

RIIO-T2 regulatory instructions and guidance: Glossary

Guidance

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Overview:

This document is part of the regulatory instructions and guidance (RIGs) for RIIO-T2.

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1. Introduction

Scope of this document

1.1. This document is part of the regulatory instructions and guidance (RIGs) for RIIO-T2. The term RIGs refers to a collection of documents - our instructions and guidance, and the reporting packs and commentaries the electricity transmission Network Operators (TOs) have to fill out.

1.2. This document is one of a series of annexes and contains descriptions of terms used in the RIGs. 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 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 heirarchy of activities, highest to lowest, is;

- Asset Replacement
- Refurbishment (Major)
- Refurbishment (Minor)
- Maintenance and Repair

1.5. 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 level asset. The priority of assets for this allocation is;

- Transformers
- Circuit Breakers



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- Switchgear Other
- CT/VT

2. List of definitions

A

Accounting Standards

The term encompasses Financial Reporting Standards ("FRS") 100, 101, 102 and 103 (known as the new UK GAAP) effective from 1 January 2015 and International Financial Reporting Standards and International Accounting Standards (together "IAS") and the International Financial Reporting Interpretations Committee ("IFRIC") interpretations.

Accruals and Prepayments (non ordinary level of business)

For items that are not incurred in the ordinary course of business and are atypical costs these should be recorded on a cash basis. Items in the ordinary course of business would be recorded as normal trade accruals and prepayments. These would include claim cost provisions and settlements; and holiday pay provisions.

Active Network Management - Dynamic Network Reconfiguration

As featured in the transform model developed through the smart grids forum, the pro-active movement of network split (or open) points to align with the null loading points within the network in real-time.

Activity Volumes - Inspections

The quantity of individual assets or sites that have been inspected, irrespective of the number of times that the same asset has been inspected in the reporting year. For example if an asset has been inspected four times during the reporting year, a count of one inspection would be recorded

Agency Staff

Persons who are not under a direct contract of employment with the licensee or an affiliate of the licensee but are hired through a third party or employment agency.

Allowed Related Party Margin

If the external turnover represents more than 75% of total revenue then the margin will be allowed.

All Voltages

For distribution activities, means the voltages of LV, HV, EHV and 132kV.

For Transmission activities, means;

- the recognised voltages of LV, HV, EHV, 132kV, 275kV and 400kV,
- includes any stated voltage band in within this range, i.e 220kV
- HVDC operating voltages.

Areas of Outstanding Natural Beauty (AONB)

An Area of Outstanding Natural Beauty (AONB) is an area of countryside in England, Wales or Northern Ireland which has been designated for conservation due to its significant landscape value. Areas are designated in recognition of their national importance, by the relevant public body: Natural England, Natural Resources Wales, or the Northern Ireland Environment Agency. In place of AONB, Scotland uses the similar national scenic area (NSA) designation

Asbestos Management – Containment or Removal

Where work has been carried out at a substation site to either remove asbestos or contain the existing asbestos by encapsulation or treatment.

Asbestos Management – Surveys and Signage

Where minor work has been carried out at a substation site for management of asbestos. This includes legal risk assessments of ACMs (Asbestos containing materials) and safety notices on site.

Asset

Lead assets

Lead assets are the main assets comprising the transmission network that are required for the safe and reliable transfer of electricity from one point on the network to another. Any assets of operating voltage 132kV or greater in the following seven categories are lead assets: circuit breakers, transformers, reactors, underground cables, overhead line (OHL) conductors, OHL fittings, OHL towers.

Reference to lead type assets means assets in the categories listed above of any operating voltage.

Non-lead assets

Are any assets comprising a transmission network that do not fit into the 'lead asset' definition plus assets built to maintain or improve flood or weather related resilience. Non-lead assets include lead type assets below 132kV operating voltage

Asset Register

A work sheet or group of worksheets which shows the total volume of network assets. The annual additions and disposals of network assets under various work drivers would also be recorded.

Asset Replacement

Asset replacement is an activity undertaken by a NETWORK OPERATOR to remove an existing asset(s) and install a new (i.e. not refurbished) asset. The asset replacement activity includes:

- the installation of replacement assets
- the dismantlement of existing assets (at all voltage levels) where the dismantlement is undertaken as part of the asset replacement works.

The principal assets replaced as part of a replacement project are captured as prime assets. Where associated assets are also replaced to facilitate the prime asset replacement, these are counted as Consequential Assets.

The drivers for asset replacement are predominantly asset condition, obsolescence and safety, but also environmental factors may influence the activity. Where the sole driver of the replacement of an asset is an environmental factor, then the work carried out should be classified as environmental (eg the early replacement of fluid filled cables due to fluid leakage). Where the sole driver of the replacement is metal theft, the work should be classified as metal theft remedial work and not asset replacement.

The undertaking of civil works required to facilitate the asset replacement activity are treated as a standalone activity and are specifically excluded from asset replacement activity. The civil structures that support switchgear are considered to be part of the switchgear.

Asset replacement includes:

- Assets replaced following an assessment of their condition or performance. In particular includes replacement of assets which have faulted in the past (on one or more occasions), been repaired and returned to operation and are subsequently replaced as a planned activity due to an assessment of their condition (not in response to a particular incident having occurred).
- The replacement of switchgear support structures when undertaken as part of works to replace the main plant asset.
- Assets replaced where the primary driver is to improve the ability of a network to withstand severe weather (eg resilience) such as:
 - Replacement of assets that are otherwise fit for purpose (ie in good condition or performing adequately) where the intention is to reduce the number of unplanned incidents that would occur as a consequence of a Severe Weather Event.
 - Incremental or extra costs associated with the replacement of existing assets that are planned for replacement on condition assessment or are performing poorly with assets which have a

specification that exceeds the nearest Modern Equivalent Asset (MEA).

Average Asset Lives

The expected average age at replacement as experienced by the NETWORK OPERATOR for the asset population (this is the mean value of the asset age replacement profile of the particular asset).

B

Balancing & Settlement Code (BSC)

The current Balancing & Settlement Code as published on Elexon's website.

Batteries at {Operating Voltage}kV Substations

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.

Black Start

The series of actions necessary to restore electricity supplies to customers following a total or widespread partial shutdown of the GB Transmission System. Black Start requires distribution substations to be re-energised and reconnected to each other in a controlled way to re-establish a fully interconnected system.

Black Start expenditure is associated with initiatives to improve the resilience of both the distribution network assets and the key telecommunications systems, essential to NETWORK OPERATORS and the System Operator for the organisation and coordination of resources, to achieve Black Start Resilience.

BT 21st Century (BT21CN)

The roll-out of BT's next generation communications network which replaces Public Switched Telephone Network (PSTN) with a Digital Internet Protocol (IP). Whilst effectively changing the communications protocol used on the existing network assets, it also accelerates the replacement of copper communications circuits with non-metallic optical fibre.

BT21CN - Infrastructure Enabling

The common telecommunications infrastructure, which although not directly removing reliance upon BT circuits, is required to facilitate replacement of BT circuits with alternative communications methods. This includes the costs of radio links, radio-mast structures, fibre optic cables, multiplex equipment and power supply systems.

BT21CN - Protection Communication Circuits - Replacement

Communication circuits used within power system protection schemes where signalling and information exchange is required between protection equipment at separate remote sites to allow high speed clearance of faults. The activity 'Protection Communication Circuits - Replacement' refers to the replacement of BT protection communication circuits with alternative communication circuits and all necessary work associated with the installation of these alternatives. These alternatives include self-owned communication circuits and third party leased communication circuits.

The rental or lease costs associated with third party leased circuits are **not** to be reported under 'Protection Communication Circuits – Replacement', as they are reported under 'Protection Operational Measures'.

BT21CN - Protection Operational Measures

Refers to:

- The operational activities associated with protection communication circuits installed as replacements to BT protection communication circuits. For example, rental costs associated with third party leased circuits.
- Measures carried out to remove an existing BT protection communication circuit by works to remove the requirement for a protection communication circuit from within a protection scheme.

Building

A walled construction, from brick, block or concrete, or steel frame construction which encapsulates the contents. This excludes GRP.

Buildings - Electricity

BCF emissions attributed to electricity usage in a NETWORK OPERATOR's buildings (excluding substation buildings).

Buildings Energy Usage

A category of BCF reporting which captures carbon emissions attributed to electricity usage in a Network Operator's premises, including (but not limited to) all offices, workshops, stores, and substation buildings and any other structure where the

Network Operator has authority to introduce and implement its operating policy. This reporting category also includes all building related fuel combustion (natural gas, diesel and other fuels).

Buildings - Other Fuels

BCF emissions attributed to the use of all fuels except electricity in a Network Operator's buildings (excluding substation buildings).

Business Carbon Footprint (BCF)

A measure of the total greenhouse gas emissions (in tonnes of CO2 equivalent) resulting from operations on which the Network Operator has full authority to introduce and implement its operating policy and contractors emissions.

Business Rates Payments

Has the meaning given to it in CRC 2B (Calculation of Allowed Pass-Through Items) of the electricity distribution licence. Also known as Cumulo or network rates.

Business Support Costs

Collectively includes the activities, which are all separately defined in this Glossary, of:

- Core Business Support which comprises:
 - HR
 - Non-Operational Training
 - Finance & Regulation
 - CEO etc
- IT & Telecoms (Business Support)
- Property Management (Business Support).

Business Transport

Business Transport is a category of BCF reporting arising from travel undertaken by staff travelling to locations that are other than their normal place of work or moving between sites for purposes such as meetings.

C

Cable

An underground conductor used to distribute electrical power, typically buried directly in the ground or installed in ducts or troughs. This excludes underereaves or mural wiring.

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, eg road and rail bridges.

Cable Bridge - Inspections

The inspection of cable bridges (all voltages) including fixtures and fittings and associated plant, eg access arrangements and lighting etc. This includes safety & security and condition/structural surveys.

Cable Overlays

An alternative expression for the replacement of an existing underground cable with a new underground cable. The activity includes the installation of the new underground cable, the full decommissioning of the existing underground cable, any necessary underground cable jointing and any associated network operations.

Cable Pit

A below-ground structure that allows access to the underground cable network.

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.

Cable Tunnel - Inspections

The inspection of cable tunnels (all voltages) including fixtures and fittings and associated plant, eg sump pumps, lighting etc. This includes safety and security and conditional/structural surveys.

Carbon Emission

The release of carbon into the atmosphere; when considering carbon emissions greenhouse gas emissions are often also being taken into account. Within the BCF GHG emissions, eg SF₆ emissions, are calculated as equivalent carbon dioxide emissions.

Catastrophic Failure

Means a fault/defect where energy is expelled. The incident may/could have resulted in an injury or fatality.

Cash Basis

All costs incurred and paid in cash or normally paid in cash, subject to short timing differences, as part of the ordinary level of business.

INCLUDES:

- all provisions, accruals and prepayments that are incurred as part of ordinary level of business activities, these include holiday pay provisions, normal trade accruals and prepayments, and which are expected to be paid within the entities standard terms of business
- exceptional events that do not meet the Severe Weather 1-in-20 event definition
- the cost of assets acquired under a finance lease excluding finance interest
- cash payments for the utilisation of a provision.

EXCLUDES:

- all provisions relating to atypical events
- the cost or transfer value of assets acquired from a Related Party which have been previously used in or by the Network Operator
- all accruals and prepayments that relate to atypical events
- atypical cash costs.

CEO etc

Combines the activities of:

- Non-executive & group directors labour & Board meeting costs
- Management charges from Affiliates of a general non-specific nature
- Corporate communications/Community Awareness
- Legal services
- Company secretarial services.

INCLUDES:

- **Non-executive & group directors labour costs & Board meeting costs**
 - the labour and any other costs of the CEO
 - the labour and any other costs of non-executive directors of the NETWORK OPERATOR
 - the charges for senior group management and group directors not directly attributable to a specific activity
 - the costs of hosting and attending board meetings
 - where a board member provides a service to the NETWORK OPERATOR under any of the other activities (eg Finance Director of NETWORK OPERATOR is also board member), the labour costs for that board member attending board meetings should be allocated here and the remainder of his or her labour should be allocated to his or her usual activity.
- **Management charges from Affiliates of a general non-specific nature**
 - management charges from a parent or related undertaking not for a specific purpose or defined activity.
- **Provision of corporate communications/Community Awareness**

- the provision of shareholder communications, and any meetings of shareholders of the company, or of any controlling undertaking
- corporate communications
- brand advertising, including corporate image-making and notifying the public about telephone contact numbers
- customer satisfaction and similar surveys
- branding or rebranding of vehicles or buildings
- PR and general promotional activities
- sponsorship and donations.
- **Provision of legal services**
 - all legal services, whether in-house or external, excluding those relating to wayleaves/servitudes/easements.
- **Provision of company secretarial services.**
- **External entertaining.**

EXCLUDES:

- Insurance management (include under Insurance Total)
- Legal advice relating to wayleaves/servitudes/easements (include under Wayleaves and Easements/Servitudes Admin Costs).

Circuit Breaker

Device capable of making, carrying and breaking currents under normal circuit operation and also making, carrying for a specified time and breaking, fault current. Also includes auto-reclosers. It does not include any circuit breakers that form part of an RMU.

