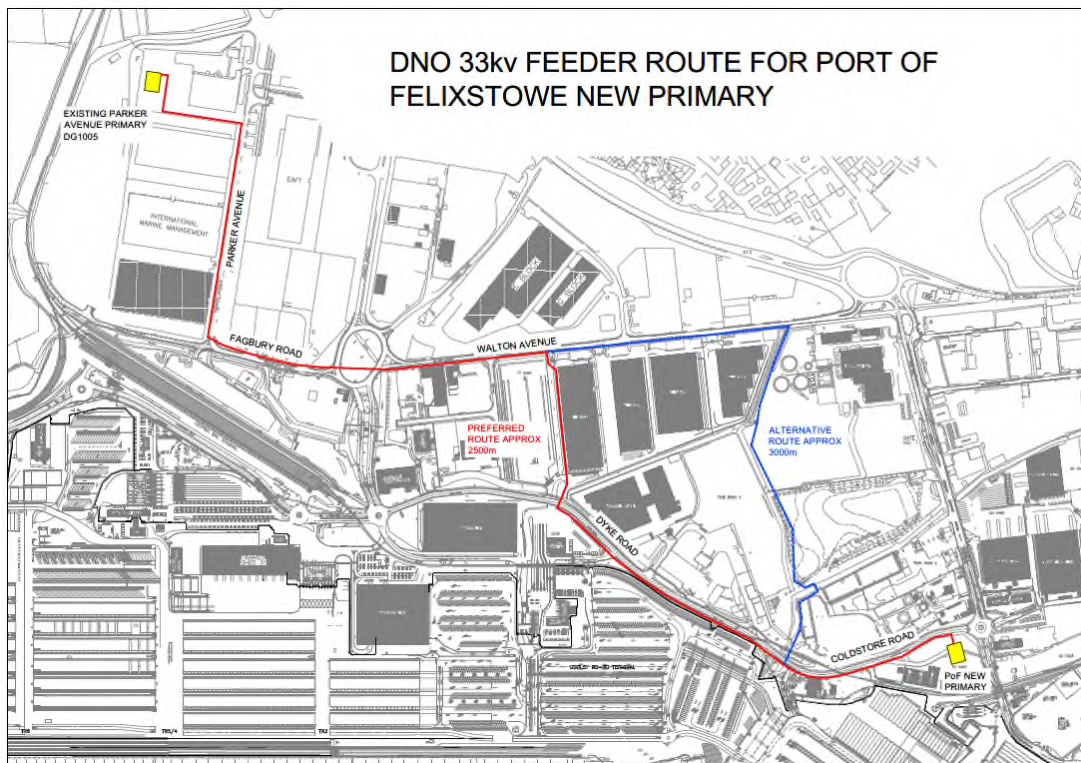
- Applications to the DNO
- Applications for wayleaves
- Traffic management
- Installation of ducted / direct buried cable
- Installation of new equipment at the DNO's substation
- Connection to the DNO's substation

Primary Substation

The new primary substation is required within both the Port of Felixstowe, it is anticipated that this will include inter alia:

- Construction of the new primary substation building
- Supply and installation of equipment, transformers, switchgear etc in the new primary substation
- Connection and commissioning of the new primary substation

The general layout of the proposed new facilities is shown on the plan below.



3. Procurement Route

It is envisaged that the works be procured using a performance specification (Employer's Requirements) and that the primary substation and HV route will be designed by the Contractor (or specialist sub-contractor) based on the information provided by the Professional Engineer. Although the HV route, equipment and substation will be Contractor designed, the feasibility study for the route and outline design will be undertaken by the Professional Engineer. The Professional Engineer will also be required to advise the Employer which HV route is most favourable based upon the feasibility studies.

The construction contract will be procured through competitive tender. The Conditions of Contract will be the FIDIC Conditions of Contract for Plant & Design Build. (First Edition 1999) published by the Fédération Internationale des Ingenieurs – Conseils consisting of both amendments to certain clauses and new clauses.

4. Professional Engineering Services

The Professional Engineering Services are to consist of pre and post contract duties.

Section 1: Pre-Contract Duties

1.1 Review previous studies and general project familiarisation

- a) Review the previous outline proposals for the 33kv route and indicative primary substation location and connection to the DNO and advise on the adequacy of such.

