

BULK PURCHASE NGET SOURCED EQUIPMENT PROCEDURE

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PURPOSE AND SCOPE

The purpose of this procedure is to define how the interface shall operate (throughout the Network Development Process (NDP)) between all concerned parties involved in the safety, development, procurement, design, transportation, delivery, site installation and commissioning processes associated with NGET Sourced Equipment such as Static Wound Plant, Switchgear and GIS, delivered under the National Grid Bulk Purchased Equipment framework supply contracts.

The purpose of this procedure is also to define arrangements between the Principal Contractor, Bulk Purchase Equipment Supplier, Bulk Purchase Equipment Supplier's nominated Delivery contractor and nominated Installation contractor to ensure they:

- a) Fully understand their duties, roles and responsibilities and ensures that they do not engage in or undertake activities which are not their responsibility or outside their competence.
- b) Fully understand their responsibilities with regard to the Construction (Design & Management) Regulations 2015 (CDM 2015) and UKBP/TP137 requirements, for plant and material delivery and all subsequent site installations, coordinating these in adherence to the requirements of the Works Contract and UKBP/TP163.
- c) Undertake Site Delivery, Installation and Commissioning in accordance with a robust Site Quality Plan delivering a reliable asset which accords with National Grid's Technical Specifications, Technical Guidance Notes, Transmission Procedures, etc.
- d) Undertake Site Delivery, Installation and Commissioning which is appropriately planned and integrated into National Grid's business processes (including UKBP/TP153) and the work of other National Grid Management Units, such as ETAM Operations (ETAM Ops), Transmission Network Control Centre (TNCC) and Operational Planning

- e) Undertake Site Delivery, Installation and Commissioning which maximises both Safety, Health, Environmental & Sustainability (SHES) performance together with a demonstrable minimum skill set and are authorised/assessed in accordance with the requirements of UKBP/TP141 and UKBP/TP144.
- f) Undertake Site Delivery, Installation and Commissioning which is carried out with a demonstrable level of assurance and governance, with effective contingency planning – an effective audit trail.

This procedure applies to all investments which comprise the National Grid Electricity capital programme where National Grid Electricity Transmission (NGET) Bulk Purchased Equipment is to be deployed.

PART 1 – PROCEDURAL

1 ACCOUNTABILITIES & RESPONSIBILITIES

1.1 Electricity Transmission Asset Management Investment Delivery Engineer (ETAM IDE)

The ETAM Investment Delivery Engineer shall work with the Capital Delivery Development Engineer to identify and progress investment projects utilising Bulk Purchased NGET sourced Equipment in conjunction with Investment Team members.

1.2 Static Wound Equipment Investment Team (SWEIT)

Lead and Chaired by Capital Delivery (CD) Development Team, the Static Wound Investment Team (SWEIT) are:-

Responsible for the management of overall coordination, prioritisation and reallocation of all Bulk Purchase equipment and allocation of all Bulk Purchased equipment to the associated schemes. Also responsible for submitting identified investments to the Capital Delivery / Global Procurement Steering Group

Responsible for management of the .Box (Box.SWEIT@nationalgrid.com) and validation of the submitted TP211 proformas (Appendix A)

Responsible for agreeing with Global Procurement the procurement strategy and timelines for each individual order placement (either call-off order or factory slot allocation)

Responsible (where required) for ensuring the Development Engineer undertakes call-off order to ensure Bulk Purchased delivery to meet scheme timetables

Responsible for the maintenance and implementation of Bulk Purchase Equipment Register that identifies up-to-date orders prior to site energisation, also monthly circulation to identified nominated stakeholders as (but not limited to) below:

- SWEIT Chairman (Capital Delivery (CD) Development)
- Global Procurement
- CD Commercial
- CD Contracts
- CD Technical Assurance
- ETAM Asset Policy
- ETAM Asset Health
- ETAM Investment Delivery

1.3 Capital Delivery (CD) Development Engineer

At the commencement of Network Development Process (NDP) 4.3 – Develop and Sanction Stage the Development Engineer is responsible, where new Bulk Purchase Equipment Manufacturer (non type registered) is identified in the selected design option, for requesting Asset Policy to commence and facilitate the type registration process.

