

Guidance

RIIO-ET2 regulatory instructions and guidance: Glossary v1.1

Publication date:	19 th November 2021	Contact:	Niall MacDonald
		Team:	RIIO-ET
		Tel:	020 7901 7423
		Email:	niall.macdonald@ofgem.gov.uk

This document is part of the regulatory instructions and guidance (RIGs) for RIIO-T2 for use by the three electricity transmission owners - National Grid Electricity Transmission plc, SP Transmission Ltd and Scottish Hydro Electric Transmission plc - to enable them to complete the annual reporting requirements associated with the RIIO-ET2 transmission price control from 1 April 2021 to 31 March 2026.

This document is for people who are filling out the "Costs & Volume" Regulatory Reporting Process (C&V RRP) data templates and want to know general and specific terms for reporting data and activity.

© Crown copyright 2021

The text of this document may be reproduced (excluding logos) under and in accordance with the terms of the [**Open Government Licence**](#).

Without prejudice to the generality of the terms of the Open Government Licence the material that is reproduced must be acknowledged as Crown copyright and the document title of this document must be specified in that acknowledgement.

Any enquiries related to the text of this publication should be sent to Ofgem at:

10 South Colonnade, Canary Wharf, London, E14 4PU. Alternatively, please call Ofgem on 0207 901 7000.

This publication is available at [**www.ofgem.gov.uk**](http://www.ofgem.gov.uk). Any enquiries regarding the use and re-use of this information resource should be sent to: [**psi@nationalarchives.gsi.gov.uk**](mailto:psi@nationalarchives.gsi.gov.uk)

Contents

Foreword.....	5
1. Introduction.....	6
Guidance on Allocation of Costs and Volumes to Activity	6
2. Definitions.....	10
Section summary	10
6.6/11kV CB (GM) Primary.....	10
6.6/11kV Switch	10
33kV CB (Air Insulated Busbars).....	10
33kV CB (Gas Insulated Busbars) (ID) (GM)	10
33kV CB (Gas Insulated Busbars) (OD) (GM)	11
33kV Switch	11
33kV Switchgear - Other	11
132kV Systems.....	11
275kV Systems.....	11
400kV Systems.....	12
(All Voltages) CB (Air Insulated Busbars)	12
(All Voltages) CB (Gas Insulated Busbars) (ID)	12
(All Voltages) CB (Gas Insulated Busbars) (OD)	12
(All Voltages) Tower	12
(All Voltages) Fittings	13
(All Voltages) (Pole Line) Conductor	13
(All Voltages) OHL (Tower Line) Conductor.....	13
(All Voltages) OHL (Tower Line) Earth Wire.....	13
(All Voltages) Earth Wire Fittings.....	13
(All Voltages) Pole	14
(All Voltages) AC Submarine Cable.....	14
(All Voltages) Disconnecter (Air Insulated Busbars).....	14
(All Voltages) Earth Switch (Air Insulated Busbars)	14
(All Voltages) Busbar (Air Insulated).....	15
(All Voltages) Busbar (Gas Insulated)(ID).....	15
(All Voltages) Busbar (Gas Insulated)(OD)	15
(All Voltages) Transformer.....	15
(All Voltages) Shunt Reactor	16
(All Voltages) Series Reactor	16

(All Voltages) Tertiary Connected Reactor	16
(All Voltages) FACTS Equipment.....	16
(All Voltages) VT	16
(All Voltages) CT	16
(All Voltages) High Accuracy Metering Combined CT/VT	17
(All Voltages) Substation Cable	17
(All Voltages) Circuit Cable	17
Batteries at (All Voltages) Substation	17
Equipment labelling	18
(All Voltages) Surge Arrestors	18
(All Voltages) Post Insulators	18
Protection Schemes	18
Pilot Wire Overhead	20
Pilot Wire Underground	20
Multicore Cable.....	21
HVDC	21
HVDC Convertor	21
Convertor Transformer	21
HVDC Cable	21
HVDC Subsea Cable	21
HVDC Overhead Conductor	22
Civil Works Associated with {Activity}	22
Substation Auxiliary Supplies at (All Voltages) Substations	29

Foreword

This document contains the glossary for the electricity transmission price control. This guidance applies to reporting during the RIIO-ET2 period.

1. Introduction

- 1.1. This document is part of the regulatory instructions and guidance (RIGs) for RIIIO-ET2. The term RIGs refers to a collection of documents - our instructions and guidance, and the Cost & Volumes Regulatory Reporting data template (RRP) and commentaries the electricity transmission owners (TOs) have to fill out.
- 1.2. This document is one of a series of annexes and contains descriptions of terms used in the RRP. It should therefore be read in conjunction with the relevant annex and reporting pack.