Circuit Reinforcement

Reinforcement relating to addressing a constraint on a circuit.

Civil Works

Civil engineering work associated with NETWORK OPERATOR network assets, including buildings and site works at substations.

Civil Works Driven By {Activity}

Civil works undertaken to replace or modify existing civils items primarily required to facilitate, or enable, intervention in plant assets. Excludes works on asset support structures in outdoor compounds, the costs of which are reported as part of Asset Replacement for the relevant plant asset being replaced.

The reporting of Civil Works Driven By {Activity} uses categorisations based upon the operating voltage of the replacement plant assets with which it is associated.

Civil Works Driven By Condition Of Civil Items

Civil works undertaken to replace the civils item primarily due to the condition of the civil item itself.

The reporting of Civil Works Driven By Condition Of Civil Items uses categorisations based upon the voltage of the site where the works are undertaken, which shall be taken to be the highest voltage of operation of NETWORK OPERATOR network assets used at the site.

Activities considered as Civil Works Driven By Condition Of Civil Items, at Substations, are further identified in the Task Allocation Tables in Chapter 4 of this document. These are identified under the entry for Substation (Civils).

Clerical Support – see Engineering Management and Clerical Support

Closely Associated Indirects

Collectively includes the activities listed below:

- Operational IT and telecoms
- Project Management
- Network Design and Engineering
- System Mapping
- Engineering Management and Clerical Support
- Network Policy
- Health, Safety and Environment
- Operational Training
- Stores and Logistics
- Vehicles and Transport
- Market Facilitation
- Network Planning

Condition Based Functional Failure

The inability of an asset to perform it's required function, as a consequence of the condition of asset.

A power transformer failure is defined as an event that requires the unit to be taken off the plinth either for replacement or factory repair.

A reactor failure is defined as an event that requires the unit to be taken off the plinth either for replacement or factory repair.

Failure of circuit breakers is defined as an event that requires the replacement of the breaker, or repair equivalent to the replacement of at least one head.

An overhead line is considered to have failed if a conductor drops.

Cable failures are events where a cable section, joint or sealing end has failed in service requiring its replacement.

Third party causes are not counted.

A protection or control failure is defined as an event that requires the bay (and associated primary equipment) to be removed from service to undertake repair which entails the replacement of a complete device (containing a protection or control function) without which the bay could not remain service on a continuous basis.

Compensation failure is defined as an event that requires replacement of fault-damaged components other than those normally replaced under routine maintenance.

A substation auxiliaries failure is defined as an event that requires the replacement of the entire unit.

Conductor Replacement

Removal of existing conductors and installation of new conductors. The driver for this replacement may be due to poor asset condition, obsolescence or for safety reasons.

Consequence of Failure.

As Defined in NARM methodology

Consequential Assets

Assets which are replaced along with, and to facilitate, the replacement of a prime asset. See also the definition for asset replacement.

Contractors

For the purposes of the BPDts and Annual Reporting Pack, this is a Cost Type. It represents costs incurred by contracting with organisations for the provision of services.

INCLUDES:

- Professional Services - services provided on a consultancy basis, typically items such as legal services, audit fees, taxation services.
- Subcontractor - an organisation that performs part or all of the obligations of another's contract.

EXCLUDES:

- charges for materials provided by the contractor where the cost of such materials has been separately identified by the contractor (include in Materials)
- ex principal Related Party (include in Related Party).

Control Centre

The Control Centre activity relates to:

- Operational management and control of the network
- Outage planning and management.

INCLUDES:

- Approval of planned incident proposals and switching schedules submitted by either NETWORK OPERATOR's own staff or related parties' staff.
- Liaison with Distribution companies in order to agree and prepare planned incidents that affect the transmission/DNO interface.
- Real time control and monitoring including:
 - Instructing and controlling the execution of network switching, adjusting of protection relays, issuing of safety documentation associated with both planned and unplanned incidents
 - Instructing and undertaking the remote control operation of switchgear during both planned and unplanned incidents
 - Dressing the network control diagram in line with network switching etc, undertaken during both planned and unplanned incidents
 - Updating the network control diagram in respect of sustained changes to the network
 - Prioritising incidents, including managing resource in terms of the appropriate response to unplanned incidents, ensuring appropriate decisions are taken regarding network response and customer service drivers
 - Completion of fault reports and entry into fault recording systems (eg NAFIRS)
 - Updating IT systems with information from site.
- Dispatch, which relates to the activity of dispatching resources in response to unplanned incidents and includes:
 - Interrogation of information systems to determine most appropriate resource to dispatch
 - Dispatching resources
 - Completion of fault reports and entry into fault recording systems (eg NAFIRS) for LV incidents
 - Maintaining an up-to-date, real time information log for unplanned incidents
 - Creation of unplanned incidents in any reporting system and reporting of these incidents into the fault recording system (eg NAFIRS).
- Major incidents and emergency planning:
 - Relates to the liaison with National and Regional Emergency planning committees in respect of network operations, security of supply, civil contingency, business recovery, servicing local

resilience forums and preparing for/participating in exercise scenarios both internal and external to the NETWORK OPERATOR.

EXCLUDES:

- raising and sending NRSWA notices in respect of unplanned incidents (include in Engineering Management and Clerical Support)
- completing, where appropriate environmental notifications (include in Engineering Management and Clerical Support)
- raising of service orders (include in Engineering Management & Clerical Support)
- processing Guaranteed Standard failures and associated payments (include in Call Centre (including compensation claims) activity)
- customer call taking at any time of day
- IT and property costs associated with the Control Centre.

Conversion of Wayleaves to Easements

The activity involved in retaining assets in place through purchasing easements, land or agreeing other consents in response to the potential cancellation of terminable arrangements (for example in response to injurious affection claims) or upon expiry of termed agreements.

Cost Recoveries

The recovery of costs, relating to activities.

INCLUDES:

- Insurance claim receipts
- Government funding for training schemes (In Operational and Non-Operational Training)
- Cable damage recovery payment
- Recovery of design costs for quotations where the payee does not proceed with the connection.

EXCLUDES:

- Any income received primarily for other activities where a proportion of the income relates to the recovery of the costs of Indirect Activities or Non-Operational Capex (eg capital contributions relating to connections).

Critical National Infrastructure (CNI)

As designated on BEIS's criticality scale. The data reported BPDTs should only relate to those sites classified as CNI where work as part of a physical security upgrade programme is required. Sites may be re-classified by BEIS into different categories on their criticality scale during the price control period.

Customer Contributions

The income, including normal accruals (ie matching income and cost), for an activity.

INCLUDES:

- Customer Contributions received by the NETWORK OPERATOR or related parties in respect of the provision of a new connection
- any pre-1 April 2005 Tariff Support Allowance which is held on the balance sheet as being potentially refundable contributions held at 31 March 2005 which are subsequently released should be reported as customer contributions under Connections or Reinforcement at the time of the release.

Customers Interrupted (CIs)

The proportion of total customers whose supplies have been interrupted in a year. This is calculated by summing the number of customers with an interruption of supply that lasted for three minutes or longer (excluding re-interruptions to the supply of customers previously interrupted during the same incident), multiplying by 100 and dividing by the total number of customers. It is calculated as:

$$\frac{\textit{The sum of the number of customers interrupted for all incidents} \times 100}{\textit{The total number of customers}}$$

D

Data Cleansing

The activity of detecting and correcting missing or inaccurate records.

Debt - see Net Debt

Demand Driver

One or more of the causes identified for increasing (or decreasing) demand on the network. Usually associated with new network connections, industry closures or increased load requests.

Demand Forecasting

Activity undertaken to predict the future demand on an electricity network due to changing supply and demand metrics.

Demand Side Management Payments

Includes payments made to customers to manage or reduce their maximum demand on the network at certain times. See Expenditure on DSM to avoid general reinforcement.

De Minimis Business

Has the meaning given to it in the Standard Conditions of the electricity transmission licence.

Derogation

A derogation is either a complete or partial revocation of a NETWORK OPERATOR's licence requirement that can be granted by the Authority subject to such conditions and for such periods as the Authority may consider appropriate.

Designated Areas

Areas in which Visual Amenity Projects may be undertaken.

DG – see Distributed Generation

Direct Activities

Those activities which involve physical contact with system assets.

INCLUDES:

- Labour cost of staff whose work involves physical contact with system assets. This can include the element of labour costs associated with trench excavation staff, craftsmen, technicians, technical engineers, administration and support staff, network planners and designers where a portion of their time involves physical contact with system assets, however only that portion spent on direct activities may be included. It will include idle, sick, non-operational training and other downtime of staff, which cost should follow their normal time allocations.
- Operational engineers working on commissioning of assets, physically changing protection settings, issuing safety documentation or liaising with the control centre are considered direct activities.
- The cost of contractors being the total charges invoiced by external contractors for the primary purpose of performing direct activities.
- The cost of materials drawn from stores or purchased and delivered directly to site for use in performing direct activities. In addition, this includes the cost of the materials (stores issues) for refurbishing system assets.
- Servitude and easement payments to enable the direct activity to be performed. This does not include the cost of management or administration of these.

- Related Party Margins charged by a Related Party for work performed on direct activities. In addition, includes, for the purposes of flooding, site surveys and non site based costs.

Direct Expenditure

Expenditure incurred undertaking Direct Activities.

Disallowed Related Party Margins

The portion of the Related Party margins which will not be included in Totex for the year in accordance with the relevant price control settlement. For RIIO-ET2, if the external turnover represents less than 75% of total revenue then the margin will be disallowed.

Dismantlement

The activity of de-energising, disconnecting and removing (where appropriate) network assets.

Distributed Generation (DG)

Means an installation comprising any plant or apparatus for the production of electricity that is directly connected to a licensee's Distribution System or is connected to that system through one or more electricity networks (other than through an onshore Transmission System) that are directly connected to it.

Distribution Network Operator (DNO)

Any Electricity Distributor in whose electricity distribution licence the requirements of Section B of the standard conditions of that licence have effect (whether in whole or in part).

Diversiónary Works

The service consisting of the moving of any electric lines or electrical plant in order to facilitate the extension, redesign or redevelopment of any premises on which those things are located and/or to which they are connected.

E

Earthing Upgrades

The activity of upgrading the earthing installation at an existing substation:

- to mitigate against high earth potential rise (EPR) or step and touch potentials in excess of tolerable limits where identified as an issue with the existing earthing installation, and
- where the cost of the earthing upgrade is not chargeable to a third party.

This excludes sites where earthing has been replaced due to fault or theft.

Easements

The activity of securing locations for network assets through purchasing easements. An easement is the legal right for a NETWORK OPERATOR to retain assets in a location for a determined period of time or in perpetuity without risk of interference from the owner.

Volumes should be reported once the easement is established.

EHV (Extra High Voltage)

Voltages equal to or greater than 22kV but less than 132kV.

Engineering Management & Clerical Support (EMCS)

A Closely Associated Indirect activity included in the Core CAI worksheet.

This relates to the activities of engineering and clerical support staff (ie executive managers, engineering managers, work/resource planners and clerical staff, etc) managing or assisting employees undertaking direct activities.

INCLUDES:

Strategic Network Business Plan Development and Implementation

- Development of strategic business plan for the overall distribution business
- Setting the operational and capital network investment priorities for the overall distribution business
- Establishing annual operational and capital plans to achieve strategic goals for the overall distribution business
- Managing the delivery organisational structure to achieve the long and short term company goals
- Agreeing overall resource requirements for the business (own employees, contractors, finances and outcome targets)
- Managing the overall allocation and distribution of delivery resources to achieve plans
- Managing key corporate policies and standards for service delivery;
- Leading the management team for service delivery

- Monitoring the achievement of plans
- Overseeing compliance monitoring to company technical and health & safety requirements
- Overseeing the management of teams with responsibility for service delivery.

Work Planning, Budgeting, Allocation and Control

- Monitoring delivery of major works programme
- Monitoring delivery of overall works programme
- Monitoring fault activity
- Managing budgets for inspections and maintenance, faults and major works
- Setting and agreeing performance targets, monitoring actual performance;
- Reporting and analysis of Key Performance Indicators (“KPIs”)
- Line management of staff undertaking direct activity work, including
 - Standards of performance, disciplinary and sickness absence procedures
 - Monitoring absence, back-to-work-interviews and welfare visits
- Establishing day to day work plans
- Managing the allocation tasks to achieve the delivery of operational and capital plans
- Ensuring work activity adheres to company technical and health & safety requirements.

Operational Performance Management

- Health and Safety checks on work and personnel
- Compliance checks on staff and contractors
- Site safety inspections
- Providing safety advice to cable contractors and others (to help prevent damage)
- Investigation, report and corrective action following an accident or environmental incident
- Authorisation of team members for operational and non-operational duties
- Operational safety checks.

Health and Safety

- Promoting and maintaining health and safety of employees, contractors, customers and the public, including:
 - Developing the company’s overall health and safety policy
 - Establishing procedures to comply with best practice for health and safety
 - Maintenance of records to show compliance with Factory and Health and Safety at Work Acts
 - Providing advice on security matters both for property and personnel and provision of advice on fire prevention
 - Providing safety advice to persons working in proximity to network assets.

