Company Standard-
Contestable Commissioning Specification

Governance and Control

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Document Review

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Contents

Distribution List

This document is for circulation to personnel who undertake the following activities;

☐ All ESB Networks Staff	☐ All Contractors
☒ Commissioning	☐ Civil
☐ Contractor Management	☐ Haulage
☐ Design Services	☐ Overhead Lines
☐ Fibre optic on the Network	☐ Substations
☐ Finance	☐ Timber
☐ Fleet Management	☐ Underground Networks
☒ Legal	
☐ Material Services	☒ Others (specify)
☒ Operations	EirGrid
☐ Overhead Networks (HV)	TAO, ESB Networks
☐ Overhead Networks (MV/LV)	Renewables, HVD&C
☐ Procurement	
☐ Substations (HV)	
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☐ Technical Training	
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☐ Underground Networks (MV/LV)	
☐ Work at the Meter	

Section 1 – Governance

Foreword

This document is a new company standard outlining the process to be followed where a Customer elects to contestably commission its contestably built assets.

1. Scope

This document specifies the process for contestable commissioning of contestably built assets.

It covers the contestable commissioning of all substation primary and secondary plant in contestably built substations. In addition, it covers the contestable commissioning of contestably built overhead lines and power cables.

This document sets out the requirements of ESB Networks (in its capacity as licensed asset owner of the transmission and distribution systems) for the:

- Approval of the nominated Commissioner, and for the retention of the same approval.
- Competence of the Customer's Commissioner.
- Deliverables associated with the successful completion of the commissioning phase of the project.
- Sanctions associated with non-compliance with ESB Networks procedures and this company standard.

Items outside the scope of this document include:

- Associated Transmission / Distribution reinforcements
- Telecoms equipment
- Remote-end station works, where the contestably built station interfaces with the existing HV system
- Revenue metering

2. Policy Base

Policy No.	Policy Title
DOC-140109-AVM	ESB Networks Electrical Safety Rules
DTIS-050104-BOK	ESB Networks Commissioning Policy
DOC-170605-AJY	ESB Networks Protection Policy

3. Accountabilities, Roles and Responsibilities

Responsible Person	Responsibility
Issuing Authority	• Ensures that the document is published in accordance with approved processes, and ensures that the document is communicated and trained as required.
Content Owner	• Maintenance & Ownership of this Document. • Monitoring and review of processes and recommendations arising from feedback from End Users and incidents.
End User of this Document	• Adhere to the requirements stated in the document. • Report suggestions for improvement, as they arise, to the document owner. • Advise the Document Owner if they do not understand any part of the document, until such time as they reasonably understand it.

4. Mandatory References

The following documents, in whole or in part, are indispensable for the application of this document. For dated references, only the edition stated applies. For undated references, the latest edition of the referenced document (including any alerts which amend the document) applies;

Document Number	Document Title
XDS-GCP-00-001	EirGrid Commissioning Procedures
[Draft]	ESB Networks Commissioning Procedures
TAM-AMP-2008-I01	EirGrid Maintenance Policy
N/A	EirGrid Functional Specifications (Project Specific)
N/A	ESB Networks Functional Specifications (Project Specific)
XDS-GTS-20-001	EirGrid Pre-commissioning Test Schedules
WI-EPSB-003-001-005	ESB Networks External and Contractor Pre-commissioning Specifications
DOC-140109-AVM	ESB Networks Electrical Safety Rules
Project Specific	Transmission / Distribution Connection Agreement

5. Definitions

Capitalised terms which are not defined in this document shall have the meaning set out in the applicable Connection Agreement

Term	Definition
Business Day	A day between and including Monday to Friday and does not include public holidays and weekends.
Commissioner Approvals Register	A list of names of Commissioners along with associated approvals, and associated project to be commissioned by them, from whom ESB Networks or EirGrid will accept a Declaration of Fitness.
Commissioner	A suitably qualified, competent person who meets the minimum acceptance criteria and has been declared competent by the Customer .
Connection Agreement	The Connection Agreement between a Customer and the relevant System Operator for connection to the Distribution System or the Transmission System as applicable. In the case of a distribution connected customer this comprises: - General Conditions for Connection of Industrial and Commercial Customers and Generators to the Distribution System - ESB Networks Limited Connection Agreement - DSO Quotation Letter (QL). In the case of a transmission connected customer this comprises: - EirGrid Transmission Connection Agreement. - General Conditions of Connection and Transmission Use of System - Transmission System Operator [Quotation Letter/Offer Letter]
Customer	The party to the Connection Agreement
Declaration of Competence	A declaration by the Customer in respect of the competence of the proposed Commissioner to commission the proposed works.
Declaration of Fitness (DOF)	DOF - see sample template at Annex C. A declaration issued by the Commissioner which certifies that the listed plant is: • Fit for purpose • Has been commissioned in accordance with the ESB Networks Commissioning Procedures or Eirgrid Commissioning Procedures • Compliant with the EirGrid or ESB Networks functional specifications • Compliant with the Grid or Distribution Codes • Safe to maintain and operate
ESB Networks	Means the ring-fenced business unit of the Electricity Supply Board (ESB) designated for the purposes of carrying out ESB's functions under the Transmission System Owner and Distribution System Owner licences.
Key Inspection Points	An agreed list of hold, witness and review audit points for a project. A representative of ESB Networks shall be present for all hold and witness points.
Person In Charge of Work (PICW)	As defined in DOC-140109-AVM *(ESB Networks Electrical Safety Rules 2006)*