Guidance on Allocation of Costs and Volumes to Activity

- 1.3. Where work activity on an asset involves tasks that span at least one work activity definition, i.e. asset replacement, refurbishment or maintenance, the costs and volumes for that activity should be recorded thus;
 - For non-linear assets, the costs and volumes should be recorded against the highest level activity
 - For linear assets, the costs and volumes should be recorded against the predominate activity
- 1.4. For the avoidance of doubt the hierarchy of activities, highest to lowest, is;
 - New
 - Replacement
 - Refurbishment (Major)
 - Refurbishment (Minor)
 - Repair
 - Maintenance
 - Inspections
- 1.5. Faults are a distinct category. Activities defined in para 1.6.

1.6. Where a particular task could be considered common to several assets, e.g. extension of an earth grid, the costs associated with that task will be allocated to the highest value asset or assets that form part of that intervention. An example of the priority of assets for this type of allocation is;

- Transformers
- Circuit Breakers
- Switchgear Other
- CT/VT

Table 1: Asset Intervention Definitions

Intervention	Definition	Impact on Asset Health	Trigger / Driver	Scope	Examples
New	Installation of a new asset.	Reset	Customer or network need	New asset arriving on site.	New section of overhead line required to connect a new customer
Replacement (Pre-emptive or when Repair is uneconomic)	Replacement of an existing asset due to it being at its end of life or uneconomic to repair.	Reset	Asset risk / performance / failure	New asset arriving on site.	In situ replacement of a transformer with a modern equivalent unit
Refurbishment (Major) (Pre-emptive)	Planned activities that change asset condition.	Improve	Asset risk / performance	Predominantly undertaken off-site, refurbished asset arriving on site.	Major overhaul of an air-blast circuit breaker undertaken at a refurbishment centre
Refurbishment (Minor) (Pre-emptive)	Planned activities that change asset condition.	Improve	Asset risk / performance	Predominantly undertaken on-site, refurbished/new components arriving on site.	Tower steelwork recovery. Gas circuit breaker strip-down and seal replacement
Repair (Reactive)	Activities which takes place on detection of a defect and return the asset to its normal	None / Improve	Asset defect	On-site works; components (e.g. replacement parts) arriving on site. Unless repair is uneconomic, then Replacement.	replacement of a faulted cable sealing end; replacement of a single vibration damper
Fault (Reactive)	Activities which take place after a fault has occurred and are required to, or carried out prior to, returning that asset to service. Follow up works post RTS are classed as Repair.	None	Asset Failure, Fault	On-site works; components (e.g. replacement parts) arriving on site. Unless repair is uneconomic, then Replacement.	Any post fault intervention on any asset that is carried out prior to returning that asset to service.
Maintenance (Pre-emptive)	Planned activities required to achieve asset life and ensure asset performance.	None	Policy	On-site works; 'consumable' components (e.g. gaskets) arriving on site.	12-yearly major maintenance of a circuit breaker
Inspections (Pre-emptive)	Planned activities to routinely inspect assets for safety/legislative	None	Policy / legislation	Generally planned and delivered on a site or route basis.	Overhead line foot patrols; Substation routines, e.g. pre-winter checks; Written Schemes of Examination

- 1.7. Where assets are not listed individually within the Regulatory Reporting pack they should typically be considered as Bay Equipment and considered a consequential asset associated with the highest value defined asset listed in the RRP. Any intervention restricted to those assets alone should be considered a Repair or Maintenance activity against their associated highest value defined asset listed in the RRP. Where these assets could be considered common to several assets, the associated costs should be allocated to the highest level asset as prioritised in 1.5 above. Where intervention on

these assets occurs as part of an intervention on a defined asset listed within the RRP costs should be recorded against that asset and activity.

- 1.8. For the purposes of Bay Equipment a Bay shall be defined as an isolatable portion of a substation, (i.e. between isolators, or between isolator and line or cable entry) containing an asset whose function is not solely to provide isolation and earthing facilities; i.e. for the evasion of any doubt, a Transformer, Circuit Breaker, Reactor as examples.
- 1.9. When recording costs against an asset intervention, all costs associated with carrying out or facilitating that intervention activity should be included. E.g. removal of existing apparatus, removal and installation of bay equipment not defined within the glossary, removal and installation of control cabinets, plant hire, plant delivery costs etc. These examples are not intended to form an exhaustive list. Where costs are common across several assets, it would be anticipated that these costs would be allocated appropriately across all assets affected.
- 1.10. We expect the Licensees to provide joint commentary on how they are ensuring consistency in their approaches to completion of the RRP.

2. Definitions

Section summary

The purpose of this section is to provide definition instructions for completing the Cost & Volumes Regulatory Reporting Pack worksheets.