Street Works related costs

- Street Works Admin
- Permit and Lane Rental Administration Costs
- Permit and Lane Rental Set-Up Costs

- Liaising with contractors and direct labour force to undertake remedial works following inspections (but not the cost of the remedial works)
- Updating the Street Gazetteer.

Clerical Support

The office based activities undertaken by Clerical Support staff includes:

- Updating plant and overhead line support asset inventory databases following asset commissioning and decommissioning
- Updating plant and overhead line support asset condition data following inspection and maintenance
- Dealing with verbal and written enquires for new connections, street lighting or faults
- Programming of minor works
- Issuing of work instructions
- Preparation of quotations for minor works
- Sending quotations to customers
- Customer liaison
- Liaising with contractors
- Preparing plans, schematics, notices, materials schedules and work instructions
- Preparing shutdown notices
- Environmental notifications
- Processing of claims for third party damage to the NETWORK OPERATOR's assets
- Clerical support for staff undertaking street lighting, including answering verbal and written enquiries regarding street lighting faults, dealing with instructions from lighting authorities, liaising with contractors and lighting authorities and providing statistics to local authorities
- Data gathering and the provision of evidence to support claims against third parties for damage to NETWORK OPERATOR property.

Identification and implementation of Network improvement initiatives

- Redesign of business processes
- Customer service improvements
- Where staff are specifically engaged in change and improvement activities.

EXCLUDES:

- Any Employees managing Indirect Activities (eg logistics manager) (include under the relevant indirect activity heading)
- Development of high level plans that facilitate the economic development of the distribution network (classified as Network Design and Engineering)
- Specific planning and design necessary for individual projects (classified as Network Design and Engineering)
- Responding to NRSWA notices sent to the NETWORK OPERATOR by other parties (include under System Mapping)
- Maintenance of mobile generation plant (include under Vehicles and Transport (CAI))
- Any employees engaged in maintaining the financial asset register (include under Finance and Regulation)
- Idle, down and sick time of direct field staff (include with their normal direct time in the appropriate direct activity)

- Costs of operational staff attending operational training courses (include under Operational Training)
- Training courses and training centre costs for staff relating to working on system assets (include under Operational Training)
- Engineering and health and safety training courses for staff involved in direct activities (include under Operational Training)
- Engineering and health and safety training courses for staff involved in Indirect Activities (include under HR & Non-Operational Training)
- Apprentices undertaking classroom and on the job training (include under Operational Training)
- Time of non-operational staff attending non-operational training (include as labour costs under the relevant activity of that employee)
- Time of operational staff attending non-operational training (include as labour costs under the relevant activity of that employee)
- IT or property costs associated with Engineering Management & Clerical Support (include in IT&T and Property Management Indirect Activities)
- Updating of underground cable and overhead line asset databases (include under System Mapping)
- Purchase of equipment (include under Non-Operational Capex).

Enhanced Physical Security (Capex)

Any expenditure associated with upgrading physical security assets which is undertaken as part of a Physical Security Upgrade Programme (PSUP), at sites classified as CNI.

Environment Agency (EA)

An Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs and an Assembly Sponsored Public Body responsible to the National Assembly in Wales concerned mainly with rivers, flooding, and pollution.

Environmental Caution - see Environmental Civil Sanction

Environmental Civil Sanction

An umbrella term relating to a range of civil sanctions in respect of environmental issues.

INCLUDES:

- Environmental Cautions
- Environmental Compliance Notices
- Environmental Enforcement Undertakings
- Environmental Fixed Monetary Penalties
- Environmental Prosecutions
- Environmental Reportable incidents
- Environmental Restoration Notices
- Environmental Stop Notices
- Environmental Variable Monetary Penalties

- Environmental Warnings.

An **Environmental Caution** is a written notice from the Environment Agency, Natural England, CCW, DEFRA, WAG, English Heritage, CADW or local authority requiring actions to comply with the law, or to return to compliance, within a specified period.

An **Environmental Compliance Notice** is defined by the Environmental Civil Sanctions Order (England and Wales) as a Regulator's written notice requiring actions to comply with the law, or to return to compliance, within a specified period.

An **Environmental Enforcement Undertaking** is defined by the Environmental Civil Sanctions Order (England and Wales) as an offer, formally accepted by the Regulator, to take steps that would make amends for non-compliance and its effects.

An **Environmental Fixed Monetary Penalty** is defined by the Environmental Civil Sanctions Order (England and Wales) as a low-level fine fixed by legislation that the regulator may impose for a specified minor offence.

Environmental Prosecutions are Criminal or civil charges brought against someone for environmental damage.

Environmental Reportable Incidents are environmental incidents likely to cause damage or danger to the natural environment (pollution - air, land, water, illegal waste disposal, watercourse damage, or poaching).

An **Environmental Restoration Notice** is defined by the Environmental Civil Sanctions Order (England and Wales) as a Regulator's written notice requiring steps to be taken, within a stated period, to restore harm caused by non-compliance, so far as possible.

An **Environmental Stop Notice** is defined by the Environmental Civil Sanctions Order (England and Wales) as a written notice which requires an immediate stop to an activity that is causing serious harm or presents a significant risk of causing serious harm.

An **Environmental Variable Monetary Penalty** is defined by the Environmental Civil Sanctions Order (England and Wales) as a proportionate monetary penalty, which the Regulator may impose for a more serious offence.

An **Environmental Warning** is a written notice received from the Environment Agency, Natural England, Countryside Council for Wales (CCW), DEFRA, Welsh Assembly Government (WAG), English Heritage, CADW or local authority which requires immediate action to stop an activity that is causing harm or which may cause significant harm.

Environmental Compliance Notice - see Environmental Civil Sanction

Environmental Enforcement Undertaking - see Environmental Civil Sanction

Environmental Fixed Monetary Penalty - see Environmental Civil Sanction

Environmentally Beneficial Technologies

Qualifying items where HMRC allows a claim for a 100% First Year Allowance (FYA) to be claimed against the cost of the item, which include:

- certain energy-saving and water efficient equipment, but only if the item appears on a specific list of qualifying equipment (these are known as 'Enhanced Capital Allowances (ECA)')
- new cars with very low carbon dioxide emissions
- certain vehicle gas refuelling equipment
- zero emission goods vehicles
- plant and machinery for use in certain enterprise zones.

Environmental Management System (EMS Scheme)

Processes, procedures and systems in place which are accredited and certified, typically in accordance with ISO 14001 Environmental Management System standard. The certification can be applicable to a company's whole operations or specific parts of a company's operations.

Environmental Prosecution - see Environmental Civil Sanction

Environmental Reportable Incident - see Environmental Civil Sanction

Environment Report

Has the meaning given to it in Standard Condition 47 (Environment Reporting) of the electricity distribution licence.

Environmental Restoration Notice - see Environmental Civil Sanction

Environmental Stop Notice - see Environmental Civil Sanction

Environmental Variable Monetary Penalty - see Environmental Civil Sanction

Environmental Warning - see Environmental Civil Sanction

Equipment to Manage Losses

Assets or capital projects undertaken where the primary driver is management of technical losses. Initiatives which have losses benefits but where managing distribution losses is not the primary driver are not within the scope of this definition (for example, if the installation of a low loss transformer is primarily driven by asset health reasons rather than losses).

ETR 132 – Other Work to Achieve Compliance

Circumstances where Tree Cutting ETR 132 compliance is declared and achieved without the requirement for physical work or where compliance is achieved due to work on other capital schemes.

ETR 132 – Overall Network Length Cleared and Meeting ETR 132 Compliance

The amount of physical and non-physical work that has been undertaken to achieve ETR 132 Compliance.

ETR 132 – Physical Cut

Tree Cutting ETR 132 activity that is a result of physical activity undertaken felling or trimming vegetation from around network assets. The whole circuit should be clear in order for it to be counted towards being compliant.

ETR 138

Engineering Technical Recommendation 138 (ETR 138) – ‘Resilience to Flooding of Grid and Primary Substations’

Expenditure on DSM to Avoid General Reinforcement

Direct or indirect expenditure on systems or payments to customers that enable demand to be constrained at times to reduce the requirement to reinforce the network.

External Parties

Any party which is not an affiliate, joint venture, associate or an affiliate of a relevant associate of the licensee (Opposite of Related Party definition).

External Rent

A charge for property rental reflecting actual lease payments on normal accruals basis.

Extra-high voltage (EHV)

A nominal voltage equal to or greater than 22kV but less than 132kV.

F

Fair Value

IFRS 13 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (ie an exit price).

FRS 102 defines fair value as the amount for which an asset could be exchanged, a liability settled, or an equity instrument granted could be exchanged, between knowledgeable, willing parties in an arm's length transaction.

Fault

A fault is an event which causes plant to be automatically disconnected from the transmission system for investigation and further action if required.

Fault Current Limiters

As featured in the transform model developed through the smart grids forum, the use of superconducting materials, as a form of non-linear resistor, to clamp fault current levels at HV to within predefined limits, or the application of reactors part way down a HV circuit to limit fault current.

Fault Level

The maximum fault current flowing into a direct short circuit fault (ie with no fault impedance), as would be measured at the point of fault. For a particular location a number of different fault levels may be determined. These can represent different conditions that consider nature of the fault (eg three phase - earth, or single phase - earth), duration of the fault current/operation (and operating time) of plant (eg subtransient, transient or steady state currents, 'make' conditions or 'break' conditions etc) and consideration of ac and dc components, as appropriate.

The duty imposed upon an item of plant or apparatus, during short circuit fault conditions, requires consideration of the fault current flow that results in the item itself.

Fault Level Duty > 95% of Rating

The prescribed criteria to be applied in respect of reporting the number of Switchboards/Substation Busbars where the fault level exceeds the prescribed criteria. In this context the prescribed criteria is where one or more items of switchgear have a fault level duty upon them that exceeds 95% of their individual fault current rating, for either three phase or single phase fault conditions.

The fault level duty upon an item of switchgear considers the maximum fault current flowing through the switchgear itself, under both 'make' and 'break' operating conditions (as appropriate), against the relevant fault current ratings for the operating conditions.

Fault Level Operational Restrictions

The use of operational procedures to manage the risks associated with fault level issues, including restrictions upon the operation of, or access to, switchgear or other equipment. This may require the network to be rearranged, to reduce the fault level, to permit operation or access, which in some cases may temporarily reduce security of supply.

Fault Level - Other

Investment schemes to address fault level issues where the scope of the scheme does not involve replacement of the transformer or Switchboards/Substation Busbars.

Fault Level Reinforcement

Work carried out on the existing network where the primary objective is to alleviate fault level issues associated with switchgear or other equipment.

Fault Level Reinforcement Schemes

Schemes undertaken with the primary objective of alleviating fault level issues associated with switchgear or other equipment.

Fault level reinforcement schemes should be categorised on the basis of the solution to the works. For example, where the solution, to overcome the problem of fault level duty exceeding capability of a switchboard, is to install a high impedance transformer, then the fault level reinforcement scheme should be categorised as transformers.

Fault Level Risk Mitigation

Measures to mitigate the risks associated with fault level issues.

Fault Rate

The incidence (per unit) of unplanned incidents for a specific category of Distribution Asset.

Fault Rate Asset Category

Any category of Asset for which the NETWORK OPERATOR is required to provide Fault Rate information.

Faults (PCFM Cost Type)

This is a PCFM Cost Type, which reports the costs of the following activities, with the exception of Pensions costs (which are reported in the 100% 'revenue pool' expenditure):

- Faults
- Severe Weather 1-in-20 Events
- Occurrences Not Incentivised (ONIs).

Finance and Regulation

Performing the statutory, regulatory and internal management cost and performance reporting requirements; and customary financial and regulatory compliance activities for the NETWORK OPERATOR.

Accounts Processing:

- Payments and receipts
- DUoS billing
- Credit and debit control
- Billing and credit control associated with claims against third parties for damage to NETWORK OPERATOR property.

Connections policy and agreement management:

- Connection charge policy formulation
- Un-metered connections records
- Connection agreement administration.

Financial Management:

- Internal and external audit
- Financial planning, forecasting and strategy
- Financial accounting
- Management accounting
- Statutory reporting (excluding regulatory reporting, which is in the definition for Regulation)
- Banking and treasury management
- Maintaining the financial asset register
- Taxation: Compliance, planning and management – internal and external.

Income management:

- Transmission exit charges administration
- Tariff formulation
- Revenue forecasting.

Procurement:

- Identify strategic needs for materials and services
- Conduct market analysis
- Identify potential suppliers
- Undertake background review
- Select suppliers and negotiate contracts
- Purchase order fulfilment

- Monitoring supplier performance.

Regulation:

- All costs of monitoring, complying with and updating the regulatory licence (includes collaborative work with Ofgem)
- Regulatory reporting of costs, revenues, asset data and financial resources
- Reporting of quality of service data and of other non-financial regulatory reporting required by the regulator
- The cost of any other activities imposed by a licence condition which are unique to a regulated company.
- Subscription to trade associations, eg ENA.