Term	Definition
Pre-Commissioner	Person responsible for ensuring that all tests and inspections have been carried out and documented in accordance with the ESB Networks pre-commissioning procedures for Distribution and the EirGrid pre-commissioning procedures for transmission.
Protection Settings Application Record (PSAR)	A documented record confirming that the protection settings issued by the Settings Provider have been applied on a particular protection relay – this document is completed by the Commissioner and returned to the Settings Provider prior to energisation.
Proven Protection	Where correct stability and or directionality of a protection scheme has been verified: 1) When the associated current transformers of a protection relay have been in circuit with a load or primary current greater than 10**%** of CT primary rating. 2) The Voltage Transformer (VT) has seen nominal primary system voltage.
Settings Provider	Department authorised to provide settings for the project: • ESB Networks System Protection in the case of the distribution network • EirGrid Protection department in the case of the transmission network
Summary Protection Commissioning Report (SPCR)	A documented record confirming the enabled functions that have been tested on the protection relay.
System	An arrangement of apparatus, with clearly defined boundaries, used in connection with the generation, transmission and distribution of electrical energy.
System Operator (SO)	As the context so requires, either ESB Networks Limited, being the licensed Distribution System Operator (“DSO”), and/or Eirgrid Plc being the licensed Transmission System Operator

6. Terminology

For the purposes of this document, the following terminology applies;

Shall	Designates a company requirement where conformance is mandatory.
Should	Designates a company recommendation where conformance is not mandatory.
May	Designates a Permissive Statement - an option that is neither mandatory nor specifically recommended.

7. Derogation

This document shall be adhered to at all times and no derogations are allowed.

8. Compliance

8.1 Monitoring

As provided for under the Connection Agreement, ESB Networks shall have the right to carry out unannounced audits and to witness testing at key inspection points of the project at any time during the commissioning phases. Should ESB Networks exercise the option of carrying out these audits, they shall be objectively carried out by senior ESB commissioning personnel familiar with the switchgear, protection technology and applicable commissioning procedures.

The following is a non-exhaustive list of key inspection points for auditing:

- Pre-commissioning documentation
- Test method statements
- Site specific risk assessments
- Technical documentation
- Primary equipment test sheets including manufacturers factory test data
- Ancillary systems test documentation
- Batteries, chargers, DC supervision
- Distribution boards
- Control systems
- SCADA systems
- Station synchronising
- Protection schemes
- Primary plant functional tests
- Station Interlocking tests
- Protection fault simulation monitoring, overall performance of scheme and annunciation systems
- Signal systems

8.2 Non-Compliance

Should the Commissioner be found, through auditing or otherwise, to have carried out commissioning in such a way that will potentially compromise the safety, quality or security of the System, this shall result in a recommendation being made that the Commissioner be removed from the Commissioner Approvals Register by ESB Networks. In the event of the Commissioner being removed from the Commissioner Approvals Register, both the Contestable Commissioner Acceptance Process and the commissioning phase of the project shall be restarted.

9. Assistance and Feedback

If you need assistance interpreting this document you should contact the following as appropriate:

- Internal to ESB Networks - your Line Manager, and if necessary, the Content Owner.
- External to ESB Networks – the Lead Project Manager (Single Point of Contact) for the contestable project

Section 2 – Provisions

10. Resources

Not Applicable

11. Approvals & Certifications

11.1 Minimum Acceptance Criteria – Substations

The proposed Commissioner shall meet or exceed the following minimum requirements:

- Seven years relevant commissioning experience at or above the voltage level for which they will be assessed upon, including experience with:
    - MV, HV and or EHV substations
    - AIS/GIS/HIS primary switchgear
    - MV, HV and or EHV protection and control systems
    - GPS end-to-end testing
- Proficiency in the use of Omicron Test Universe and Omicron power system simulator test equipment
- Hold a formal engineering qualification (degree) or equivalent formal power engineering training
- Have previous utility experience and references
- Meets or exceeds CEFR level C1 English for non-native English speakers
- Have very strong computer literacy skills
- Knowledge of ESB Electrical Safety Rules

Where the substation contains multiple voltage levels, for the purpose of assessment, the Commissioner shall have relevant experience with all voltage levels that forms part of the project.