6.6/11kV CB (GM) Primary

Includes - all Ground mounted Circuits Breakers (both indoor and outdoor) which form the switchboard associated with a 132kV/HV or EHV/HV transforming substation. For example, a circuit breaker switchboard comprising two transformer incomers, a bus-section and a number of feeder circuit breakers.

6.6/11kV Switch

Includes - Ground Mounted 11/6.6kV Switches & Fuse Switches (both indoor and outdoor) that do not form part of a Ring Main Unit.

Includes - 6.6 and 11kV pole or structure mounted switches that contain an insulation medium other than air.

Excludes - air break isolators, line sectionalisers, links, fuses and other pole mounted plant insulated only by air.

Any isolators and earth switches that are integral to a circuit breaker, switch, RMU should not be counted as separate items.

33kV CB (Air Insulated Busbars)

33kV (includes 22 & 25kV) Circuit Breaker

Includes - all CB designs with any arc extinction media having air (or equivalent) busbar insulation.

Excludes - CB that form part of a RMU.

33kV CB (Gas Insulated Busbars) (ID) (GM)

33kV (includes 22 & 25kV) Ground Mounted Circuit Breaker situated indoors

Includes - all CB designs with any arc extinction media having gas (not air; i.e. SF6 or alternative) busbar insulation situated indoor.

Excludes - CB that form part of a RMU.

33kV CB (Gas Insulated Busbars) (OD) (GM)

33kV (includes 22 & 25kV) Ground Mounted Circuit Breaker situated outdoor

Includes - all CB designs with any arc extinction media having gas (not air; i.e SF6 or alternative) busbar insulation situated indoor.

Excludes - CB that form part of a RMU.

33kV Switch

33kV (includes 22 & 25kV) Switch

Includes - all indoor and outdoor Ground Mounted Switches & Fuse Switches.

Excludes - Circuit breakers and RMUs.

Any isolators and earth switches that are integral to a circuit breaker, switch and RMU should not be counted as separate items.

33kV Switchgear - Other

Includes - All other switchgear, e.g., Disconnectors, Fault throwers, Earthing switches and Fuses.

Excludes - Circuit breakers.

Any isolators and earth switches that are integral to a circuit breaker should not be counted as separate items of switchgear but counted along with the circuit breaker.

132kV Systems

The lower boundary of the 132kV system should be taken as the supply terminals of the TO's customers supplied at 132kV or the transformer-side terminals of switchgear controlling the secondary (lower voltage) side of 132kV/lower voltage transformers. If no switchgear exists between the secondary side of the 132kV transformer and the primary side of an EHV or HV system transformer, the lower boundary should be taken as the secondary-side terminals of the 132kV/lower voltage transformer. The lower voltage busbars and their protection equipment at 132kV/lower voltage substations are not included.

The upper boundary of the 132kV system should be taken as the 132kV terminals of higher voltage /132kV transformers.

275kV Systems

The lower boundary of the 275kV system should be taken as the supply terminals of the customers supplied at 275kV or the load-side terminals of switchgear controlling the secondary (lower voltage) side of 275kV transformers. If no switchgear exists between the secondary side of the 275kV transformer and the primary side of an EHV or HV system transformer, the lower boundary should be taken as the secondary-side terminals of the 275kV transformer. The lower voltage busbars and their protection equipment at 275kV/lower voltage substations are not included.

The upper boundary of the 275kV system defined in the lower boundary of 400kV Systems.
For the purposes of reporting 275kV systems include all AC systems with operating voltages greater than 132kV and equal to or less than 275kV.

400kV Systems

The lower boundary of the 400kV system should be taken as the supply terminals of the customers supplied at 400kV or the load-side terminals of switchgear controlling the secondary (lower voltage) side of 400kV Transformers. If no switchgear exists between the secondary side of the 400kV transformer and the primary side of a system transformer, the lower boundary should be taken as the secondary-side terminals of the 400kV transformer. The lower voltage busbars and their protection equipment at 400kV/lower voltage substations are not included.

(All Voltages) CB (Air Insulated Busbars)

Ground Mounted Circuit Breaker

Includes - all CB designs with any arc extinction media having air (or equivalent) busbar insulation.

Recorded as an individual unit count in RRP and by primary operating voltage

(All Voltages) CB (Gas Insulated Busbars) (ID)

Ground Mounted Circuit Breaker

Includes - all CB designs with any arc extinction media having gas (not air; i.e. SF6 or alternative) busbar insulation situated indoor.

Typically recorded on a per bay count within RRP due to construction and nature of Gas Insulated Switchgear and by primary operating voltage

(All Voltages) CB (Gas Insulated Busbars) (OD)

Ground Mounted Circuit Breaker

Includes - all CB designs with any arc extinction media having gas (not air; i.e. SF6 or alternative) busbar insulation situated outdoor.