Settlements data management:

- Costs associated with monitoring and auditing the quality of data received from Settlements and used in DUoS and losses reporting.

The overall Finance and Regulation activity EXCLUDES:

- Insurance related costs and recoveries (include in Insurance totals)
- Maintaining the physical asset register(s); and any of the IT systems associated with finance and regulation (include under IT & Telecoms)
- Ex-gratia compensation payments and Guaranteed Standards of Performance compensation payments (include in Non Activity Based Costs).

Financial Year

For the purposes of regulatory reporting is a period of 12 months ending on 31 March of any year. A financial year to be reported under the year in which it ends (ie a financial year 1 April 2018 to 31 March 2019 to be reported as financial year '2016').

Fines and Penalties

Any fines or penalties paid by the NETWORK OPERATOR that do not fall within the categories of:

- Notice Penalties
- Inspection Penalties (part of Investigatory Inspections and Penalties)
- Overstay Fines
- Permit Penalties.

Includes all tax penalties, fines and interest.

Fire Protection Substation

The provision of fire protection system improvements including emulsifier and inert gas systems but excluding improvements to fire prevention or fire detection systems only.

Firm Capacity (FC)

The amount of energy available for distribution which can be (and in many cases must be) guaranteed to be available at a given time.

A network's firm capacity is likely to change due to network load growth or NETWORK OPERATOR interactions.

Flexible AC Transmission Systems

As featured in the transform model developed through the smart grids forum, the series or shunt connected static power electronics as a means to enhance controllability and increase power transfer capability of the network.

Floating

In relation to charges means a particular type of security, available only to companies. It is based upon an equitable charge on all the company's assets both present and future, on terms that the company may deal with the assets in the ordinary course of business.

Flood Defences

Existing or proposed physical measures to limit or eliminate the risk of flood damage to a substation or operational asset. These measures may take a number of forms:

- The construction of a waterproof subterranean "wall" around the perimeter, extending above ground (eg concrete, sheet piling).
- The construction of a waterproof wall within the site to protect specific assets eg switchgear, transformers or individual buildings (switch rooms). Specific improvements to the design of a building, eg raising walls, tanking, sealing cable troughs, demountable barriers, flood doors.
- The erection of a portable flood barrier around the perimeter of the substation using a bespoke flood defence system (if the cost/benefit assessment cannot justify a permanent defence).
- The raising of substation assets to a level above the indicated flood height.
- The relocation of the substation to a location away from or above flood risk.

Flooding Level of Protection

The level of flooding risk that is to be provided (1/100, 1/200, 1/1000) once flood defences have been installed.

Flooding Non-Site Specific Costs

Costs associated with the purchase of temporary equipment to act either as flood defences or to offset/mitigate flood risk.

Flooding Risk

The probability of flooding, as identified as part of the ENA Substation Resilience to Flooding Task Group, is to be measured as a “return period” in years to the nearest whole number, ie the average period in years that will pass without the site flooding. For example, if there is a risk of a substation flooding once in 20 years, this must be categorised as a flood risk of 1/20 (to be measured to the nearest whole number).

Flooding Risk (ETR 138)

The probability of flooding for each substation identified in ETR 138 (q.v.). ETR 138 sets out to establish predicted flood depth and other key factors that determine which substations are “at risk” ie where the predicted depth of flooding is likely to cause damage to electrical assets at the substation resulting in the loss of supplies to customers.

Flooding Site Surveys

These surveys take two forms:

- Detailed flooding site survey - Comprehensive assessment of flood risk at an individual site containing topographical survey; likely level of flood risk from potential flooding due to water courses; flooding from other sources including surface water, groundwater, reservoir failure and inadequate drainage; Hydraulic modelling where appropriate.
- Simple flooding site survey - Flooding survey to determine modelled flood zone (expressed in terms of return period); min., max. and mean depth of flooding.

Flood Mitigation

Current physical and non-physical measures of flood prevention in place on a site and/or potential improvements that reduce the risk of flooding.

Flood Mitigation Scheme

Physical works undertaken with the primary purpose of providing Flood Mitigation at a substation.

Flood Plain

An area of land adjacent to a water course, ie stream or river, that is subject to periodic flooding whenever water levels rise and exceed those of the banks of the water course.

Fluid Filled Cables

Pressurised fluid filled underground cables.

Fluid Filled Cables in Service

Commissioned and energised pressurised fluid filled underground cables.

Fluid Recovered

Fluid associated with pressurised fluid filled underground cables that has leaked from a cable and is subsequently recovered and includes:

- fluid captured in a container whilst jointing works are being undertaken
- spoil removed from site because it has become saturated with fluid during a cable leak.

In order to avoid double counting, the volume of fluid used to top up a cable in order to prevent pressure reaching the Pressure emergency level prior to jointing or repair should be excluded.

Fluid Used to Top Up Cables

Fluid pumped into pressurised fluid filled underground cables and includes fluid used to:

- bring a circuit back up to pressure from a lower pressure level
- sustain a circuit fluid pressure from reaching Pressure emergency (Pe) level prior to jointing or repair of a leak.

Fluvial Flooding

Flooding that occurs as a result of flooding from rivers and watercourses. It is closely related to Coastal Flooding and Fluvial & Coastal Flooding schemes are analysed together in the Flood Mitigation worksheets in the Costs and Volumes Reporting Pack. These two are distinguished from Pluvial or Surface Water Flooding. Flood mitigation schemes and flooding surveys will be targeted at mitigating the risk from fluvial flooding to their electrical assets.

Fuel Combustion

A category of BCF reporting which captures the emissions caused by non-building fuel usage, such as mobile plants and the stand-by diesel mobile generators that are deployed from time to time in response to planned outages or faults. This excludes fuel consumed by business or operational activities.

Fuels Other

A category of BCF reporting which captures the emissions caused by the combustion of fuels other than diesel or natural gas for non-building fuel usage, such as mobile plants and the standby mobile generators that are deployed from time to time in response to planned outages or faults. This excludes fuel consumed by business or operational vehicles.

Fugitive Emissions

Emissions that are not physically controlled but result from the intentional or unintentional releases of greenhouse gases. They commonly arise from the production, processing transmission storage and use of fuels and other chemicals, often through joints, seals, packing, gaskets etc.

Full Time equivalent (FTE) Employee

The number of normal hours worked by an employee divided by the normal hours of a full-time member of staff in an equivalent role according to his or her contract of employment.

Funds from Operations

Net income from continuing operations, depreciation and amortisation, deferred income taxes and other non-cash items. (Definition from Standard and Poor's Corporate Ratings Criteria 2006)

G

Gas Insulated Switchgear (GIS)

Switchgear with gas-insulated busbars.

Gas Natural

BCF emissions resulting from fuel combustion attributed to natural gas.

Gases Other

Fugitive BCF emissions attributed to all gases except SF6.

General and Fault Level Reinforcement – See Network Design and Engineering

Generation Connection

A new or modified connection (excluding any modification comprising only an alteration to the position of a meter) the purpose of which is to enable the Electricity licensee's system to receive a supply of electricity from the premises.

Greenhouse Gas Emission

The release of greenhouse gases into the atmosphere, including carbon emissions. Within the BCF, greenhouse gas emissions, eg SF₆, are calculated as equivalent carbon dioxide emissions.

GWh

Gigawatt hours (1,000,000,000 watt hours).

H

High Voltage (HV)

Nominal voltages over 1,000 volts but less than 22kV.

Higher Voltages

Higher voltages include HV, EHV, 132kV and above networks.

Horizontal Clearance

The horizontal distance between an overhead line and a building or structure.

HR (Human Resources)

The division focused on activities relating to employees.

INCLUDES:

- provision of the Human Resources function
- industrial and employee relations, including developing HR strategy, policies and procedures
- all costs of recruiting all new staff (operational and non-operational staff)
- monitoring equal employment opportunity
- HR involvement in staff performance development and reviews
- payroll management
- cost of communications to staff, including staff magazine and internal websites
- Pension Scheme Administration Costs that cannot be easily apportioned to activity costs.

EXCLUDES:

- any costs associated with Training (see definitions for Operational Training and Non-Operational Training)

- costs associated with staff whose line management responsibilities require them to apply HR policies (include as labour cost under the relevant activity of that employee)
- any PPF levy and pensions admin cost paid directly by the company rather than via contributions; which should be apportioned across all pension costs following the activities, where possible.

Hydro

A category of DG. Electricity generation using a hydroelectric generator.

I

Incident

Any occurrence on the NETWORK OPERATOR's transmission system or other connected distributed generation or distribution system, which:

- results in an Interruption of supply to customer(s) for three minutes or longer, or
- prevents a circuit or item of equipment from carrying normal load current or being able to withstand through fault current for three minutes or longer.

Incident on Other Systems

Any incident arising on other connected electricity systems which leads to the Interruption of supply to the customers of the licensee, including:

- DNOs
- distributed generators
- any other connected systems – which should be identified.

Indirect Activities

Activities listed below, which in most cases support work being physically carried out on network assets, that could not, on their own, be classed as a direct network activity. Indirect Activities generally do not involve physical contact with system assets, whereas direct activities do.

INCLUDES:

- Closely Associated Indirects
- Business Support Costs
- Non-Operational Capex.

Note that operational engineers working on planning and project mobilisation, preparing and planning associated with protection settings, administration of

outages, contract specification and liaising with contractors and customers are considered Indirect Activities.

EXCLUDES:

- site surveys and non site based costs associated with flooding (in Direct Activities)
- resourcing and project preparation and Second Tier bid preparation associated with Low Carbon Networks (in Direct Activities).

Indirect Costs

The costs incurred undertaking Indirect Activities.

Injurious Affection

Claims made for the detrimental effect upon property of the location of distribution network assets.

Volumes of injurious affection should be reported only when the claim has been settled and a new agreement is in place.

Insourcing

Performances of a business function internally. Insourcing is the opposite of outsourcing. Insourcing is a business decision that is often made to maintain control of critical production or competencies. For the avoidance of doubt, where a role within the organisational structure (or within a project or programme team) is filled by individual sub-contractors the cost should be included here.

Inspections

The visual checking of the external condition of system assets including any associated civil constructions such as buildings, substation surrounds, support structures, cable tunnels and cable bridges.

INCLUDES:

- Helicopter and foot patrols
- Hammer testing of poles
- High resolution photography
- All asset surveys of whatsoever nature and purpose, including asset condition surveys
- Inspection of tools (including lifting tackle inspections and pat testing)
- Reading gauges.

EXCLUDES:

- Use of diagnostic testing equipment (hammers used to test poles are not regarded as diagnostic testing equipment)
- Supervisory input to plan workloads and manage staff (include under EMCS)

- Data review except the initial recording on site (include under EMCS)
- Inspection of non-system assets (include under Property Management)
- Site surveys for flooding
- Indirect Costs
- Any of the costs associated with Repair & Maintenance.

Inspections - Foot Patrol

The inspection of overhead lines via foot patrols, carried out either as a routine activity or as a non routine activity.

Inspections - Helicopter

The inspection of overhead lines through the use of helicopters or drones, carried out either as a routine activity or as a non routine activity.

Insurance Totals

The cost of managing the insurance function and insurance premiums and claims paid out.

INCLUDES:

- the costs of managing the insurance function within the NETWORK OPERATOR or within related parties, including the arrangement and renewal of all insurance cover
- costs of Insurance Premiums
- any fees paid by the NETWORK OPERATOR to brokers for managing their insurance portfolio
- the activities of handling, processing and managing claims made against the NETWORK OPERATOR, whether covered by insurance or not
- the actual payments to Third Parties by NETWORK OPERATOR or by Related Party on NETWORK OPERATOR's behalf.

EXCLUDES:

- Ex-gratia Compensation Payments and Guaranteed Standards of Performance Compensation Payments (included in Non Activity Based Costs).

Interlocking

An electrical or mechanical system that prevents inadvertent erroneous operation of apparatus.

Installation, modification, repair or any other activity carried out on an interlocking system as a stand alone intervention shall be recored as a repair and maintenance activity against the affected asset(s).

Interruption

The loss of supply of electricity to one or more customers due to an incident. This excludes voltage quality and frequency abnormalities, such as dips, spikes or harmonics.

Intervention

A deliberate action taken by a NETWORK OPERATOR to physically alter the health or capacity of the distribution network. For example:

- Asset replacement
- Asset refurbishment
- Reinforcement to increase firm capacity for a Demand Group
- Increasing equipment fault level ratings
- Operational measures
- Permanent load transfers
- Execution of a contract for demand side response or distributed generation.

IT & Telecoms (Business Support)

Expenditure on operating and maintaining computer and telecommunications systems and applications.