The CD Development Engineer is responsible during the NDP 4.3 – Develop and Sanction Stage for progressing the investment design and associated TP500 documentation to allow the utilisation of the Bulk Purchased Equipment as part of the Investment Delivery.

Where advanced (early) procurement is required, the CD Development Engineer will identify and secure Bulk Purchase Equipment production slot via CD Commercial ahead of full scheme sanction to allow long lead items to be delivered in project timescales. Where advanced (early) procurement is not required, this responsibility falls to the CD Project Engineer

A summary of roles and responsibilities for the provision of Bulk Purchased NET Sourced Equipment is available in Appendix B.

The CD Development Engineer is responsible, during NDP4.3 – Develop and Sanction Stage, for :

- a) Where advanced (early) procurement is required, the CD Development Engineer shall complete Appendix A – Static Wound Delivery Unit Information Request Form and enact the Manufacturing Assurance process by submitting it to the SWEIT via the .box (Box.SWEIT@nationalgrid.com)
- b) The coordination and integration of delivery aspects of the programme as required for the advance (early) procurement and delivery of equipment necessitated by delivery lead times;

1.4 Capital Delivery (CD) Project Engineer

Following Gate C Sanction the CD Project Engineer as confirmed in the Call-Off Order shall be the Single Point Of Contact (SPOC) for associated Bulk Purchase Equipment within their allocated Capital Scheme and:

The CD Project Engineer is responsible, during NDP4.4 – Execute Project Stage, for :

- a) Ensure that (where required) the Call Off Order is amended to identify that the CD Project Engineer is the SPOC and submit to Contracts Officer for resubmittal.
- b) The management and coordination of the Bulk Purchased Equipment Supply Framework Contract;
- c) The management and coordination of the Bulk Purchase Equipment Supplier and/or their nominated contractor(s) engaged in the works (i.e. delivery, site installation and commissioning).
- d) Ensuring that the Bulk Purchase Supplier and/or their nominated contractor(s) provide the Principal Contractor with the information as detailed in, but not limited to, Section 2 and 3.
- e) Ensuring that the Bulk Purchase Equipment Supplier and/or their nominated contractor provides the technical data in accordance with the requirements of UKBP/TP221 (Technical Data Process and Assurance)
- f) Ensure clear interface between the Bulk Purchase Equipment Supplier and other key stake holders such as (but limited to)

- Global Procurement
 - Technical Assurance
 - Static Wound Equipment Investment Team (SWEIT)
 - Asset Policy
- g) Ensuring that for static wound equipment the Static Wound Equipment Delivery Unit Information Request form is completed (Appendix A) by the Principal Designer (Design and Build) with regards to the requirements of section 2.4.
- h) Engage with Technical Assurance to ensure design, quality and manufacturing assurance process is established for each of their allocated Bulk Purchased equipment order.
- i) Inform SWEIT of changes to delivery dates / times.

Where advanced (early) procurement is not required, the CD Project Engineer will identify and secure Bulk Purchase Equipment production slot via CD Commercial ahead of full scheme sanction to allow lead items to be delivered in project timescales.

A summary of roles and responsibilities for the provision of Bulk Purchased NET Sourced Equipment is available in Appendix B.

1.5 CD Projects Officer

It's the responsibility of the Project Officer to support the CD Project Engineer in carrying out the details of the contract.

1.6 Global Procurement

Global Procurement is accountable and responsible for the procurement including tendering, competency assessments and subsequent administration of the Bulk Purchased Equipment Supply Framework.