Typically recorded on a per bay count within RRP due to construction and nature of Gas Insulated Switchgear and by primary operating voltage.

(All Voltages) Tower

Overhead Line Tower

Includes - Steel lattice towers and everything that forms part of or is attached to those structures not individually listed or defined within this glossary.

Excludes - Small footprint steel masts.

Recorded per unit count and by primary operating voltage

(All Voltages) Fittings

Includes insulators and fittings on OH lines, conductor dampers, spacers.

Measured per set (i.e. one per circuit per tower or per span).

(All Voltages) (Pole Line) Conductor

Overhead Line Conductor – Pole Line

Includes - all conductor strung on poles, single and double circuits, open wire and covered conductor.

Excludes - Conductor strung on a Tower Line and any associated poles.

For reporting of Asset Replacement, this activity includes the installation of conductor only and excludes the installation of poles and pole fittings (including stay wire).

(All Voltages) OHL (Tower Line) Conductor

Overhead Line Conductor – Tower Line

Includes - all conductor strung on towers, single and double circuits, single/twin/triple/quad conductor arrangements.

Excludes - Conductor strung on a Pole Line and any associated fittings and towers.

(All Voltages) OHL (Tower Line) Earth Wire

Includes Earth Wire strung on towers.

(All Voltages) Earth Wire Fittings

Includes – earth wire fittings on OH tower lines

Includes – conductor dampers

Excludes - fittings associated with OH pole lines. Measured per set (i.e. one per earth wire per tower).

Where intervention is carried out as part of an Earth Wire replacement project and it is not possible to break out costs, costs can be recorded against the Earth Wire and volumes of fittings ignored.

(All Voltages) Pole

Overhead Line Pole

Includes - poles constructed of Wood or concrete and small footprint steel masts (both single and double circuits).

Excludes – towers.

Count as individual units and by greatest primary operating voltage

(All Voltages) AC Submarine Cable

AC Cable which is placed below the surface of the water and laid on or under the sea bed or the bed of a river or estuary whether or not designed for this purpose.

Record by unit length measurement defined in RRP and by primary operating voltage

(All Voltages) Disconnecter (Air Insulated Busbars)

A mechanical switching device which provides, in the open position, an isolating distance in accordance with specified requirements

Note – A disconnector is capable of opening and closing a circuit when either negligible current is broken or made, or when no significant change in the voltage across the terminals of each of the poles of the disconnector occurs.

Includes – Disconnectors and Fault throwers.

Excludes - Circuit Breakers.

Any isolators and earth switches that are integral to a circuit breaker or switch should not be counted as separate items.

Unit count within RRP, counted per device per circuit – i.e. not per phase, and by primary operating voltage

(All Voltages) Earth Switch (Air Insulated Busbars)

A fixed earthing switch or device which when operated provides a means of earthing conductors of any construction type.

Includes - Earth Switches, fixed Earthing devices and Fault throwers.

Excludes – Portable Earthing Devices

Unit count within RRP, counted per device per circuit – i.e. not per phase, and by primary operating voltage

(All Voltages) Busbar (Air Insulated)

Low-impedance conductor to which several electric circuits can be connected at separate points. Conductor is insulated by Air.

Per Unit Circuit Length Count within RRP, i.e. per circuit or bar, not per phase.

Includes all Busbar out with the Equipment Bay, typically referred to as Main or Reserve, and also busbar runs across or between substation sites.

With an Equipment Bay busbar shall not counted separately, but shall be treated as undefined asset and treated as described within paragraph 1.7.

(All Voltages) Busbar (Gas Insulated)(ID)

Low-impedance conductor to which several electric circuits can be connected at separate points. Conductor is housed within a pressurised vessel insulated by Gas (including dry air and other such mediums) and located indoors.

Per Unit Circuit Length Count within RRP, i.e. per circuit or bar, not per phase.

Includes all Busbar outwith the Equipment Bay, typically referred to as Main or Reserve and busbar runs across or between substation sites.

(All Voltages) Busbar (Gas Insulated)(OD)

Low-impedance conductor to which several electric circuits can be connected at separate points. Conductor is housed within a pressurised vessel insulated by Gas (including dry air and other such mediums) and located outdoors.

Per Unit Circuit Length Count within RRP, i.e. per circuit or bar, not per phase.

Includes all Busbar outwith the Equipment Bay, typically referred to as Main or Reserve and also busbar runs across or between substation sites.

(All Voltages) Transformer

Power Transformer – includes everything that forms part of, is attached to, or is necessary to allow the device to fulfil its function that is not individually listed or defined within this glossary.

Excludes - All Auxiliary Transformers, earthing transformers and arc suppression coils.