INCLUDES:

- All the operating and maintenance costs of the IT infrastructure, including:
 - Configuration and new requests, for client's personal computers, laptops, printers, hand held devices and monitors
 - Security administration
 - IT procurement
 - Help desk fault management
 - Disposals
 - Hardware maintenance and operating systems (servers, firewalls, switches & ISDXs)
 - Physical IT environmental costs and maintenance (ie air conditioning, uninterruptible power supply, fire and flood prevention and detection) where these can be differentiated from the costs of property management
 - Maintenance and all the operating costs of the IT infrastructure and management costs and Applications costs
 - First and third party application software maintenance
 - Ongoing or renewal software licence and licensing fees
 - Annual fees for the maintenance of software licences, whether or not they include the right for standard upgrades or 'patches' to the software as they become available
 - Hardware maintenance and operating systems
 - IT environmental control systems
 - Data centre operations
 - IT Server/Communication Rooms maintenance

- Server/System administration
- Database administration
- Email administration
- Firewall administration
- Voice/Data LAN administration including Telephone handsets
- Enterprise management covering monitoring, backup, scheduling and capacity planning
- Disaster recovery.
- All the management and applications costs, including:
 - senior IT and Telecoms department management labour costs, except when engaged on specific infrastructure or applications
 - administration support within the IT and Telecoms activity/department
 - consumables (eg stationery, disks, moveable storage mediums)
 - other costs not relating specifically to other defined infrastructure or applications categories
 - provision, maintenance & usage costs of the Telecoms network including:
 - the cost of voice and data network circuit rentals for inter-office, home to office, Private Mobile Networks (PMRs) and field handhelds. Voice and data network, PABX, private mobile "voice" radio circuits ("PMR"), router and switch maintenance costs; Related licence fees; Usage charges for land line, mobile phones, facsimiles, field handhelds and PMR services wherever situated
 - Data usage charges
 - Call centre usage
 - Authorised home telephone account usage.
- Fees for the maintenance of software licences.

EXCLUDES:

- Ordnance survey data/licences
- Any of the property costs associated with IT & Telecoms (include under Property Management), except where the cost of specific IT environmental control systems can be distinguished from other property costs
- Operational IT & Telecoms ie IT equipment which is used exclusively in the real time management of network assets, but which does not form part of those network assets
- BT 21st Century costs
- IT & Telecoms (Non-Operational) expenditure.

IT & Telecoms (Non-Operational)

Expenditure on new and replacement IT assets which are not system assets. These include Hardware and Infrastructure and Application Software Development.

Hardware and Infrastructure Costs

INCLUDES:

- Purchase of IT equipment that is either located away from network assets, or does not directly relate to the control of those assets.
- Purchase and installation of new hardware systems (eg servers, firewalls, switches & ISDXs).

- Purchase of equipment for the physical IT environment (ie air conditioning, fire and flood prevention and detection), where these can be differentiated from Property costs.
- Purchase of Client equipment (eg desktops, laptops, monitors, printers, plotters).
- Purchase of Telecoms equipment (eg staff mobile devices) where not used exclusively in the real time management of network assets
- Hardware that is purchased as part of an IT software project.

EXCLUDES:

- Software development and upgrade costs (report under Application Software Development).
- Operational IT & Telecoms ie IT equipment which is used exclusively in the real time management of network assets, but which does not form part of those network assets (include in Operational IT & Telecoms).
- Assets associated with the telecontrol of the network (Include in Operational IT & Telecoms).
- BT 21st Century costs.
- Ordnance survey data / licences (include under System Mapping).
- Any of the property costs associated with IT & Telecoms (include under Property Management), except where the cost of specific IT environmental control systems can be distinguished from other property costs.

Application Software Development Costs

INCLUDES:

- IT software upgrade costs: New and upgraded software licences where the benefit is received over more than one year.
- Cost of software development staff employed directly by the NETWORK OPERATOR or contracted to undertake development work during the reporting year.
- Purchase and installation of new application software and their license fees.

EXCLUDES:

- Hardware that is purchased as part of an IT software project (include in Hardware and Infrastructure Costs).
- Annual maintenance charges whether or not they include standard upgrades to the software (include in IT & Telecoms (BS)).
- Ongoing or renewal software licence and licensing fees.
- Operational IT & Telecoms ie IT equipment which is used exclusively in the real time management of network assets, but which does not form part of those network assets (include in Operational IT & Telecoms).
- Ordnance survey data / licences (include in System Mapping)
- Any of the property costs associated with IT & Telecoms (include under Property Management), except where the cost of specific IT environmental control systems can be distinguished from other property costs.
- BT21CN costs.

J

K

L

Labour

For the purposes of the Cost and Volumes Reporting Pack, this is a Cost Type.

Labour costs include any form of payment, consideration or other benefit, paid or due to or in respect of employees, including the costs of temporary or Agency Staff.

INCLUDES:

- Gross salaries and wages of all employees, including payments resulting from bonus and profit-related payment schemes
- Employer's national insurance contributions
- Salary sacrifice payments
- Sick pay
- Sickness benefits
- Private health insurance
- (non pension related) retirement awards
- Death in service benefits
- Paid leave
- Company cars or payments in lieu thereof
- Standby costs -are the costs incurred when employees are on standby to be called upon if required in the event of a specified occurrence in accordance with their terms of employment
- Agency Staff
- Subsistence
- Travel
- Entertainment expenses
- Share options (including employee share purchase plans, employee share option plans)
- Medical insurance costs
- Childcare assistance
- Protective clothing
- Welfare costs.

EXCLUDES:

- Professional services
- Contractors
- Company vehicles take home over night, other than company cars (include under Labour costs)
- Small tools and equipment (include under non-operational new assets and replacement)
- Pension costs (employer only)
- Pension Deficit Repair Payments.

For all activities except operational training excludes time spent on operational training courses (include in labour under operational training).

Landfill Gas, Sewage Gas, Biogas (not CHP)

A category of DG. Electricity generation by burning gasses from landfill, sewage or biogas, but not including combined heat and power.

Large CHP ($\geq 50\text{MW}$)

A category of DG. Electricity generation using combined heat and power plant that is greater or equal to 50MW.

Legal and Safety

Investment or intervention where the primary driver is to meet safety requirements and to protect staff and the public. This does not include assets replaced because of condition assessment or to meet ESQCR regulations 17 and 18.

Licence Fee Payments

Payments by the licensee to the Authority determined in accordance with Standard Conditions of the electricity transmission/distribution licence.

Load Related Expenditure

Costs incurred by the licensee, after the deduction of customer funded reinforcement, in developing its distribution system because of:

- system reinforcement associated with shared-asset connections
- general reinforcement of the licensee's System
- fault level reinforcement of the licensee's System
- the accommodation of Distributed Generation and low-carbon devices onto the System.

Losses

A measure of the difference between units entering and units exiting the NETWORK OPERATOR network through different connection points.

Low Carbon Technologies (LCTs)

LCTs is the collective term for the following technologies:

- Heat pumps at existing connections that do not lead to a new or modified connection
- Electric vehicle (EV) chargers, both slow and fast charging, at existing connections that do not lead to a new or modified connection
- Photovoltaics (PV)
- Other renewable Distributed Generation (DG), excluding PV
- Renewable DG not connected under Engineering Recommendation G83.

LV (Low Voltage)

Voltages of 1kV and below.

M

Major Incidents and Emergency Planning – see Control Centre

Market Rent

A charge for property rental based on the rental assessment of the value of the premises on the open market and not actual payments made under the lease.

Marshalling kiosk - see Substation RTU, Marshalling Kiosk and Receivers

Materials

For the purposes of the Cost and Volumes Reporting Pack, this is a Cost Type.

The physical components that go into the make-up of a tangible asset or are used for maintenance or other duties by the licensee and related parties when undertaking activities.

INCLUDES:

- tangible items that become part of the network assets
- small tools, equipment and consumables utilised to allow work on the network and to undertake other activities
- purchase, rent or lease of vehicles (only where they are “non-operational assets”)
- fuel for the operational fleet (include under the Vehicles and Transport (CAI))
- materials provided by a contractor where the costs have been separately identified
- delivery costs of materials or stock to stores or site from the manufacturer/supplier
- postage and stationery.

EXCLUDES:

- company cars
- procurement management
- delivery costs from stores to another stores or to site
- storage of the materials, unless the purchase price includes the cost of storage by the supplier.

Medium CHP ($\geq 5\text{MW}$, $< 50\text{MW}$)

A category of DG. Electricity generation using a combined heat and power plant, of size 5MW and over, but less than 50MW.

Metering Equipment

Means an Electricity Meter and any associated equipment that materially affects its operation, and includes (if applicable) Legacy Metering Equipment

Modelling Assets

Utilising optimisation tools and techniques to maximise the use of assets and forecast performance in future years. The modelling should take into account risk and likelihood of failure of particular assets, the impact and consequences. NETWORK OPERATORS will use the outputs from network modelling to inform decisions and develop network operating plans.

Multiple Circuit

Two or more circuits of the same construction voltage at HV or above which are laid in close proximity and would be expected to be installed in a common trench or corridor, set of ducts or tunnel.

A dual circuit refers to two circuits, which is the most common multiple circuit arrangement.

MVA (Mega volt amperes)

Volt-ampere is a unit of electric power equal to the product of one volt and one ampere, equivalent to one watt power is a unit used for measuring apparent power.

MWh

Megawatt hours (1,000,000 Watt hours).

N

National Parks

See Areas of Natural Beauty

National Scenic Areas

See Areas of Natural Beauty

Net Debt

The net borrowing of a business at a given date.

INCLUDES:

- cash at bank
- bank overdrafts
- short term investments
- external borrowings (adjusted to reflect the ultimate liability in sterling resulting from any cross currency swaps relating to that debt instrument and excluding the impact of fair value adjustments and accrued interest).
- inter-company borrowings
- short term loans to related parties (except where they have demonstrated the characteristics of being long term in nature, for example by repeated renewal)
- long term loans to related parties only where they can be justified as for the benefit of the regulated business and are not in the nature of a distribution.

Inter-company debtors/creditors/working capital: where these can clearly be identified as such, they are excluded. However, if they cannot, because the licensee does not clear these balances on a regular basis, they will be treated as effective intercompany loans and included in net debt.

EXCLUDES:

- year end balances of fair value adjustments on derivatives in regulatory accounts (except cross currency swaps)
- unamortised issue costs
- fixed asset investments where not readily converted to cash
- preference shares
- long term loans to related parties except where they can be demonstrated as for the benefit of the regulated business and are not in the nature of a distribution
- short term loans to related parties except where they have characteristics of long term loans.

Net Interest

Actual net interest (payable less receivable) for the price controlled business extracted from regulatory accounts, used on an accruals basis and total interest on index-linked debt based on the charge to the income statement in regulatory accounts.

INCLUDES:

- actual net interest (payable less receivable) for the price controlled business extracted from regulatory accounts, used on an accruals basis
- interest on index-linked debt based on the charge to the income statement in regulatory accounts (ie on an accruals basis) .

EXCLUDES:

- any interest that would otherwise be included, but which does not qualify for corporation tax relief
- movements relating to pension fund liabilities reported in the regulatory accounts within net interest
- fair value adjustments (eg losses on derivatives)
- dividends on preference shares
- the cost of retiring long term debt early (including exceptional debt redemption costs)
- debt issuance expenses (including amortisation charges relating to discounts on debt issuance that had previously benefitted from a deduction against taxable profits)
- the cost of maintaining committed undrawn liquidity backup lines (ie commitment fees).

Network Assets

Operational network assets (excluding metering related costs) recorded in balance sheet as fixed assets, which are subsequently sold/disposed.

Network Design & Engineering

A Closely Associated Indirect activity included in the Core CAI worksheet.

Network Design and Engineering activity falls into two main categories:

- development of high level plans that facilitate the economic development of the licensee network
- specific planning and design necessary for individual projects.

Development of high level plans that facilitate the economic development of the distribution network includes:

- Maintenance of network design data models
- Network-wide demand forecasting
- Systematic identification of network design deficiencies (eg network modelling and analysis to identify of the need to undertake general or fault level reinforcement on licensee networks)
- Preparation of long term development statements
- Network Modelling associated with determination of Use of System Charges.

Specific planning and design of individual projects includes:

- Connection Projects
- Load forecasting

- Network modelling
- Network and engineering design of the network to accommodate Connection Projects, specific changes in either demand or distributed generation and all aspects of the “non-load new and replacement asset installation” activity
- Provision of connection charge quotations
- Approval of network designs undertaken by other parties, such as independent connection providers, Independent NETWORK OPERATORS and related parties
- The surveying of a specific overhead line in order to identify the detailed work required to address an identified problem/issue
- The determination of land profiles to select the routes and pole sizes for new or replacement lines
- The surveying associated with new and existing operational sites in order to identify detailed work requirements
- Network performance monitoring and evaluation of impact of salient policies
- Planning and design of Connection Projects including those which do not progress beyond the enquiry stage
- Planning new projects up to the point of authorisation.

Network Design and Engineering excludes:

- The surveying, patrolling or inspection of system assets to collect condition information (include in Inspection and Maintenance)
- Any IT or property costs relating to Network Design & Engineering (include in IT&T and Property Management Indirect Activities).

Network Investment

Includes all costs associated with the following activities:

- Load Related Expenditure
- Non-load related capex (excluding non-op capex)
- Standalone funding (RAV).

Network Policy

A Closely Associated Indirect activity included in the Core CAI worksheet.

This activity consists of the development and review of environmental, technical and engineering policies, including all research and development apart from any defined as NIA (see exclusions).