- b) Gather information on the existing structures, facilities, services, ground conditions and the like. Employer to provide up to date utilities survey data within the extent of their site. Review all available existing documentation (including site investigation documentation) and advise on the adequacy of such.
- c) Undertake desk studies and site visits, including site walk-overs/inspection and meetings with Port personnel (allowing for one single day visit, assuming access to the project site is possible and travel is completed within the same day), to obtain a thorough understanding of:
 - The scope of the Works
 - The general condition of the existing DNO substations, proposed route and proposed primary substation location
 - The current uses of the area within and adjoining the Site
 - Operational aspects that may impose constraints on the Works

1.2 Review and agree the Employer's Requirements and general arrangement of the route and new primary substation options

- a) In consultation with the Employer, by attendance at appropriate meetings, determine the Employer's requirements for the Project.
- b) Review and agree the general arrangement for the Works with the Employer and, in so doing, propose/consider alternative arrangements for discussion.
- c) Prepare a detailed programme for the Project including the Pre-Contract Duties, tender process and the anticipated construction period.

1.3 Review proposed route

- a) Review the location of the connection to the DNO, the cable route and new primary substation locations which have been proposed.
- b) If necessary, make recommendations for further studies. Should further studies be required:
 - produce study briefs and obtain quotes
 - (subject to the Employer's instruction), commission such studies and report on the findings.

1.4 Feasibility study including site surveys to confirm cable routes and substation locations

- a) Specialist civil & electrical teams confirming the viability of proposed cable routes & electrical capacity intake substation
- b) Desktop study and identification of existing services on the proposed route
- c) High level topographical and RADAR survey
- d) Identification of physical obstructions i.e. bridges, water courses & railway lines etc.
- e) Identification of HDD (Horizontal Directional Drilling) requirements
- f) Requirements of permits from local authority & traffic management

- g) Photos of key features
- h) Provision of surface reinstatement requirements
- i) Provision of stakeholder contact information, identify landowners.
- j) Provision of preliminary HV cable route drawings showing typical x-sections & joints locations.
- k) Existing electrical equipment's identification and confirming their specification
- l) Confirming the availability of space for proposed equipment
- m) Confirming the modification requirements in existing equipment to synchronize with new equipment
- n) Confirmation of cable termination requirements and connections
- o) Provision of complete set of dependencies and constraints
- p) Review the proposed outline routes. Confirm, or otherwise, the suitability of the routes in relation to the Project.
- q) Update the route if necessary and, in consultation with the Employer, determine the scope of the Works required for the Project.

1.6 Prepare budget estimate, programme and report

- a) Subject to the findings of the feasibility study, develop a budget estimate for each route, connection and new primary substation.
- b) Prepare a programme for each option to include long lead-in activities such as anticipated durations for wayleave applications, applications to the DNO lead in on switch gear and equipment; durations for contractor detailed design and construction.
- c) Prepare a report to the Employer on the options and make a recommendation.

1.6 Prepare Outline Design, Specification of Functional Requirements for Contractor Design Elements and Definition Drawings

- a) Prepare an outline design for the Project based upon an option agreed by the Employer from the feasibility study to allow a contractor to develop their detailed design, inter alia, the
 - Lay out drawings of typical switch house buildings
 - Identification of boundaries of proposed primary substation
 - Specifications of transformer panels at 33kV intake substation
 - Specification of transformers at 11kV substation
 - Specification of HV , LV & cables / ducts
 - Typical cross sections of cable trench and reinstatement
 - SCADA requirement
 - Specification of entire protection equipment i.e. breakers, NER & switchgear panels
 - Transformer oil catchment bund requirements
 - Civil ground works related to 11/kV Substation

- Suitability of switchgear sitting inside 33kV Switch house or outside yard
 - Identification of contestable and non-contestable works
- b) Produce Specification of Functional Requirements for Contractor Design Elements and definition drawings for contractor-design elements.
- c) Allow for all documentation to be reviewed by the Employer and subsequently amended to meet the Employer's comments and requirements.
- d) Give due consideration to the phasing of the construction works.

1.7 DNO and Wayleave Application

- a) Produce and submit an application to the DNO for the Works on behalf of the Employer. Liaise as necessary with the DNO and use all reasonable endeavours to secure the application in accordance with the outline programme for the Project.
- b) Produce and submit applications for wayleaves for the Works outside of the Ports from the Local Authority, Private Landowners (including inter alia Network Rail, Trinity College) on behalf of the Employer. Liaise as necessary and use all reasonable endeavours to secure the applications in accordance with the outline programme for the Project.

1.8 Principal Designer (CDM 2015)

Carry out the role of Principal Designer as defined in the Construction (Design and Management) Regulations 2015, including inter alia:

- Preparation of the pre-construction information for review and development by the Employer.
- Identifying foreseeable risks, together with considering and proposing measures for mitigating such risks.