11.2 Minimum Acceptance Criteria – Overhead Lines

The proposed Commissioner shall meet or exceed the following minimum requirements:

- Seven years transmission line construction experience
- In addition, five years relevant commissioning experience at or above 110 kV
- Experience with the conductor types relevant to the project e.g.
    - HTLS
    - OPPC / OPGW
    - ACSR
- Hold a formal engineering qualification (degree) or equivalent formal power engineering training
- Have previous utility experience and references
- Meets or exceeds CEFR level C1 English for non-native English speakers
- Experience of interpreting power line Computer Aided Designs
- Knowledge of ESB Electrical Safety Rules

11.3 Minimum Acceptance Criteria – Power Cables

The proposed Commissioner shall meet or exceed the following minimum requirements:

- Five years relevant commissioning experience at or above the voltage level for which they will be assessed upon, including experience with:
    - MV, HV and EHV cable systems
    - XLPE, oil filled, gas compression and high pressure oil filled (HPOF) cables and accessories - as appropriate to the commissioning task

    - Sheath testing of cables
    - Contact resistance testing
    - Very Low Frequency (VLF) and HV testing
    - Partial discharge testing
    - Capacitance testing
    - Zero and positive sequence testing
    - Phasing of cables. This is to include circuits with GIS connections at both ends.
    - Verification of special sheath bonding systems (e.g. current injection tests for cross bonded cable systems)
- Understanding of phasing and bonding systems for cables.
- Proficiency in the use of:
    - Bicotest AXXIS S5000, S271T transmitter ("MAGPIE"), or similar equipment
    - Oil test equipment for oil filled cables
    - VLF test equipment
    - HV test equipment
    - Partial discharge test equipment
- Hold a formal engineering qualification (degree) or equivalent formal power engineering training.
- Have previous utility experience and references
- Meets or exceeds CEFR level C1 English for non-native English speakers
- Have very strong computer literacy skills
- Knowledge of ESB Electrical Safety Rules

12. Equipment and Tools

All test and measuring equipment used during the commissioning phase shall be calibrated by an ISO accredited calibration facility.
All protection intelligent electronic devices (IEDs) shall be tested using Omicron CMC test equipment. The test plans shall be submitted to ESB Networks for review no less than 40 Business Days prior to commissioning commencing. For primary plant commissioning, testing shall be carried out using equipment capable of generating a test report e.g. Omicron CT analyser or Omicron CPC100. Manually created test reports are not acceptable.

13. Contestable Commissioner Acceptance Process

Commissioning is a critical phase of the construction process which relies on the competence of the nominated Commissioner to ensure successful delivery of the overall project. The Commissioner shall be responsible for ensuring that the asset is:

- Fit for purpose
- Compliant with the EirGrid or ESB Networks specifications
- Compliant with the Grid or Distribution Codes
- Safe to maintain and operate
- Compliant with the Safety Health and Welfare at Work (General Application) Regulations 2007 (SI 299/2007)

Therefore, it is of critical importance that the Commissioner, who provides these assurances, is suitably competent.

The following three stage acceptance process shall apply to each Commissioner who will be responsible for the commissioning and issuing of the final DOF for the contestably built station, overhead line and/or underground cables.

13.1 Contestable Commissioner Acceptance Process - Stage 1

The Customer shall assess and check the proposed Commissioner against the minimum acceptance criteria outlined in section 11.

The proposed Commissioner shall meet or exceed the minimum acceptance criteria.

Provided the proposed Commissioner meets or exceeds these requirements, the Customer shall issue a Declaration of Competence together with a Curriculum Vitae (CV) for the proposed Commissioner to ESB Networks.

The Lead Project Manager (LPM) of the ESB Networks Renewables Delivery Team shall be the person to receive the Customer's Declaration of Competence in respect of the proposed Commissioner.

The Declaration of Competence shall be issued no less than 20 weeks prior to the proposed commissioning start date.

The individual proposed Commissioners shall not have been involved in the design, procurement, construction or pre-commissioning of the Contestable Components.