INCLUDES:

- evaluating the impact of changes in relevant legislation
- development, regular review and updating of engineering policies, such as those for:
 - Asset inspection
 - Asset maintenance
 - Asset replacement

- Asset risk management
- Technical standards and specifications
- Plant, equipment and component specifications
- Vegetation management
- Network design and protection
- analysis and interpretation of asset condition data, for the purpose of informing the process of improving policies
- development, regular review and updating of the environmental policy
- research and development (inc. Fees paid to research and development organisations, such as EATL).

EXCLUDES:

- NIA related research and development
- development, review and updating of Health and Safety policies (include under Engineering Management and Clerical Support)
- development, review and updating of policies relating to industrial and employee relations (include under HR & Non Operational Training).

Network Regulation

Any reasonable costs associated with network regulation, ie any costs that the network company would not reasonably have incurred were it operating in a non-regulated environment.

Noise Pollution

The activity of investigating reports of noise pollution, and consequential remedial works (if necessary). In this context, noise pollution is defined as levels of noise associated with the normal operational characteristics of electrical Assets that may be deemed to be a nuisance and subject to Part III of the Environmental Protection Act 1990 (EPA).

Non-Damage Incident

Any unplanned incident where supply can be restored from the original source by network switching and without the need for the repair of equipment. For example:

- the remote or manual operation of a circuit breaker that had previously completed its duty cycle and locked out, to restore supplies, is regarded as network switching
- the changing of a blown fuse would be regarded as network switching and is therefore not considered to be a repair of equipment
- the removal of trees from an otherwise healthy overhead line is not considered to be the repair of equipment.

Non Load Related Investment

The installation of new assets and the planned installation of replacement assets for reasons other than load-related reasons.

Non-Operational Assets

Assets which are not system assets.

INCLUDES:

- Vehicles and Transport (Non-Operational)
- Small tools, equipment, plant and machinery (Non-Operational) (STEPM)
- Property (Non-Operational)
- IT & Telecoms (Non-Operational).

EXCLUDES:

- System assets
- Company cars (except where included under the labour cost).

Non-Operational Capex

Expenditure on new and replacement Non-Operational Assets which are not system assets.

INCLUDES:

- IT & telecoms (non-operational)
- Non-Operational Property
- Non-operational vehicles
- Small tools, equipment, plant and machinery.

Non-Operational Staff

Employed by the NETWORK OPERATOR or Related Party and does not meet definition of Craftsperson, Engineer or Other Operational Employee.

Non-Operational Training

The provision of training to non-operational staff (defined separately in the glossary), regardless of whether this training is to support operational or non-operational activities.

INCLUDES:

- all costs of providing non-operational and operational training courses to non-operational staff (including training non-operational staff for standby activities).

EXCLUDES:

- time of employees attending training (include as labour cost under the relevant activity of that employee)

- IT and property management costs of operating a training centre (include under IT and property for non-operational training and within Operational Training for operational training).

Non-Undergrounding Visual Amenity Schemes

Schemes undertaken to reduce the visual impact on the landscape of Distribution Assets other than undergrounding of overhead lines. These may include re-siting or modifying of assets where the driver for the activity is reducing visual impact. The visual amenity activity does not include any works undertaken as a consequence of wilful interference with the appearance of NETWORK OPERATORS' assets, eg graffiti on substations.

O

Offshore Wind

A category of DG. Electricity generation using a wind turbine situated offshore.

OH Clearance Sites

A span of overhead line that has one or more instances of non-compliance with the Electricity Supply Quality & Continuity Regulations (2002) (as amended) regulations 17 and 18, for vertical and horizontal clearances respectively.

Where a span of overhead line has more than one non-compliance issue it will only be counted once. For the avoidance of doubt this also means that where a span has both horizontal and vertical clearance issues then this will be counted as one Overhead Clearance Site.

Two adjacent spans of overhead line, each of which has one or more instances of non-compliance will be counted as two Overhead Clearances Sites. This applies even where the reason for the non-compliance is the same for both spans (for example where a building has been built next to two spans of overhead line).

OH Horizontal or Vertical Clearance - Outstanding Sites to Be Resolved

Overhead Clearance Sites where activities to deal with non-conformance issues with Electricity Supply Quality & Continuity Regulations (2002) (as amended) regulations 17 and 18 have not been undertaken and the Overhead Clearance Site therefore remains unresolved at the end of the regulatory reporting year.

OH Horizontal or Vertical Clearance - Sites Identified In Year

The additional Overhead Clearance Sites that have been identified during the Regulatory Year, which are not already included in the previous year's OH Horizontal or Vertical Clearance - Outstanding Sites to Be Resolved.

Such additional sites may arise, for example, where buildings are erected close to overhead lines, where ground levels are changed as a result of roadworks or due to improved measurement techniques.

Where these additional Overhead Clearance Sites are resolved during the Regulatory Year, they should still be included in the overall volume of sites identified in the year to illustrate the scale of additional issues that are being identified.

There may be occasions where sites that were previously classified as being non-compliant are reassessed and deemed to be compliant. Since no work has been carried out, they should be entered as a negative count against the overall volume of sites identified in the year.

OH Horizontal or Vertical Clearance - Sites Resolved

Overhead Clearance Sites where all non-compliance issues with Electricity Supply Quality & Continuity Regulations (2002) (as amended) regulations 17 and 18 have been resolved during the reporting year.

For sites with more than one non-compliance issue, all issues need to be resolved to classify the Overhead Clearance Site as being resolved.

Sites that were previously classified as being non-compliant but are reassessed and deemed to be compliant should not be classified as being resolved. Since no work has been carried out, they should be entered as a negative count against OH Horizontal or Vertical Clearance - Sites Identified in Year.

OH Horizontal or Vertical Clearance – Sites Resolved As Part of Other Work

Overhead Clearance Sites where all non-compliance with Electricity Supply Quality & Continuity Regulations (2002) (as amended) regulations 17 and 18 have been resolved as a by-product of work undertaken for other reasons. For example changes to non-compliant overhead line as part of a general reinforcement project.

OHL (Overhead Lines)

Any electric line which is placed above ground and in the open air. This excludes that part of an underground cable running above ground for the purpose of termination with overhead lines.

Oil in Service in Cables

Total volume of oil present fluid-filled cables in commission at the end of the reporting year, measured in fluid litres.

Onshore Wind

A category of DG. Electricity generation using a wind turbine situated onshore.

Operational IT & Telecoms

IT and telecommunications systems and equipment which are used exclusively in the real time management of network assets, but which do not form part of those network assets. It includes:

- Substation RTU's, Marshalling kiosks and Marshalling kiosks (see definition)
- Communications for switching & monitoring (see definition)
- Control centre hardware and software (see definition).

The following assets and components form part of the distribution network assets and are therefore excluded from Operational IT & Telecoms.

- as part of the plant:
 - Transducers on the plant
 - Control/indication panels and relays
 - Wiring from plant to control panel
- as part of the mains:
 - Auxiliary cables that form part of a pilot cable or are integral with/supported from a main
- as part of the substation:
 - Transducers associated with the substation, eg fire alarms, security alarms and weather stations
 - Dataloggers and statistical metering (for both of the above, the distinction is that these are not directly related to the normal operation of the substation)
 - Wiring (if any) from (plant) control panels to RTU and marshalling kiosk.

Where Operational IT & Telecoms equipment is installed for network plant or substation sites, where such equipment did not previously exist, then the cost of such works should be reported under the appropriate activity driver.

For example:

- the installation of Operational IT & Telecoms equipment to enable remote control functionality to be provided for plant, where such functionality did not previously exist, should be reported as Quality of Service expenditure
- the installation of Operational IT & Telecoms equipment associated with a new substation site established as part of reinforcement works, should be reported as reinforcement expenditure

Where existing Operational IT & Telecoms equipment is replaced or renewed for network plant, or substation sites, where such equipment previously exists, then the cost of such works should be reported as Operational IT & Telecoms expenditure.

Operational Measures – see BT21CN Protection Operational Measures

Operational Premises

Premises which contain network assets and are not maintained for accommodating people except for the purpose of maintenance, asset replacement etc.

INCLUDES:

- substations.

EXCLUDES:

- stores
- depots
- offices.

Operational Training

A Closely Associated Indirect activity. It is the training of Operational Staff employed by NETWORK OPERATOR or Related Party, or Agency Staff to support the direct activities on the network. Operational Staff are defined separately in the glossary.

Training can be classroom based, including academic courses, or be on the job training. It includes:

- Learner Costs
- Trainer and Course Material Costs (classroom training)
- Training Centre and Training Admin Costs.
- Time of Operational Staff attending non-operational training.

For the following purposes:

- Training of New Recruits
- Operational Up-skilling
- Operational Refresher training.

All training of apprentices and graduate engineers (who are on a defined training scheme) should be treated as Operational Training.

EXCLUDES:

- Time of Operational Staff attending Non-Operational training such as line management training (include as labour cost under the relevant activity of that employee)
- Time of Non-Operational Staff attending operational training (include as labour cost under the relevant activity of that employee)
- Recruitment costs of Operational Staff (include under HR in the Core Business Support worksheet)
- Costs of training Contractors undertaking training within NETWORK OPERATOR training facilities (include in Non Price Control De-Minimis)
- Costs of assessing capability of Contractors (include in Non Price Control De-Minimis).

Operational Training - Craftsperson

Employed by NETWORK OPERATOR or Related Party to work directly on the network, undertaking craft or mate roles such as linesman, jointer, fitter and mates.

Includes people employed to undertake the following activities:

- Conduct routine overhead line activities such as condition assessment, fault repair, maintenance, quality assurance, refurbishment and dismantlement in line with approved, safe and environmental standards.
- Carry out complex, non routine activities such as fault investigation, whilst also controlling and directing resources. Undertake routine cable jointing activities such as repair, replacement and termination to approved, safe and environmental standards.
- Provide onsite support under direct supervision, to craft activities in line with approved, safe and environmental standards.
- Carry out complex, non routine activities such as fault investigation, whilst also controlling and directing resources. Undertake routine substation activities such as installation, maintenance, inspection and repair of plant and apparatus to maintain the asset to approved, safe and environmental standards.
- Undertake routine installation, removal, replacement and commissioning of metering equipment to approved, safe and environmental standards.

INCLUDES

- persons in the following standard occupation classification codes:
 - 52: Skilled metal, electrical and electronic trades
 - 53: Skilled Construction and Building Trades.

EXCLUDES:

- any craftsperson employed by contractors.

Operational Training - Engineers

Employed by NETWORK OPERATOR or Related Party to gain of specialist skills for working on an electrical distribution network and whose intended role requires the skills and abilities of incorporated or professional engineers.

Includes persons in the following standard occupation classification codes:

- 21: Science, Research, Engineering and Technology Professionals
- 31: Science, Engineering and Technology Associate Professionals

Operational Training - Learner Costs

The costs of operational employees undertaking operational training, net of any third party funding contribution (to be reported as Cost Recoveries in cost type split).

Learner costs can include both time spent on classroom training and time spent on on-the-job training.

INCLUDES (on a pro-rated basis based on the proportion of employee's time spent on operational training):

- Labour

- Pensions
- Any travel and accommodation costs associated with attending operational training courses/ on the job training activities
- Any external funding for trainees (net off costs, report in Cost Recoveries).

EXCLUDES:

- Labour costs of third party employees undertaking training within NETWORK OPERATOR training facilities (include in Non Price Control De-Minimis)
- Overtime costs of staff on operational training programmes, unless specifically training related (report as Labour under the relevant activity being undertaken)
- Non-operational training learner costs (reported within labour against activities undertaken by that employee).

Operational Training - Leaver

An employee performing a role that falls within the definition of Craftsperson or Engineer leaving the licensee (or Related Party undertaking work for NETWORK OPERATOR) during the year. Count 1 leaver for one full time employee leaving at any time in the year. If leaver worked part time then report on full time equivalent basis eg if employee worked 3 days per week report 0.6 FTE regardless of when in year leaver left company.

Operational Training - Leaver - Due to Retirement

A Leaver who retires from the company and immediately receives pension (ie not deferred pensioner).

Operational Training - Leaver Due to Other Reasons Than Retirement

A Leaver who leaves the company but does not immediately take pension.

Operational Training - New Recruits

New employee recruited to be trained to fill an operational role (Craftsperson or Engineer) and reported within Operational Training.

Operational Training - New Recruit – Craftsperson

Trainee on a formal apprenticeship, higher apprenticeships or equivalent training scheme with the objective of becoming a Craftsperson (see definition).

Operational Training - New Recruit – Engineer

Trainee of a formal Graduate, A Level, HNC scheme or equivalent training scheme with the objective of becoming an Engineer (see definition).

Operational Training - Other Operational Employee

Employed by NETWORK OPERATOR or Related Party to work directly on the network, who does not meet the definition of an Engineer or Craftsperson.

Includes persons in the following standard occupation classification codes:

- 51: Skilled agricultural and related trades
- 81: Process, Plant and Machine Operatives
- 82: Transport and Mobile Machine Drivers and Operatives
- 91: Elementary Trades and Related Occupations.