1.7 CD Contracts Officer

Contracts Officer shall be responsible for:

- Full awareness of the sites, scope and target costs for each Contract.
- Manage performance of allocated Contractors
 - Monthly View
 - Attend allocated monthly internal and external Meetings
 - Report Internally and externally on performance
- Manage warranty/defects issues per Contract
- Manage Contractual Compliance for allocated Contracts (Both NG and Contractor)
- Communicate with Contractors at Contract Level
- Holding and chairing the monthly contracts progress meetings with bulk supply manufacturers and ensuring the relevant CD Project Engineer attend where required

1.8 Principal Designer (Pre Contract)

The appointed representative shall undertake duties of the Principal Designer (Pre Contract) in accordance with Construction (Design and Management) Regulations 2015 (CDM 2015) and UKBP/TP137.

1.9 Principal Designer (Design and Build)

The Principal Designer (Design and Build) shall undertake the duties identified within the Construction (Design and Management) Regulations 2015 (CDM 2015) and UKBP/TP137.

1.10 Bulk Purchase Equipment (BPE) Supplier

The BPE Supplier is accountable for the design, manufacture/supply, delivery, installation* and commissioning* of the associated item(s) of Bulk Purchased Equipment in line with the relevant framework established by Global Procurement.

Note*: Only as part of their responsibilities identified within the Contact

1.10.1 The BPE Supplier shall be responsible for the delivery management of:

- a) Abnormal or heavy loads* (i.e. HV transformers, reactors, etc.), which may necessitate the engagement of a specialist haulier sub-contractor.

Note*: Only as part of their responsibilities identified within the Contact (i.e. Transformer supplier and/or their nominated hauliers are not responsible for road upgrading or bridge reinforcement)

- b) Installation of their equipment on site by their nominated contractor

Their procured plant and equipment for site installation by others.(e.g. Specialist installations);

- c) The identification and management of all risks identified by the BPE Supplier and/or their nominated contractors.

1.10.2 The BPE Supplier shall be responsible for providing the Principal Contractor with:

- a) All risks identified, whilst undertaking works within the Principal Contractor's work area, shall be reported to the Principal Contractor's Site Manager together with agreed action, action owner and action close out timescale
- b) The information as detailed in, but not limited to, Section 2 and 3

A summary of roles and responsibilities for the provision of Bulk Purchased NET Sourced Equipment is available in Appendix B.

1.11 Principal Contractor

The Principal Contractor, as defined by the CDM 2015 Regulations and UKBP/TP137, is contracted by National Grid and is responsible for integration of the Bulk Purchased NGET Sourced Equipment programme for design, delivery, installation and commissioning into their delivery programme and that this is fully coordinated.

The Principal Contractor shall ensure that all delivery, installation and commissioning risks, including integration risks from all supplier interfaces are identified and managed throughout the site delivery, installation and commissioning processes.

A summary of roles and responsibilities for the provision of Bulk Purchased NET Sourced Equipment is available in Appendix B.

1.12 Asset Policy Type Registration Engineer

Responsible for agreeing the high level design of the equipment with the Bulk Purchased Supplier and undertaking the Type Registration process in accordance with TP183.

1.13 Technical Assurance Design Engineer (Assurance) (Bulk Purchase Scheme)

Responsible to the Investment Delivery Team for managing the design process in accordance with UKBP/TP188 and working in conjunction with the Asset Policy Type Registration Engineer to ensure that design and construction related interface issues have been considered for newly provided Bulk Purchased Equipment.

Providing advice and assurance services on an ongoing basis to the associated capital schemes utilising the Bulk Purchase Supplied equipment

1.14 Technical Data Assurance Engineer

The Technical Data Assurance Engineering is responsible for technical data assurance in accordance with the requirements of UKBP/TP221.

1.15 Technical Assurance Quality Engineer

Responsible for ensuring the manufacturing assurance process is fully enacted in accordance with UKBP/TP219.

1.16 Construction Interface Engineer

Construction Interface Engineer is a site based representative of the CD Project Engineer who is responsible for undertaking the duties as defined by the CD Project Engineer within UKBP/TP163 – Site Installation. This shall include any and all items procured under the Bulk Purchase Scheme for a given site.