13.2 Contestable Commissioner Acceptance Process - Stage 2

After submitting the Declaration of Competence outlined in stage 1, the proposed Commissioner may be requested to attend a technical interview with representatives from ESB Networks. The purpose of this interview is to confirm the credentials of the proposed Commissioner and to ensure that they meet the prescribed minimum acceptance criteria defined in section 11.

13.3 Contestable Commissioner Acceptance Process - Stage 3

Successful candidates from stages 1 and 2 shall subsequently be recommended by the HV Commissioning Manager, ESB Networks to the Operations Manager, ESB Networks for formal acceptance on to the ESB Commissioner Approvals Register for the Customers project no more than eight weeks after receiving the Declaration of Competence.

The Commissioner shall be removed from the Commissioner Approvals Register once the project has been energised.

For the avoidance of doubt, the Commissioner shall complete the Contestable Commissioner Acceptance Process for each project.

13.4 Contestable Commissioner Acceptance Process – Appeals Process

13.4.1 Rights of Appeal

Should the proposed Commissioner be unsuccessful in either Stage 1 or Stage 2 of the commissioner acceptance process as outlined above, a right of appeal exists.

Rights of appeal exist for the Customer against the following decisions:

i. Refusal to allow the proposed Commissioner to progress to Stage 2 of the commissioner acceptance process due to their credentials failing to meet the minimum acceptance criteria outlined in section 11.
ii. Refusal to allow the proposed Commissioner to progress to Stage 3 of the Commissioner Acceptance Process.

13.4.2 Notice of Appeal

Unsuccessful candidates from stages 1 and 2 of the contestable commissioner acceptance process may appeal the decision, within the time specified in section 13.4.3, by emailing the HV Commissioning Manager, ESB Networks at the following email address: **contestablecomm@esb.ie**

13.4.3 Time of Appeal

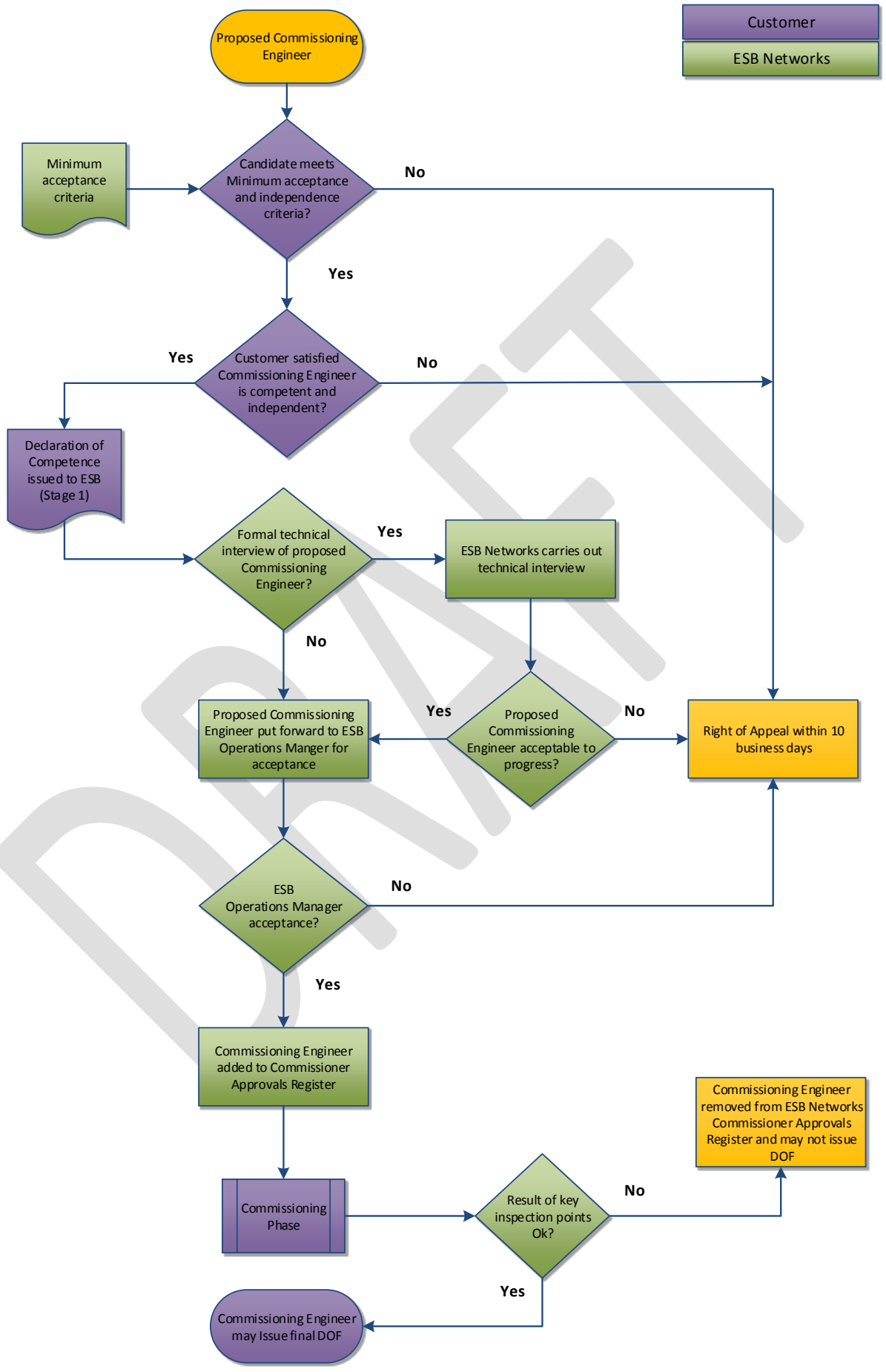
The notice of appeal should be submitted to the HV Commissioning Manager, ESB Networks no later than 10 Business Days following notification of the decision from ESB.