Operational Training - Operational Refreshers

Routine and ad hoc operational refreshers and safety briefings where attendance is required in order to maintain employee's authorisation/skill set at current level.

Operational Training - Operational Staff

Employed by the NETWORK OPERATOR or Related Party, or Agency Staff to work directly on the network, undertaking the roles of Craftsperson, Engineer or Other Operational Employee (defined separately in the glossary).

Operational Training - Operational Up-Skilling

Operational training for existing Operational Staff, Related Party staff or Agency Staff whose skill set is being augmented or improved. This can include operational employees on either official promotion/development programmes and the enhancement of existing skillsets within current operational roles, and covers both classroom training and on-the-job training.

EXCLUDES:

- training provision for New Recruits (ie initial training for apprentices and other new employees)
- routine operational refreshers and safety briefings, which do not involve any new skills.

Operational Training - Trainer and Course Material Costs

Employment costs for trainers developing and delivering classroom training.

INCLUDES:

- trainer's own training costs
- costs of materials used in training delivery
- cost of any outsourced operational activity training activities.

EXCLUDES:

- the cost of construction of permanent network simulations (include in training centre and training admin costs)
- the cost of supervisors/trainers for on-the-job training activities (report as per the job being undertaken).

Operational Training - Training Centre and Training Admin Costs

Cost of establishing, developing and maintaining training centre, including:

- rent paid on training centre and associated training infrastructure
- rates and taxes payable on training centre and associated training infrastructure
- utilities including electricity, gas and water (supply and sewerage) for training centre and associated training infrastructure
- inspection and maintenance costs of training centre and associated training infrastructure
- facilities management costs including security and reception for training centre and associated training infrastructure
- expenditure on new and replacement assets associated with training centre, whether on building assets or permanent network simulations to be used for training purposes
- costs of administering operational training including management of training records, course scheduling and invitations, attendance monitoring etc.

EXCLUDES:

- any training centre costs associated with the delivery of non-operational training (include under property/Non-Operational Capex).

Operational Training - Training Days

Number of days spent by Operational Staff, Related Party staff and Agency Staff in both classroom and on-the-job training activities.

This should be calculated as per the following examples:

- 1 employee for 1 working day = 1 training day
- 1 employee for ½ working day = ½ training day.

EXCLUDES:

- Training days of contractors, even if these have been undertaken in NETWORK OPERATOR training facilities

Operational Transport

A category of BCF reporting which captures emissions resulting from the transportation (often a fleet of vehicles) used in the day to day operation of the business, ie in the inspection and maintenance of the network.

Other Income

Any income received by the activities of core Business Support Costs, which does not relate to insurance claims.

Other Network Investment – see Network Design and Engineering

Outsourcing

Contracting out of an internal business process to a third party organisation. Outsourcing can (but does not have to) involve transferring employees and assets involved in the business process from one firm to another. The definition of outsourcing includes both foreign and domestic contracting, which may include offshoring, described as “a company taking a function out of their business and relocating it to another country. For the avoidance of doubt, as explained under Insourcing, this should not include roles within the organisational structure (or within a project or programme team) that have been filled by individual sub-contractors.

Outage Planning and Management – see Control Centre

Overhead Line - Inspections

The patrol and inspection of overhead lines (all voltages) and includes foot, climbing and helicopter patrols and inspections. This also includes non-routine asset condition surveys (all voltages) and ad hoc repair carried out at the same time as the inspection.

P

Pass-Through Costs

Costs for which companies can vary their annual revenue in line with the actual cost, either because they are outside the NETWORK OPERATOR’s control or because they have been subject to separate price control measures.

Pensions

For the purposes of the Cost and Volumes Reporting Pack, this is a Cost Type.

Pensions includes licensee payments on a cash basis for the following:

- Ongoing normal service contributions to Defined Benefit Pension Schemes
- Ongoing normal service contributions to Defined Contribution Pension Schemes
- Ongoing normal service contributions to stakeholder and/or personal pension plans

- (from 31 March 2015) Payments in respect of Pension Scheme Incremental Deficit repair payments
- Payments in respect of the PPF levy (whether paid directly by the distribution business or within ongoing contribution rates)
- Payments in respect of pension scheme administration costs (whether paid directly by the distribution business or as part of ongoing contribution rates).

EXCLUDES:

- (Until 31 March 2015) Payments in respect of Pension Scheme Incremental Deficit repair payments
- (from 31 March 2015) Payments in respect of Pension Scheme Established Deficit repair payments (report in Non Activity Based Costs)
- Payments in respect of pension related severance costs (report in Atypicals - Early Retirement Deficiency Contributions and report ERDCs cost type split as labour costs)
- Payments in respect of augmentation of benefits.

Pensionable Pay

Basic pay plus pensionable allowances with no deductions.

Pension Deficit Repair Payments

The cash costs paid, directly or indirectly, by the licensee to reduce a shortfall in a pension scheme's assets compared with its liabilities as set out in the deficit recovery plan agreed between the licensee and the pension scheme trustees, reported to the Pensions Regulator and certified by the pension scheme actuary, in accordance with the pension scheme rules.

From 1 April 2015 these are split into:

- payments in respect of Pension Scheme Incremental Deficit repair payments, which are part of Pensions, which are payments relating to funding the incremental deficit
- payments in respect of Pension Scheme Established Deficit repair payments, which are payments related to funding the established deficit.

Pension Protection Fund (PPF)

The fund established to pay compensation to members of eligible defined benefit pension schemes, when there is a qualifying insolvency event in relation to the employer and where there are insufficient assets in the pension scheme to cover Pension Protection Fund levels of compensation.

Pension Protection Fund Levy (PPF Levies)

The cash costs paid, directly or indirectly, by the licensee/distribution business or pension scheme (in respect of the distribution business) to the Pension Protection Fund.

Pension Scheme Administration Costs

The administrative costs for the operation of a pension scheme by the scheme trustees (excluding interest and taxation) including salaries and on costs of pension scheme administrators and all other associated costs of administering the pension scheme, whether borne by the scheme directly or the employer(s) and not recovered from the scheme.

INCLUDES:

- Actuarial consultancy fees
- Administration and investment management fees where not remunerated by deduction from investment returns
- Third party administration fees
- Electricity Pensions Services Limited costs
- Pensions administration system licence and support costs
- Legal advisers fees
- Recruitment costs
- Pension secretariat
- Policy and strategy
- Administration consultancy
- Auditors fees
- Custodian fees
- Communication consultancy fees
- General office costs (eg printing, IT support, publications etc)
- Investment consultancy fees
- Tracing agency fees
- Member communication costs
- Trustee remuneration
- Trustee training costs.

EXCLUDES:

- administration and investment management fees where remunerated by deduction from investment returns
- costs incurred by the licensee/distribution business in managing its ongoing and contributions and deficit repair payments to pension schemes
- costs of actuaries appointed by the scheme sponsors to advice on the scheme valuations and recovery plans
- costs incurred by the licensee/distribution business, directly or indirectly, in managing its relationship with the Pension Scheme and scheme trustees or actuaries.

Pension Scheme Established Deficit

The difference between pension scheme assets and liabilities, as determined under periodic scheme valuations, that is attributable to:

- the regulated business, and
- pensionable service up to the end of the cut-off date, which for NETWORK OPERATORS is 31 March 2010.

If the Pension Scheme Established Deficit figure becomes negative, it is referred to as a surplus relating to pensionable service up to the end of the cut-off date.

Pension Scheme Incremental Deficit

The difference between pension scheme assets and liabilities, as determined under periodic scheme valuations, that is attributable to:

- the regulated business, and
- pensionable service after the cut-off date, which for NETWORK OPERATORS is 31 March 2010.

If the Pension Scheme Incremental Deficit figure becomes negative, it is referred to as a surplus relating to pensionable service after the cut-off date.

Photovoltaic

A category of DG. Electricity generation using photovoltaics (solar panels or cells).

Physical Loss Reduction Actions

Actions undertaken to reduce electricity losses where physical assets are affected, for example the installation or replacement of transformation equipment.

Physical Security

Works to address sites designated as critical national infrastructure by BEIS. Includes all associated costs of complying with BEIS requirements.

Physical Security Upgrade Programme (PSUP)

BEIS's enhanced physical security upgrade programme.

Pilot Wire Overhead

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

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

Pluvial Flooding

Flooding which occurs when the ground and drainage systems become saturated following extremely heavy downpours of rain. It is also known as surface water flooding. Flood mitigation schemes and flooding surveys will be targeted at mitigating the risk from pluvial flooding to their electrical assets.

Post-Delivery Support Agreements (PDSA)

Any ongoing expenditure associated with post-delivery support agreements which will be put in place following completion of a scheme as part of the physical security upgrade programme.

Pre-Investment Flooding Risk

The flooding risk of a site before any investment in flood defence was/has been undertaken.

Premises

Any land, building, or structure and any distribution system including the NETWORK OPERATOR'S.

Present Flooding Risk

The flooding risk of a site as of the 31 March of the year that is being reported on.

Present Unmitigated Flooding Risk

The specific flooding risk of a site as of the 31 March of the year that is being reported on that has not been mitigated against flooding.

Primary Network

Network assets where the primary voltage is EHV.

Primary Substation

A substation at which the primary voltage is greater than HV and the secondary voltage is HV (covers 132/11kV substations).

Project Management

A Closely Associated Indirect activity included in the Core CAI worksheet.

This activity relates to the activity of managing projects from authorisation through preparation, construction and energisation to completion.

INCLUDES:

- overall responsibility for delivery of single major projects or multiple minor projects
- for each specific project:

- determination of resource requirements
- planning and requisitioning of materials and equipment
- liaising with procurement for non-standard materials as required
- work and resource programming
- risk assessments of the overall project content
- preparation of work instructions
- issue work to own staff and contractors
- on-site supervision and technical guidance
- quality checks on work undertaken
- organising network access and co-ordinating outages
- organising and supervising (where appropriate) the undertaking of commissioning tests
- issuing completion certificates
- arranging energisation of assets
- site planning activities, including checking equipment access, confirming physical layout of equipment and investigative testing such as load testing
- identifying required changes to protection settings and calculating those settings
- liaising with contractors and third parties
- cost control.

EXCLUDES:

- Any IT or property costs associated with Project Management (include in IT&T and Property Management Indirect Activities);
- Any employees managing other Indirect Activities (eg Logistics Manager) (include under the relevant indirect activity heading);
- Any design work relating to new connections, new or replacement assets (include in Network Design and Engineering)
- Any work undertaken directly on the assets (include under relevant direct activity)
- Project management associated with NOCs (include in Engineering Management and Clerical Support)

Property Management (Business Support)

The costs of providing, managing and maintaining all non-operational premises (with the exception of operational training centres).

INCLUDES:

- rent and rates or any other property taxes for non-operational properties
- utilities (electricity, gas, water supply and sewerage charges)
- inspection and maintenance costs
- facilities management costs, including security and reception
- the ongoing operating cost provision of all office equipment, with the exception of IT or Telecoms equipment.

EXCLUDES:

- any costs relating to operational property (substation electricity include in Substation Electricity, substation rents include in Wayleaves Payments)
- Business Rates Payments (which are a Pass-Through Cost)
- operational training centres (include under Operational Training)

- any of the IT systems associated with property management (include under IT)
- relocation costs to or from non-operational premises (include costs of employee relocation with the costs of that employee)
- Capital purchase of office equipment.

Property (Non-Operational)

Expenditure on new and replacement property assets which are not system or operational assets.

INCLUDES:

- Premises used by people (eg stores, depots and offices) which are not operational premises (eg substations)
- Office equipment.

Protection Schemes (all voltages)

Expenditure on substation located protection, control and SCADA equipment (all voltages). This includes testing, repair and preventative maintenance. This also includes protection of conventional circuit breakers when undertaken independently of asset replacement schemes.

Protection Schemes – Asset Replacement

Complete replacement of the protection or control system. This may or may not include the replacement of the cabinet for the protection or control system but shall include replacement of all relays, wiring, and other ancillary equipment from the marshalling kiosk and the protection or control panel within the substation.

Protection Schemes – Refurbishment Major

Partial replacement of the protection or control system. At least 50% of the number of relays forming part of the system must be replaced. Any wiring forming part of the system may or may not be replaced.

Protection Schemes – Refurbishment Minor

Partial replacement of the protection or control system, with less than 50% of the number of relays forming part of the system being replaced. Any wiring forming part of the system may or may not be replaced.

PSUP Direct labour

Costs associated with staff working directly on operational activities for the physical security upgrade programme, for example site maintenance or site specific audits.

Q

R

Rail Electrification

Electrification of an existing railway line. Defined here in connection with Diversions activity, where the installation of rail electrification equipment requires the relocation or re-routing of NETWORK OPERATOR apparatus.

Rail Electrification Project

A Network Rail project for the electrification of a discrete rail route.

Real-Time Thermal Rating

The use of measurement and ambient forecasting data to predict the rating (and hence current carrying capacity) of assets in a real-time mode.

Rebuild

The reconstruction of an existing network asset.