Recorded per unit, by primary operating voltage and as per the pre-fault continuous winter rating stated in the RRP pack.

(All Voltages) Shunt Reactor

A Reactor is an absorber of reactive power, thus increasing the energy efficiency of the system. It is the most compact device commonly used for reactive power compensation in long high-voltage transmission lines and in cable systems.

Shunt Reactors are connected in Parallel with the network.

Count as individual units and report by primary operating voltage.

(All Voltages) Series Reactor

A Reactor is an absorber of reactive power, thus increasing the energy efficiency of the system. It is the most compact device commonly used for reactive power compensation in long high-voltage transmission lines and in cable systems.

Series Reactors are connected between load and source.

Count as individual units and report by primary operating voltage.

(All Voltages) Tertiary Connected Reactor

Reactor connected to the tertiary winding of a Power Transformer

Count as individual units

(All Voltages) FACTS Equipment

Includes - Series Compensation, Synchronous Generators, Static VARs, Statcoms etc used to manage reactive power on the network

Excludes – Reactors

Count by installation and report by primary operating voltage.

(All Voltages) VT

Standalone Voltage Transformer, within AIS substation environment, used for the purposes of protection, measurement or control. Count as individual units and report by primary operating voltage.

(All Voltages) CT

Standalone Current Transformer, within AIS substation environment, used for the purposes of protection, measurement or control. Count as individual units and report by primary operating voltage.

(All Voltages) High Accuracy Metering Combined CT/VT

Standalone High Accuracy Metering Combined CT/VT Transformer, within AIS substation environment, used for the purposes of metering. Count as individual units and report by primary operating voltage.

(All Voltages) Substation Cable

Under Ground Power Cable, at any voltage, installed within the substation perimeter or which extends less than 1km from the substation perimeter.

Where required for reporting within the RRP, cable technologies are defined as:

Non-pressurised – cables utilising all solid state insulation

Gas Compression – cables where the insulation integrity is dependent upon maintaining pressure of an inert or insulating gas.

Oil Impregnated – cables where the insulation integrity is dependent upon maintaining a head of oil.

Reported by circuit unit length and cable rating as given in RRP pack.

(All Voltages) Circuit Cable

An Underground Power Cable not covered by the definition of Substation Cable at any voltage.

Where required for reporting within the RRP, cable technologies are defined as:

Non-pressurised – cables utilising all solid state insulation

Gas Compression – cables where the insulation integrity is dependent upon maintaining pressure of an inert or insulating gas.

Oil Impregnated – cables where the insulation integrity is dependent upon maintaining a head of oil.

Reported by circuit unit length and cable rating as given in RRP pack.

Batteries at (All Voltages) Substation

A re-chargeable battery, together with its associated charger, comprising a number of individual cells which is used to provide power to operate switchgear and protective equipment at a substation. Voltage declared as highest operating voltage at the substation.

Includes Battery Chargers and DC Distribution boards.

Count is per installation within RRP.

Equipment labelling

Identification and Safety labelling on substations and plant.

Where plant labelling and signage is carried out as a standalone activity it shall be recorded as a repair and maintenance activity associated with that asset.

The replacement of substation signage carried out as a standalone activity shall be recorded under Legal and Safety.

Where any labelling activity is carried out during a higher-level intervention in any site or asset it shall be included in that activity and not recorded separately.

(All Voltages) Surge Arrestors

Devices that protect HV equipment against the effects of electrical surges caused by faults or lightning strikes.

Consider as Bay Equipment for the purposes of reporting, report as per guidance on reporting "assets not covered in reporting pack" in paragraph 1.7.

(All Voltages) Post Insulators

Form part of a busbar or equipment support structure.

Consider as Bay Equipment for the purposes of reporting, report as per guidance on reporting "assets not covered in reporting pack" in paragraph 1.7.

Protection Schemes

Devices that protect the High Voltage electrical system from electrical faults or undesirable operating conditions.

Count as individual units as per definitions below.

Feeder Protection - Intelligent electronic device which detects faults or other abnormal conditions in a power system or power equipment's located on specific feeder circuits under its observation and instructs tripping to minimise impact of faults.

Substation Control Systems - SCADA platform for substations that provides a real-time monitoring and control with Human Machine Interface.

Mesh Corner Busbar Protection - Intelligent electronic device which detects faults or other abnormal conditions in a power system or power equipment's located on Mesh Corner Busbars under its observation and instructs tripping to minimise impacts of faults.

Circuit Breaker Fail (CBF): MC & DBB Protection - Intelligent electronic device which detects circuit breaker failure to operate and provides alternative tripping of circuits operating abnormally.

QB Control - Intelligent electronic device which detects faults or other abnormal conditions on Quadrature Boosters (Phase Shifting Transformers) under its observation and instructs tripping to minimise impact of faults.