1.17 Temporary Works Coordinator (TWC)

The Principal Contractor's TWC shall ensure that all Temporary Works for bulk purchased equipment installation(s) are integrated into and managed in accordance with the Principal Contractor's Temporary Works processes, compliant with the requirements identified in UKBP/TP184.

The Bulk Purchase Equipment Supplier is responsible for providing the Principal Contractor with all identified temporary works together with all necessary information in compliance with UKBP/TP184.

Any Temporary Works requiring Design Assurance shall be the responsibility of the Principal Contractor.

1.18 Principal Contractor – Contractor Designer Approval Engineer

The Principal Contractor – Contractor Design Approval Engineer shall be responsible for the coordination and cooperation with the BPE Supplier to ensure that the proposed bulk purchased equipment has no design restrictions that would adversely impact on the permanent design and that their design is fully developed and integrated in accordance with the requirements defined in UKBP/TP188.

1.19 CDM Advisor (CDM-A)

The CDM-A is responsible for ensuring their duties, where acting on behalf of the Client and the duties of those identified within CDM 2015 and UKBP/TP137 are being fully discharged throughout the investment delivery.

2 PRINCIPLES

2.1 Type Registration - Design, Design Management And Provision Of Design Information

National Grid will endeavour to align Bulk Purchased Equipment with the associated capital delivery project, however, it should be noted that the full design and delivery process for the framework may not be established until the first equipment is delivered as part of that project.

In this case, equipment will be subject to the type registration process as described in UKBP/TP183 and Design Assurance in line with UKBP/TP188. In such cases, the associated Investment Delivery Team shall make reasonable allowances within its design and construction programme to acknowledge the “first of its type” equipment provision and the effect this may have on delivery timescales.

2.1.1 The BPE Supplier shall ensure all Bulk Purchase Equipment is Type Registered and Tested to this in accordance with UKBP/TP183.

2.1.2 The BPE Supplier shall ensure that all Type Registration and Test issues have been notified to the CD Project Engineer, together with details and timescales for resolving the issues (Transformers, etc.)

2.2 Bulk Purchased Equipment Type Registration Design

Responsibility for the detailed design of the specific item of equipment is vested in the BPE Supplier, who, in conjunction with the Asset Policy Type Registration Engineer and Technical Assurance Design Engineer (Assurance), will provide a mutually acceptable design in accordance with National Grids specifications and procedures.

Where Type Registration of the Bulk Purchased Equipment is part of the Investment Delivery the CD Project Engineer will agree a schedule of design deliverables for the provision of outline information, provisional information and final design information to allow the scheme design to progress.

2.3 Schedule of Deliverables

The BPE Supplier shall be responsible for the delivery of a type registered, tested and design assured product for use on the main capital delivery contract, and full stage 1 commissioning.

The remaining design tasks will relate to aspects of site specific integration undertaken by the Capital Delivery contractor whose responsibilities include but are not limited to:

- Cable schedules,
- HV and LV primary/secondary connections,
- Database works,
- Site specific civil design,
- Spatial configuration,
- Stage 2 commissioning,
- As-installed information and data in conjunction with the BPE Supplier.
- Delivery and transport data and information to facilitate load calculations for other delivery assessments
- Temporary Works design approval

Where final design information is not available due to Type Registration forming part of the capital delivery investment time frame the Principal Contractor shall work with both outline information provided by the CD Project Engineer and provisional information provided by the BPE Supplier. This will allow certain aspects of the design to proceed and provision shall be made for adjustments to deliver a fully accepted designed solution.

2.4 Design Information Categories

The bulk purchase equipment design information shall be categorised as Final, Provisional or Outline information based on the hierarchy below, however, it will be incumbent on all parties to quantify the increased risks each category presents for the Investment with regard to design information available. Where provisional or outline drawing are used the CD Project Engineer shall identify the risks within the project risk register.

2.4.1 Final Design Information

Design information will be considered final when both the Asset Policy Type Registration Engineer and Design Engineer (Assurance) issue the associated Equipment Group Identity (EGI) code and the Design Compliance Audit Assurance Report (DCAAR) or both agree that there are no significant outstanding issues and the information can be released in anticipation of issuing the formal paperwork.