13.4.4 Review

The HV Commissioning Manager shall review the decision the subject of the appeal and shall respond to the applicant in writing within 20 Business Days either, (i) confirming the initial decision not to allow the proposed Commissioner proceed to Stage 2 or 3 as applicable; or (ii) overturning the initial decision and allow the proposed Commissioner to proceed to Stage 2 or 3 as applicable, in which case the process shall continue as set out above.

As part of any review, the HV Commissioning Manager may call the candidate for interview or request further information from the candidate in writing.

13.5 Contestable Commissioner Acceptance Process Map



14. Commissioning, Project Completion and Handover

For the purposes of this Section 14, where more than one Commissioner is appointed in respect of the different components of a project (i.e. for the substation, overhead line and/or the underground cables), references to the "Commissioner" in this section should be construed as applying to each such Commissioner.

14.1 Pre-commissioning Phase

The pre-commissioning of contestably commissioned projects shall be rigorous, documented and have clear accountability at all stages.

The Pre-Commissioner shall ensure that:

- All construction activities are complete.
- All plant and systems are installed correctly as per design and are functionally operational.
- All plant and systems are pre-commissioned to comply with the EirGrid pre-commissioning procedures in the case of transmission connections, and the ESB Networks pre-commissioning procedures in the case of distribution connections.
- Control of the pre-commissioned plant and equipment is cleanly and formally handed over to the relevant party for commissioning.

Pre-commissioning Inspection Reports shall be documented, signed and dated. Furthermore, they shall be countersigned by the Customer prior to handover of control to the Commissioner for the commissioning phase of the project.

14.2 Commissioning Phase

Prior to the commissioning phase commencing:

- The Commissioner must have been accepted onto the Commissioner Approvals Register.
- The Commissioner shall submit a commissioning plan as detailed in section 14.2.5.
- A pre-commissioning handover shall occur during which the Pre-Commissioner will hand over the signed and countersigned pre-commissioning handover reports to the Commissioner.
- Permission to proceed shall have been granted by the HV Commissioning Manager, ESB Networks and in addition, the Eirgrid Client Engineer in the case of a transmission project.

14.2.1 Items that may not be contestably commissioned

The following shall not be contestably commissioned:

- Telecoms equipment
- Remote end station works, where the contestably built station interfaces with the existing HV system
- Equipment in a station that forms part of the existing HV or MV system
- Revenue metering

14.2.2 Items that may be contestably commissioned

The following is a non-exhaustive list of plant and equipment that may be contestably commissioned:

- Circuit Breaker
- Current Transformer
- Voltage Transformer
- Power Transformer

- Surge Arrester
- Arc Suppression Coil
- Disconnects
- Busbar and Supports
- Control cabling and wiring
- Cabinets
- Battery System
- GIS including SF6 and Ancillary Systems
- Earthing
- All Protection Schemes including end-to-end testing but not in remote end station. End-to-end testing shall be done in collaboration with an ESB Commissioner.
- SCS / non-SCS control system
- Interlocking
- Synchronising
- Phasing
- Common Systems
- Distribution boards
- Overhead Lines
- Power Cables

14.2.3 Commissioning Procedures and Standards

The Eirgrid Commissioning Procedures or ESB Networks Commissioning Procedures specify, at a high level, the minimum test requirements to be carried out by the Commissioner on all Contestable Components.

The Eirgrid Commissioning procedures apply to all transmission connected customers (≥110 kV)
The ESB Networks Commissioning Procedures apply to all distribution connected customers (≤110 kV)

Compliance with the relevant set of Commissioning Procedures is mandatory.