Mesh Corner Delayed Auto Reclose (DAR) - Intelligent electronic device which detects faults or other abnormal conditions in a power system or power equipment's located on Mesh Corner Busbars under its observation and provides delays auto reclose capabilities.

Operational Tripping Scheme (OTS) - A series of Intelligent electronic devices which under fault conditions instruct tripping of known Generator (or generator groups) to avoid further system faults.

Auto Switching (Auto Close and Hot Standby Units) - Intelligent electronic device which after a fault undertakes planned switching actions to minimise disruption to system operations.

Automatic Reactive Switching (ARS) - Intelligent electronic device(s) which after a fault or certain system operation conditions undertakes planned switching actions on reactive power assets to minimise disruption to system operations.

Automatic Voltage Control (AVC) - Intelligent electronic device(s) which provide continual voltage control within a targeted voltage parameter.

Cable SCADA System - SCADA platform for cables that provides a real-time monitoring and control with Human Machine Interface.

Gas Density Monitoring (GDM) - Intelligent electronic device(s) which provides continual monitoring of Gas density within Gas Insulated equipment. Provides Alarms and if required Tripping

Settlement Metering - Intelligent electronic device which provides a high accuracy record of all amperage transfers between users of the Networks.

Back-up Protection - Intelligent electronic device which detects faults or other abnormal conditions in a power system or power equipment under its observation and only operates if other protection equipment have not identified and resolve the fault in an accepted predefined manner.

Circuit Breaker Fail (CBF): MC & DBB Protection - Replacement of individual CBF intelligent electronic devices (IED). Does not include any other IEDs.

Wound Plant Protection - Intelligent electronic device which detects faults or other abnormal conditions in any item of wound plant – Transformers, Reactors etc.

Low Impedance Busbar Protection - Intelligent electronic device(s) which provide low impedance based protection which detects faults or other abnormal conditions in busbar systems.

High Impedance Busbar Protection - Intelligent electronic device(s) which provide high impedance based protection which detects faults or other abnormal conditions in busbar systems.

Reactive Equipment Mechanically Switched Capacitor (MSC) – Intelligent electronic device which detects faults or abnormal conditions in Mechanically Switched Capacitors under its supervision. May interact with other automatic reactive switching systems.

Reactive Equipment: Dynamic compensation – Intelligent electronic device which detects faults or abnormal conditions in Dynamic Reactive systems (Statcoms, SVC, etc) under its supervision. May interact with other automatic reactive switching systems.

Fault Recorder with dynamic system monitoring - Replacement of Intelligent electronic device(s) which provide records of faults or other abnormal conditions on circuits which are under its supervision.

Bus Coupler & Section Protection -

Intelligent electronic device which detects faults or abnormal conditions in busbar systems specifically related to Bus Coupler and Bus Section Circuit Breakers. May interact with other Busbar and Circuit Breaker Fail protection.

Pilot Wire Overhead

A multicore or fibre cable, not part of an earth or phase conductor main, that forms part of a protection scheme, which:

- is suspended on poles or towers
- carries signals, currents or voltages between different substation sites.

Pilot Wire Underground

A multicore cable, not part of a power cable, that forms part of a protection scheme, which:

- is buried with mains cables or separately
- carries signals, currents or voltages between different substation sites.

Multicore Cable

A multicore cable, not part of a power cable, that forms part of a protection or control scheme, which:

- is contained within the confines of a substation site
- carries signals, currents or voltages between the protection/control panel(s) within the control room and the marshalling kiosk(s) before distribution to the HV electrical assets.

Where a Marshalling Kiosk is a protected compartment or container associated with an electrical plant installation and housing terminations for alarms, trips, controls and similar devices fitted to the installation concerned.

HVDC

HVDC Converter

Equipment for the conversion of AC Electricity to DC Electricity and vice versa.
Includes Convertors, Filters, Smoothing Capacitors

Converter Transformer

Transformer used to step up/down voltage required for DC Equipment at an HVDC installation. Count per installation not per phase

HVDC Cable

Underground cable used for the transmission of DC Electricity between Converter Stations

Includes Cable Sealing Ends

Reported by unit length as given in RRP pack.

HVDC Subsea Cable

DC cable which is placed below the surface of the water and laid on or under the sea bed or the bed of a river or estuary whether or not designed for this purpose.

Reported by unit length as given in RRP pack.

HVDC Overhead Conductor

DC Overhead Line conductor irrespective of structure type.

Includes - conductor, spacers, dampers.

Excludes – fittings, insulators

Overhead structures, fittings, insulators etc should be counted as their closest AC operating voltage equivalent.

Civil Works Associated with {Activity}

Civil works directly associated with the intervention in question, i.e. works that would not have been undertaken had the intervention not happened.