This information shall be used to finalise all aspects of the design. It is not expected for there to be any significant differences in the information provided at this stage as designers shall have been actively engaged in engineering and design discussions, as per the TP188 Design Review and Hazard Review processes.

The final technical Type Registration information shall be provided to the Principal Contractor, which shall include but not be limited to:

- Final Foundation drawings/loading information
- Plant arrangement and maintenance access drawings
- CT information and schematic diagrams
- Manufacturers data sheets ie bushings
- Generic Equipment Module
- FAT test data (from type test unit)
- Technical Data Workbook

Where final design information is not available, (e.g. due to Type Registration forming part of the capital delivery investment time frame), then Provisional design information shall be used.

2.4.2 Provisional Information

This shall be information, technical data and drawings provided by the BPE Supplier ahead of the equipment being fully Type Registered or Design Assured. The information shall be of suitable quality and when available shall replace any 'outline information', where previously issued.

Provisional information will be validated as suitable for use by the Technical Assurance Design Engineer (Assurance) and the CD Project Engineer.

The data provided at this stage shall allow for civil and layout designs to be commenced as well as fundamental aspects of the protection schemes (i.e. CT locations, ratios and class, etc.).

Where other information becomes available during the course of finalising the Type Registered design then further submissions of provisional data shall be provided by the BPE Supplier to the CD Project Engineer to assist in advancing the Investment Design.

Examples include updated Input / Output schedules, finalised power supply information, electrical connection material type and bushing cantilever strengths.

2.4.3 Outline Information

Where no reasonably detailed design information is available from the BPE Supplier then the Development Engineer, CD Project Engineer and Principal Contractor shall, where required to progress the work to meet the programme, proceed with the Investment Design on the basis of using historical information based on previous bulk purchased equipment general arrangement drawings provided by the BPE Supplier (e.g. using previous Bulk Purchased transformer general arrangement drawings in the early design stages for new transformer schemes or GIS bay layouts).

The historical information shall be validated as suitable for use by the Technical Assurance Design Engineer (Assurance) and the CD Project Engineer.

2.5 Temporary Works

2.5.1 Temporary Works Information

The BPE Supplier and/or their nominated contractor(s) shall provide the Principal Contractor's Temporary Works Coordinator with their envisaged temporary works, in accordance with the requirements of UKBP/TP184, for inclusion in the Temporary Works Register.

2.5.2 Temporary Works Designs

The BPE Supplier and/or their nominated contractor(s) are responsible for all their Temporary Work designs and that these designs, where required by the category, are independently checked prior to issuing to the Temporary Works Coordinator for approval.

It is usual practice for the BPE Supplier and/or their nominated sub-contractors, specifically the organisations appointed to physically transport and install the HV equipment within the scope of this document, to limit their design responsibility to the installation systems only, e.g. steel support beams, grillages, hydraulic jacks, timber packing etc. They do not generally consider the interfaces, other supporting infrastructure or the ground.

Consequently, and in the absence of specific information or instruction to the contrary, the capacity of new or existing plinths, bunds, skid ways, road or other substation surfaces, cables crossings, trenches, ducts, foundations etc. plus the ground on or in which these are constructed to adequately support the loads provided by the BPE Supplier shall be the design responsibility of the PC. To this end the PC shall undertake whatever additional surveys, assessments and invasive investigations they deem necessary to supplement any information provided by National Grid.

Both parties (i.e. PC & BPE) shall work proactively to achieve a technically acceptable and safe solution noting that this is likely to be an iterative process and that the size, location and capacity of existing assets may significantly limit the loads and thus the configurations that the BPE might reasonably expect to employ for equipment installations on new build sites.

2.6 Site Drawing Management

The Principal Contractor is responsible for preparing a Drawing Management Process for the management and control of all construction drawings provided to site in accordance with the requirements within UKBP/TP135 as well as UKBP/TP235 Digital Engineering.