14.2.4 Primary Plant Fingerprint Testing

ESB Networks has obligations under the EirGrid Maintenance Policy, TAM-AMP-2008-I01, to carry out fingerprint tests to be used as a baseline measurement for future asset maintenance purposes. These fingerprinting results, and associated compliant tests result formats, are essential for ESB Networks to ensure that the optimum lifetime maintenance management of the asset can be delivered.

These tests shall be carried out on the following items of primary plant:

1. Power transformer
2. Current transformer
3. Voltage transformer
4. Circuit Breaker
5. Reactor

Access to this equipment shall be provided by the Customer following completion of the pre-commissioning phase, and prior to the commissioning phase commencing. ESB Networks shall continue to perform these tests on contestably commissioned projects subject to a satisfactory review of the pre-commissioning of these substation assets, and evaluation of the pre-commissioning handover report.

14.2.5 Commissioning Plan and Schedule

A commissioning plan detailing the commissioning works shall be submitted to ESB Networks a minimum of 40 Business Days prior to the commissioning phase commencing to enable review by ESB Networks. During the review period, ESB Networks shall select key inspection points in the commissioning plan indicating the major points for hold, witness, and review by ESB Networks. The plan shall be approved by the Commissioner responsible for the project.

The plan shall include the following:

- Scope of works: details of systems and plant items to be tested.
- Commissioning procedures, risk assessments and method statements.
- Resource plan listing all commissioners that will be involved in the commissioning works.
- A resourced Microsoft Project programme showing the logical sequence of tests and a description of these tests. For example: magnetisation curves, wiring checks, insulation checks, primary injection, and operation checks etc. Sufficient detail is required to identify at an early stage to ESB Networks, should the right to carry out key inspection point audits be invoked.
- Quality Management Plan
- References: list of drawings and document issue numbers to be used (e.g. wiring diagrams, schematic drawings, user manuals and approved configuration, and setting specifications for relays).
- Proposed format of test results .
- Instrument calibration certificates.

The following risks shall be considered and the necessary mitigating measures shall be put in-place before the plan is approved by the Commissioner:

- Provision of sufficient time and resources to carry out the commissioning works safely, accurately and completely.
- Availability of all information including Single Line Diagrams, drawings, operation and maintenance manuals, and pre-commissioning handover reports. In particular the latest approved drawings shall be available and that they shall represent the condition of the plant supplied.
- Review of the training and experience of personnel (CVs from unknown contractors).
- Review of the potential impact on the network of any errors or omissions during and after the commissioning phase.

14.2.6 Roles and Responsibilities of the Commissioner

The Commissioner shall remain in that role for the duration of commissioning activities.

The Commissioner shall be responsible for ensuring:

- That suitable standards of care, co-ordination and completeness are maintained.
- The synergy of the individual components of the electrical design and protection scheme.
- The electrical design and protection scheme perform as outlined in the functional specifications.
- The equipment is fit to be put into reliable and safe operation.

On larger projects, where more than one commissioner may be required, as identified in the resourced commissioning plan, the Commissioner shall co-ordinate all commissioning works, develop the commissioning plan, and ensure the results obtained are of an acceptable standard.

The Commissioner shall:

- Agree the start date and duration of outages in consultation with all stakeholders.
- Agree the schedule of operations for the energisation phase.
- Maintain a snag/'request for information' (RFI) list.
- Produce inspection/check sheets, test plans and test reports.
- Provide familiarisation training to future users before energisation.

- Be present on site for the entire commissioning phase of the project.
- Ensure that the commissioning is carried out in accordance with the commissioning plan.
- Verify the completeness and accuracy of the testing and the results.
- Identify any technical issues or variations from design specifications that may arise during commissioning.
- Liaise with ESB Networks, EirGrid and any third parties for interface and remote end testing of control, protection, and signals etc.

14.2.7 Single Point of Accountability for Commissioning

The philosophy of single point accountability shall be applied to the contestable commissioning process. This philosophy ensures that the Commissioner shall be responsible for the delivery of all commissioning outcomes as detailed in the commissioning plan and schedule.

14.3 Commissioning of Assets Forming Part of the MV and HV system

ESB Networks Electrical Safety Rule 4.11 requires that new apparatus shall be treated as part of the MV or HV system once it has reached a stage that it is capable of being connected readily to the system in an approved manner.

The installation of power cables or overhead lines into the compound of the substation being contestably commissioned from a point that forms part of the MV or HV system may bring the Contestable Components under the remit of the ESB Networks Electrical Safety Rules during the contestable commissioning phase.