Count as individual supports or units associated with the definitions below and as listed in RRP.

Temporary Works

Temporary works – storage - Any storage building/container used during the construction works which is/are not retained as a permanent asset at the end of the construction works.

Temporary works - welfare / catering - Any welfare / catering buildings used during construction works which are not retained as a permanent asset at the end of the construction works.

Temporary works – accommodation - Any accommodation buildings used during construction works which are not retained as a permanent asset at the end of the construction works.

Temporary works - heating/lighting/power - Any Heating Lighting and Power assets used during construction works which are not retained as a permanent asset at the end of the construction works.

Temporary access (clearance for installation and removal) - Any works to remove obstacles preventing access to site(s) of works. Includes reinstatement of cleared works where applicable.

Temporary access (roads/tracks and removal) - Any non-permanent access route (or parts of access route) used to facilitate access to the site(s) of works. Includes removal of non-permanent access where applicable.

Temporary access (drainage and removal) - Any non-permanent works to facilitate drainage for the site(s) of work. Includes removal.

Temporary access (other) - Any non-permanent works, not defined above, used to access site(s). Includes removal.

Site Access Permanent Works

Clearance - Any permanent site(s) clearance works to enable construction activities. Does not include Peat or Rock Removal.

Drainage - Any permanent site(s) drainage, including associated offsite works with independent water companies. This includes pipework, septic tanks, site interceptors, etc.

Tracks/roads - Any permanent roads or track works for site(s) access. The interface point is the ownership boundary to independent private or public road. This may be the extension to a road or junction connections.

Other - Any permanent site access works not covered above.

Route Access Permanent Works

Clearance - Any permanent route clearance works (OHL or Cable).

Drainage - Any permanent route drainage, including associated offsite works with independent water companies. This includes pipework, septic tanks, site interceptors, etc.

Tracks and roads - Any permanent roads or track works for route access. The interface point(s) are the ownership boundaries to independent private or public roads. This may be the extension to a road or junction connections.

Public road works and bridge strengthening - Any permanent public road and bridge strengthening works. Does not include any roads or bridges constructed as access by the licence, for the project or historically.

Substation Platform

Platform Creation - The creation of the single (or multiple) level ground for substation construction. This includes any permanent space for temporary welfare on site.

Excavation: Removal and processing/disposal of rock - The process of removal and processing of rock to a location not adjoining the site(s). Cut later used as fill is included in platform creation.

Excavation: Removal and off-site disposal of peat - The process of removal and handling of peat from site to an offsite non-adjacent site. Does not include peat being processed and removed to adjacent positions on the site.

Ground stabilisation - The use of ground stabilisation via addition of materials to avoid removal and/or replacement of materials needed for the establishment of substation platform creation.

Drainage - Any permanent substation drainage, including associated offsite works with independent water companies. This includes pipework, septic tanks, site interceptors, etc. this does not include flood defences.

Site Roads & Hardstanding's - Any Substation Roads within the substation perimeter., this includes any surfaced areas for vehicle parking.

Landscaping / Screening - The installation of visual amenity works with the purpose of preventing line of sight view of the substation.

Trenching and multicore - The installation of trenches and ducting (lined) which allows for multicore and other auxiliary serves (excluding drainage) across the substation platform.

Buildings

Buildings – Asset - Buildings that are for the sole purpose of housing an asset.

Includes all excavation, foundations, sub and superstructures including doors, windows, staircases and internal accesses, fire control, HVAC systems and lighting.

Excludes security alarms / security systems and Ground Stabilisation carried out across platforms.

Buildings - Non Asset – Buildings not housing assets and not used for Welfare or Storage use.

Includes all excavation, foundations, sub and superstructures including doors, windows, staircases and internal accesses, fire control, HVAC systems, lighting and plumbing.

Excludes security alarms / security systems and Ground Stabilisation carried out across platforms.

Buildings - Combined Use - Buildings with multifunctional (asset & non asset) use. Combined GIS halls and control buildings for example.

Includes all excavation, foundations, sub and superstructures including doors, windows, staircases and internal accesses, fire control and HVAC systems, lighting and plumbing.

Excludes security alarms / security systems and Ground Stabilisation carried out across platforms.

Buildings - Welfare/Storage (permanent) - Buildings with the sole use of providing permanent welfare and storage facilities on site.

Includes all excavation, foundations, sub and superstructures including doors windows, staircases and internal accesses, fire control, HVAC systems, lighting and plumbing.

Excludes security alarms / security systems and Ground Stabilisation carried out across platforms.

Physical site security

Building hardening - Any works to an existing building which are specific to the CNI requirements of the site as defined by the CNI guidance for the site.

Clearance - Clearing works to enable any Security related works.