1.9 Preparation of tender documents

Produce tender documents for review by the Employer, to include, but not be limited to, the following:

- Instructions to Tenders
- Pre-Construction Information (to CDM 2015)
- Forms of Tender, Agreement, Warranties and Bonds
- Conditions of Contract (including FDRC particular conditions)
- Bill of Quantities
- Drawings
- Specification of Functional Requirements for Contractor Design Elements
- Site data and information

Allow for the tender documentation to be reviewed by the Employer and subsequently amended to meet the Employer's comments and requirements.

(Note: the Employer will undertake the tenderer prequalification and selection process. The Employer will also issue the tender documents and manage the tender process.)

1.10 Respond to questions from tenderers

Respond to any questions from the tenderers and produce any tender amendments if necessary. (The Employer will manage the exchange of correspondence with the tenderers)

1.11 Evaluation of tender submissions

- a) Carry out a detailed tender evaluation based on the agreed procedures for the tender assessment/evaluation, including an evaluation of all forms/types of construction, materials etc, and any alternative designs, materials etc. The evaluation shall include a detailed technical examination and assessment of conforming tenders and any alternative designs, materials etc, with regard to design, durability and maintenance and construction details/programme/submissions submitted by the tenderers. (Allowing only for the high-level evaluation of one alternative design submission per tenderer in addition to their compliant submission, followed by a detailed review of three preferred tenderers' submissions).
- b) Carry out a detailed check on any design calculations submitted with the tenderers' submissions. (Allowing only for the high-level evaluation of one alternative design submission per tenderer in addition to their compliant submission, followed by a detailed review of three preferred tenderers' submissions).
- c) Review and advise on non-conforming tenders, any tender qualifications, stated assumptions etc.
- d) The Employer will assess the financial and contractual aspects of the tender submissions.
- e) Attend all necessary meetings with tenderers (allowing for one single day of meetings at the Port of Felixstowe with bidding contractors during the tender period and two days of meetings at the Port with up to three preferred contractors during the tender evaluation period, all attended by two personnel from the Professional Engineer and assuming travel is completed within the day).
- f) Produce a technical tender report, and any addenda thereto, making clear conclusions and recommendations to the Employer.
- g) Attend all necessary meetings with short-listed tenderers and assist in the resolution of all issues and produce, where necessary, a revised form of documentation/contract, addressing all such issues.
- h) Assist in the award of the Contract, including preparation of the letter of clarification, contract documents etc.

1.12 Project Management

Project management services, as necessary, to deliver the Pre-Contract Duties.

Section 2: Post-Contract Duties

2.1 Head Office Design Check Services

- a) Carry out the duties, undertake responsibilities and obligations and exercise the authority and powers of the Engineer specified in or implied from the Contract so far as they relate to reviewing and approving the Contractor's proposed design and associated items (allowing for the review of each original design package submission and up to three subsequent revisions). Unless agreed otherwise, the review period in the Contract for detailed design submissions will be 21 calendar days.
- b) Use all reasonable endeavours to verify that the Contractor's designs / specifications fully satisfy the Specification of Functional Requirements for Contractor Design Elements / Drawings.
- c) Monitor the status of all submissions against any Works programme under the Contract and take necessary actions as and when required.
- d) Review and confirm whether proposed methods of construction, materials etc., are in accordance with good engineering practice and do not endanger the safety of the Employer's staff and equipment or that of his customers.
- e) With respect to alternative designs, materials etc., proposed by the Contractor, requiring an amendment to any designs, materials etc., required by or approved under the Contract, check the alternative designs, materials etc., and advise on the technical, programme and financial implications of the alternatives and make recommendations to the Employer based on such review. Any decision on whether to accept such alternatives shall be made by the Employer.
- f) Review and advise on the Contractor's proposed quality assurance systems and request amendments if necessary.
- g) It is accepted that the Professional Engineer has made no fee allowance for:
 - a. The review of any submissions from the Contractor further to any alternative design variations to previously submitted designs;
 - b. The review of any submissions from the Contractor further to any variations issued by the Employer (except where such variations arise from errors, ambiguities, inconsistencies and the like in the documentation prepared by the Professional Engineer);
 - c. Any liaison or interaction with an independent design checker or verification consultant.

2.2 Site Supervision and Contract Administration Services / Head Office Supervision-in-Chief

- 2.2.1 (a) Carry out duties, undertake responsibilities and obligations and exercise the authority and powers of the Engineer specified in or necessarily to be implied from the Contract.
- (b) Before the exercise of any power or discretion (*to be defined*) the Engineer shall notify the Employer of the relevant facts and matters and shall seek and consider the Employer's opinion on the same.

5. Programme

The outline programme for delivery is indicated below:

- Appoint Professional Engineer October 2024
- Feasibility Study Oct 2024 / Dec 2025
- Outline Design Jan 2025 / March 2025
- Prepare Tender Documents March 2025 / April 2025