Prior to a point where the installation of power cables/lines brings the Contestable Components in the process of being contestably commissioned to a stage where it can readily be connected to the MV or HV system in an approved manner, a stepdown period shall occur.

The purpose of this stepdown period is to transfer control of the Contestable Components to ESB Networks. Access to the substation shall be controlled by ESB Networks following the transfer of control. All Customer personnel required to remain on site to complete the contestable commissioning phase shall be inducted and approved by ESB Networks.

An approved and appointed ESB Networks Person in Charge of Work (PICW) shall be required to be present on site at all times during the remaining period of the commissioning phase. All personnel shall comply with the direction of the PICW.

This PICW will hold a Telemess for the Contestable Components indicating the boundaries within which commissioning can safely proceed.

14.4 Declaration of Fitness (DOF)

14.4.1 Review of Energisation Instructions (EI)

Prior to energisation, the relevant SO will issue a draft EI to all stakeholders at least 15 days prior to its forecast energisation date. Where the Commissioner identifies issues or queries relating to the draft EI, they shall provide written comments back to the SO within 10 days of receiving the draft EI. When all of the comments have been received by the SO and accepted or rejected, a final approved EI will be issued at least two days prior to energisation. Further information on EIs are provided in Annex B.

Provided the final approved EI has been issued and all commissioning activities are completed, the Commissioner shall certify, by issuing a DOF(s), that the apparatus conforms to the required specifications and is in a fit state to be connected to the system.

14.4.2 Requirements of the DOF

Acceptance of the DOF shall be subject to the successful outcome of key inspection point audits where these have been carried out.

The DOF(s) shall:

- Be submitted by the Commissioner who will sign and date the document.
- Include the following information:
    a) DOF provider's name.
    b) A brief description of the work that has taken place.
    c) Itemised list of all equipment deemed fit to be connected to the EHV, HV or MV system as per the energisation instruction(s).
    d) The Energisation Instruction reference number.
    e) The DOF reference number.
    f) Any reference document that applies e.g. documents issued by SOs such as Voluntary Outages (VOs) or Forced Outages (FOs).
    g) A declaration that the plant is declared fit for service and complies with SI 299 of the 2007 Construction Regulations (General Applications).
- Be underpinned by all relevant technical documentation and supporting information associated with the commissioning process as detailed in section 14.5.
- Be issued to the SO no later than 20 Business Days prior to the energisation of the plant.

The DOF is usually provided over the telephone to the National Control Centre (NCC) or Distribution Control Centre (DCC). The NCC or DCC will confirm that the name of the person providing the DOF(s) is on the Commissioner Approvals Register. They will then issue the provider with a DOF reference number. This number should be noted on a physical record of the DOF which should be submitted in writing to the SO after all switching has been completed.

For DSO and TSO Customers, a signed copy of the DOF shall also be emailed to dof@esb.ie no later than two days after the actual DOF has been verbally communicated to the SO. In addition, for TSO customers, the DOF shall be emailed to commissioning@eirgrid.com.

14.5 Supporting Documentation and Test Results

Supporting documentation shall be provided as requested by ESB Networks and shall, as a minimum, include:

- Pre-commissioning documentation
- Customers commissioning procedures
- Calibration certificates
- All primary equipment test documentation incorporating the following:
    - Plant rating plate details
    - Equipment test results
    - Factory Acceptance Test (FAT) Test Reports
    - HV Test Certificates
    - Earth grid Installation Certificate
- Test documentation for station ancillary systems including:
    - Battery discharge test results
    - Charger manufacturer tests details and site test results
    - DC Supervision units test results
- Protection/Control systems test reports including:
    - Omicron Test Reports (including .occ files) with all protection relay data entered.
    - Details of functional tests including verification of alarms to local and remote databases
    - Highlighted signal list (proving that all signals were tested to the relevant control centres)
- Interlocking test report
- Earth grid test report
- Primary stability test reports
- Fully completed and signed General Asset Registration (GAR) sheets for all equipment

This suite of supporting documentation and certification shall be provided with the DOF to ESB Networks for verification prior to energisation.

14.5.1 As-built Drawings

Two copies of the drawings and a full drawing schedule are required during on-site commissioning work. Please note:

1) The first copy shall be marked up by the Commissioner as changes take place and shall remain on site at all times.
2) The second copy shall be marked up by the Commissioner to enable the as-built drawings to be created and stored electronically.

Once a hardcopy of the as-built drawings in point 2 (see above) are returned to the site, all earlier versions shall be removed.