General Security – Any works associated with the General (non – CNI) site security.

Cables

Substation Cable –

All civil works associated with the installation or laying of a cable. All report per unit length and cable ratings as defined in the RRP Pack

Circuit Cable –

All civil works associated with the installation or laying of a cable. All report per unit length and cable ratings as defined in the RRP Pack

AC submarine cable –

All civil works associated with the installation or laying of a cable. All report per unit length and cable ratings as defined in the RRP Pack

Cable Bridge - An above-ground structure which carries power cables and/or pilot cables external to substation sites. Includes access, security, fire protection, purpose-built free-standing structures and structures attached to or part of third party assets, e.g. road and rail bridges.

Count as individual structures as stated in RRP

Cable Tunnel - A tunnel (accessible by personnel) either underground or contained within an existing structure, containing power cables and/or pilot cables external to substation sites. Includes access, security, drainage, lighting, ventilation, fire protection, communications, and structural integrity.

Count as individual structures as stated in RRP

Multicore Cable - Any permanent support structures for multicore cabling

Count per installation as stated in RRP.

Wound Plant

Transformer - Any permanent structure used to support a power transformer and any directly associated assets specific to the transformer.

For indoor installed transformers only include works not covered under Buildings above.

Shunt Reactor - Any permanent structure used to support a Shunt Reactor and any directly associated assets.

For indoor installed shunt reactors only include works not covered under Buildings above.

Series Reactor - Any permanent structure used to support a Series Reactor and any directly associated assets.

For indoor installed series reactors only include works not covered under Buildings above.

Tertiary connected reactor - Any permanent structure used to support a Tertiary Connected Reactor and any directly associated assets specific to the transformer.

For indoor installed transformers only include works not covered under Buildings above.

Circuit Breakers

Circuit Breakers (Air Insulated Busbars) (OD)&(ID) - Any permanent structure used to support a circuit breaker and any directly associated assets specific to the circuit breaker.

For indoor installed circuit breakers only include works not covered under Buildings above.

Reported against voltage categories as defined in the RRP pack.

Circuit Breakers (Gas Insulated Busbars) (OD)&(ID) - Any permanent structure used to support a circuit breaker and any directly associated assets specific to the circuit breaker.

For indoor installed circuit breakers only include works not covered under Buildings above.

Reported against voltage categories as defined in the RRP pack.

Disconnecter – Any permanent structure used for the exclusive purpose of supporting a Disconnector or a combined Disconnector/EarthSwitch Arrangement.

For indoor installed Disconnectors only include works not covered under Buildings above.

Reported against voltage categories as defined in the RRP pack.

Earth Switch - Any permanent structure used for the exclusive purpose of supporting an Earth Switch or Earthing Device.

For indoor installed Earth Switches only include works not covered under Buildings above.

Reported against voltage categories as defined in the RRP pack.

Busbars

Busbar Supports and Post insulators – Any permanent structure or support that has the purpose of supporting busbars, as defined in this glossary.

For indoor installed busbar only include works not covered in Buildings above.

Overhead Lines

Pole Foundation –

Reported against voltage categories as defined in the RRP pack.

Tower Foundation –

Reported against voltage categories as defined in the RRP pack.

Other Route Civil Costs –

Any works not covered in the descriptions above. Reported against voltage categories as defined in the RRP pack.

HVDC

HVDC Converter Transformer (OD) - Any permanent structures used to support and facilitate operations for HVDC Converter Transformers.

HVDC Onshore Cable – Any permanent structures used to support and facilitate operations for HVDC onshore cables.

HVDC Subsea Cable – Any permanent structures used to support and facilitate shore side operations for HVDC Subsea Cables

HVDC Overhead Conductor – Any permanent structures used to support and facilitate HVDC Overhead lines systems.

FACTS Equipment

Facts Equipment (OD) - Any permanent structures used to support and facilitate operations for Outdoor Flexible AC Transmission Systems.

Preconstruction Associated With (All Voltages) – Any works ahead of construction commencing which enable development, tendering, consenting and pre contract works

Substation Auxiliary Supplies at (All Voltages) Substations

All DNO auxiliary supplies to maintain/provide substation electrical supplies.

Includes all connection/construction costs associated with supply and cabling up to the Substation LVAC board.

Counter per individual supply.

Diesel Generators & LVAC Boards

All substation contained back up generation and associated assets (tanks, fire deluge, etc) to maintain substation operational status and associated Low voltage AC Boards for substation supplies.

Includes Back Up Generators (or equivalent), cabling between generator and LVAC Board, LVAC Board.

Counts each asset as individual units within RRP, i.e. Generator and LVAC Board as separate counts.

LVAC Cabling

Low Voltage AC (or DC Supplies) cabling for substation operation. Does not include building based AC cabling.