14.5.2 Protection Settings and Configurations

The protection settings and configuration for ESB Networks owned assets are provided by either ESB or EirGrid. Prior to energisation, an electronic as-built copy shall be made available for storage in the settings providers' document management system.

Where the settings provider is ESB Networks, the following documentation shall also be returned:

1) Summary Protection Commissioning Report (SPCR)
2) Protection Settings Application Record (PSAR)

Annex A. (Mandatory) Declaration of Competence Template

Commissioner Details	
Commissioner	*[Commissioner Name Here]*
Commissioner Company:	*[Enter Commissioner Company Name Here]*

Commissioner Declaration	
Have you previous experience/training on the particular plant (or similar) that you are proposing to commission?	Yes/No
Details of previous experience/training similar to this Commissioning scope of works : *[Reference project, date of Commissioning, what you Commissioned, how it is similar to the Contestable Components you now plan to Commission]* I, hereby declare that all the information given in this Declaration of Competence is correct and I am competent to carry out all commissioning tests on the *[xx]* kV station / overhead line / power cable at *[Project Name]* in accordance with S.I. No. 299/2007 - Safety, Health and Welfare at Work (General Application) Regulations 2007 (as may be amended).	

Signed by: (Commissioner)		Date: / /20

Declaration of Competence		
I, *[Customer Name]*, nominate *[Commissioner Name]* to fulfil the role of Competent Commissioner as set out in the *Contestable Commissioning Specification to commission the [xx]* kV station / overhead line / power cable at *[Project Name]* for *[Customer Name]*, *[Address of company]*. I declare that *[Commissioner Name]* meets or exceeds the minimum acceptance criteria outlined in section 11 of this document and is competent to carry out all commissioning tests on the *[xx]* kV station / overhead line / power cable at *[Project Name]* in accordance with S.I. No. 299/2007 - Safety, Health and Welfare at Work (General Application) Regulations 2007 (as may be amended). *[Commissioner Name]* is experienced and fully trained on all electrical equipment and commissioning test procedures required to certify the *[xx]* kV station / overhead line / power cable at *[Project Name]*. I also declare that *[Commissioner Name]* has not been involved in the procurement, design, installation and pre-commissioning phases of the project.		
Signed by: (Customer)		Date: / /20

Project Details	
Project Name:	
Project location	

Annex B. (Informative) Energisation Instructions (EIs)

A.1. What is an EI?

An EI is a detailed step by step switching procedure for making switchgear or equipment "live" for the first time (thus proving the HV insulation) using proven protection (see definition at 5.4). This allows for the energisation of new HV plant or equipment in a controlled and safe manner while providing protection to any existing plant, and safety to personnel. The EI procedure typically consists of:

a. Description of the new or refurbished plant to be energised.
b. Identification of the circuit breaker that will be used to energise.
c. DOF that must be given before energising the new plant.
d. Modified commissioning settings (set down) to pertinent protection relays.
e. Switching steps (including preliminary station conditions and post- energisation state).

A.2. Why do an EI?

Using an EI mitigates the risk that the works carried out on site could result in a fault, tripping or loss of supply and to maintain security of the system (by using set-down settings thus enabling accelerated trip commands). This also applies to new plant or to existing switchgear or equipment that may be compromised during maintenance or fault repair.

A.3. When is an EI Required?

Any new, refurbished or modified plant that cannot be fully demonstrated and proven fit for service before connecting to the transmission system requires an EI. What this means is that anytime the HV plant is fundamentally changed, an EI should be employed in connecting this HV plant to the transmission or distribution system. Therefore, most changes to secondary wiring (that can be tested and proven before connection to the system) do not require an EI.

A.4. What is Proven Protection?

Cubicles whereby the current transformers have "seen current" i.e. gone on load (typically 10**%** of CT primary rating), and the stability and directionality of this protection has been confirmed. It is assumed the Voltage Transformer (VT) has seen a voltage.

Annex C. (Informative) Sample Declaration of Fitness (DOF)

Declaration of Fitness for Service

To EirGrid (N.C.C.): _____

Description of Plant (As Given to N.C.C.): _____

(Note also any Operational Restrictions and/or Special Requirements for Service)
(NCC Fax No. 01-6765521)

The above Equipment has been inspected and tested in accordance with the commissioning plan and is fit for connection to the ESB____ kV System

The relevant requirements of S.I. 299/2007 have been complied with.

Signed: _____ **Date:** _____

Name of N.C.C. Person Receiving D.O.F. and D.O.F. No.

Name: _____ **N.C.C. D.O.F. No.**_____

Is D.O.F. Entered into Station Log? **Yes [ ]** **NO [ ] (**Tick as Appropriate**)**

Station Name: _____