Receivers - see Substation RTU, Marshalling Kiosk and Receivers

Refurbishment

A one-off activity undertaken on an asset that is deemed to be close to end of life or is otherwise requiring intervention that extends the life of that asset or restores its functionality. This activity may or may not result in the recording of a new or disposed asset in the Asset Register (depending on whether the intervention is carried out in situ or involves removal of the asset to a factory), but may improve the Condition Risk Score of the asset. Refurbishment can include the replacement or reconditioning of components of an asset.

Activities considered as Refurbishment are identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in Chapter 4 of this document.

Refurbishment (Major)

Intervention on an asset as defined in chapter 4 of this document. An intervention on an asset that provides a life extension of that asset.

Refurbishment (Minor)

Intervention on an asset as defined in chapter 4 of this document. Typically an activity that improves/restores the operation, functionality and/or appearance of an asset without providing a life extension.

Regulatory Fraction

The proportion of a company's pension scheme that relates to licensed regulated business activities before the relevant cut-off date and which is funded through price controlled charges, ie the Pension Scheme Established Deficit; post cut-off date it excludes the Pension Scheme Incremental Deficit. The opening or initial (ie cut-off date) regulatory fraction is as set out or applied in the respective price control documents or as incorporated in the licence or charge restriction conditions applicable to each licensee. The fraction will be subject to true up and reset in accordance with this deficit allocation methodology. This fraction is after any adjustment that was made in price allowances for EDRCs.

Regulatory Instructions and Guidance (RIGs)

The collection of documents issued by Ofgem to the NETWORK OPERATORS to enable them to complete the reporting requirements associated with the RIIO-ET2 price control arrangements. It includes excel reporting packs, instructions and guidance, commentaries and this document – the glossary.

Regulatory Year

Has the meaning given in Standard Condition of the electricity transmission licence.

Reinforcement

Network development to relieve an existing network constraint or facilitate new load growth.

Related Party

A person or entity that is related to the entity that is preparing its financial statements (referred to as the 'reporting entity') as per IAS 24. Includes both affiliates and related undertakings of the licensee as defined in standard condition 1 of the electricity distribution licence. An affiliate or related undertaking shall remain as a Related Party for the whole of the price control period even if it is no longer part of the group due to restructuring.

Related Party Margin

For the purposes of the Cost and Volumes Reporting Pack, this is a Cost Type.

The profit or loss recorded on a transaction with an affiliate being the excess or deficit on actual direct costs and indirect costs (excluding financing costs) fairly attributable to the transaction or the charge and the cost of providing that transaction.

For the avoidance of doubt this does not include exceptional items, tax, fines, penalties or the gain or loss on the disposal of assets or investments (of any sort), ie it should be net operating costs level.

For Captive Insurance businesses the margin is to be computed based on the captive's premium income less reinsurance premiums, claims paid out and movements on technical and IBNR reserves attributable to the distribution business only, ie usually reported as the profits/loss on the Technical account. Where a captive insures more than the distribution licensee(s), then it's profit/loss should be computed pro rata to the premiums paid by the licensee to total premium income in the captive for the year and the movements on technical and IBNR reserves not attributable to the distribution business must first be removed.

Related Party Margin Total Disallowed

All Disallowed Related Party Margins that are incurred by the NETWORK OPERATOR on activities for which they are funded through RIIO-ET2.

Related Party Margins Total within Price Control

All Related Party Margins that are incurred by the NETWORK OPERATOR on activities for which they are funded through RIIO-ET2.

Related Party Margin within Price Control Total Allowed

All Allowed Related Party Margins that are incurred by the NETWORK OPERATOR on activities for which they are funded through RIIO-ET2.

Related Party Transaction

A transaction that occurs where one party provides goods, works, supplies or services to a Related Party.

Related Party Turnover

The turnover for the Related Party and for reporting purposes is segmented to that as charged to each or any other NETWORK OPERATOR in the group, each other related parties and to external customers.

Repair & Maintenance

INCLUDES:

- The activity relating to the invasive (“hands on”) examination of, and the undertaking of any subsequent works to repair defects on, system assets. This includes:
 - minor repairs carried out at the same time as the maintenance visit
 - subsequent repair works undertaken to remedy defects identified by either inspection or maintenance.

In addition to the examination of system assets, other activities considered as Repair & Maintenance are identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in Chapter 4 of this document.

EXCLUDES:

- Remote Location Generation (ie diesel generation costs providing permanent emergency backup on islands)
- The physical dismantlement of existing assets (at all voltage levels) where the cost of dismantlement is not chargeable to a third party and no new assets are to be installed
- Cost of electricity consumed at substations
- Supervisory input to plan workloads and manage staff (include under Engineering Management & Clerical Support)
- Data review except the initial recording on site (include under Engineering Management & Clerical Support)
- Maintenance of non-system assets (include under Property Management)
- Tree cutting and tree clearance (include under Tree Cutting)
- Indirect Costs
- Any costs resulting from physically repairing an asset that was instigated by the receipt of a trouble call (this should be included under Troublecall)
- Any of the costs associated with inspection.

Repair & Maintenance - Protection Schemes (All Voltages)

Repair and maintenance work on substation located protection, control and SCADA equipment, which are undertaken as independent programmes of work. This includes testing, repair and preventative maintenance. This also includes protection of conventional circuit breakers.

EXCLUDES:

- the replacement of individual relays, selector switches, protection and/or control panels.

Repair & Maintenance – Substations (Civils)

Repair and maintenance of civils items at Substations (eg fencing, buildings, enclosures and site etc).

Activities considered as Repair & Maintenance – Substation (Civils) are further identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in Chapter 4 of this document. These are identified under the entry for Substation (Civils).

RIGs – see Regulatory Instructions and Guidance

S

Scottish Environment Protection Agency (SEPA)

Scotland's environmental regulator, a non-departmental public body, accountable through Scottish Ministers to the Scottish Parliament.

Self-Insured Risks

Risks that are not insured with a regulated insurer for an insurance premium and which are either provided for in the licensee's regulatory accounts or which are charged or recharged to it by a Related Party.

Servitudes

An interest in land owned by another that entitles its holder to a specific limited use of that land over a determined period of time or in perpetuity. Easements (England & Wales), Servitude (Scotland).

SF6

The chemical symbol for Sulphur hexafluoride, a gas that is used as both an insulating and arc extinction medium in electrical plant. The reporting requirement is in respect of fugitive BCF emissions attributed to SF6 lost from electrical plant.

SF6 Bank

The total mass (in kg) of sulphur hexafluoride held by the NETWORK OPERATOR for both assets installed on the network and those held in inventory. Each NETWORK OPERATOR's SF6 bank should be calculated according to the methods set out in ENA Engineering Recommendation S38.

SF6 Emitted

The total mass (in kg) of sulphur hexafluoride emitted during asset installation (only if gassed by the NETWORK OPERATOR), service life and decommissioning. Service life emissions include those due to leakage (measured through top-ups); those measured during service activity requiring gassing and degassing; and those due to equipment failure resulting in the loss of all gas contained by the asset. The SF6 emitted value should account for gas recovered.

Each NETWORK OPERATOR's SF6 emitted should be calculated according to the methods set out in ENA Engineering Recommendation S38. NETWORK OPERATORS

should not assume a percentage leakage rate to determine any element of SF6 emitted and if a NETWORK OPERATOR does not have measured records of SF6 emitted, this should be highlighted in the accompanying commentary.

SF6 Emitted Mitigation Schemes

Schemes undertaken where the primary objective is to reduce or remove the risk of discharging SF6 gas into the environment.

Single Circuit

One circuit (overhead or underground) which is installed in a single trench or set of ducts or tunnel or set of supports.

Site Security

Activity undertaken where the primary driver is to improve the physical security of sites to prevent third party access or interference. Data is presented in the table broken down by voltage of substation.

EXCLUDES:

- activity driven by security of critical national infrastructure. Costs for this activity should be captured in the worksheet C3 -Physical Security in the Costs and Volumes Reporting Pack.

Small CHP ($\geq 1\text{MW}$, $< 5\text{MW}$)

A category of DG. Electricity generation using combined heat and power plant that is greater or equal to 1MW but less than 5MW.

Small Tools, Equipment, Plant and Machinery (Non-Operational) (STEPM)

Small tools, equipment, plant and machinery which are used to work on, assist work on or test system assets. They are not system assets and are not permanently attached to one system asset at one location, irrespective of when they were bought or for what purpose.

Typically INCLUDES:

- Fault location equipment - re-energising, eg
 - Bidoyng, Modular Rezap, Faultmaster Rezap)
- Fault location equipment - non re-energising, eg
 - Cable Sniffers
 - OHL Pathfinder
 - Cable fault locator (Kehui , EZ Thump, Meggar TDR, Riser Bond TDR, Bicotest TDR, BAUR Test Vans, SEBA Test Vans, Megger EZ Thump 12KV, Megger Test Van) (vans are reported under Vehicles

- and Transport (Non-Operational) but equipment within vehicles is within STEP
- Delta V (still in use but no longer manufactured)
- Hand and power tools
- Instruments and testing equipment, eg
 - Partial discharge monitors
 - Voltage recorder
 - Load monitors
- Power quality monitoring equipment
- Ladders (used at substations and transported on vehicles)
- Lifting and handling gear
- Street Works signing and guarding equipment
- Non-wheel- mounted winches and winching equipment
- Cable drum equipment, eg drum stands
- Workshop equipment, eg pedestal drills, grinding wheels and reciprocating saws
- Misc. Equipment, eg cable spiking guns, pumps, gas hoses and fittings
- Inspection costs for recertification and recalibration associated with STEP.

EXCLUDES:

- Harness, climbing belts and fall arrest equipment (include as labour cost under the relevant activity of that employee).
- Generators (include capital costs in Vehicles and Transport (Non-Operational) and fuel costs in Vehicles and Transport (CAI)).

Span

The portion of overhead line between two overhead line supports (ie poles and towers). The number of spans associated with a double circuit line between two supports (either poles or towers) should be counted as two.

Span Length Average

The average distance between distribution poles or towers for circuits at the relevant voltages.

Spans Affected By Trees

Spans where vegetation growth necessitates the undertaking of tree cutting on a periodic basis in order to maintain the clearances specified in ENATS 43-8.

Spans Cut

The number of overhead line spans where tree cutting is undertaken during the reporting year, in order to ensure that clearances in accordance with ENATS 43-8 are maintained until the span is next cut.

The reporting year in which the overhead line span was inspected in order to determine whether there was a need to undertake tree cutting is irrelevant.

Spans Inspected (Tree Cutting)

The activity of inspecting overhead line spans to determine or confirm the need to undertake tree cutting along the span or around the support in order to meet the requirements of ENATS 43-8. For each overhead line span inspected there are three possible outcomes from the inspection activity, ie it is determined that it will:

- be necessary to undertake tree cutting in the same reporting year as the inspection activity in order to ensure that clearances, in accordance with ENATS 43-8, are maintained until the span is next cut
- be necessary to undertake tree cutting in a future reporting year in order to ensure that clearances, in accordance with ENATS 43-8, are maintained, or
- not be necessary to undertake tree cutting in order to ensure that clearances in accordance with ENATS 43-8, are maintained until the span is next inspected.

The activity volume to be reported is the total number of overhead line spans inspected to determine or confirm the need to undertake tree cutting in order to meet the requirements of ENATS 43-8, irrespective of the outcome. The reported activity total should include the volume of overhead line spans inspected where the:

- primary objective is to determine or confirm the need to undertake tree cutting, or
- tree cutting inspections are carried out as an integral part of routine overhead line condition inspections. In such circumstances, it is deemed that one of the primary objectives of the routine overhead line inspection is to determine or confirm the need to undertake tree cutting in order to meet the requirements of ENATS 43-8.

The reported activity volume should not include any spans inspected, where the primary objective is NOT is to determine or confirm the need to undertake tree cutting in order to meet the requirements of ENATS 43-8. Examples of overhead line inspection activity that should NOT be included are:

- routine safety and security patrols
- inspections undertaken ahead of network investment.

Spans Not Affected By Trees

Spans where there is insufficient vegetation growth to necessitate the undertaking of tree cutting on a periodic basis in order to maintain the clearances specified in ENATS 43-8.

Stakeholder Pension & Personal Accounts

Forms of defined benefit contribution pension scheme.

Stand alone ETR 132

Work where ETR 132 is the sole driver. For example, there are not further benefits derived in terms of asset replacement or general reinforcement.

Stores

The activity of managing and operating stores, which is reported as an activity within Closely Associated Indirects.

INCLUDES:

- the management of stores and inventory control
- stock-checkers
- designated storekeepers
- delivery costs (labour and transport) of materials or stock from any store to another store (including central to satellite stores)
- quality testing of materials held in stores
- the value of losses on materials held in stores, including the movements in obsolete stock provisions
- the costs of membership of the "NGT spares club". This subscription allows NETWORK OPERATORS access to specialised spares not available on the open market of non-standard high voltage equipment from National Grid, when they are required in a system emergency.

EXCLUDES:

- Costs of oil or other insulation medium (report under the activity for which it is used, eg maintenance, faults)
- IT and property costs associated with Stores (include in IT & Telecoms and Property Management activities)
- Delivery costs of materials or stock to stores or site from the manufacturer/supplier (include in Materials as part of the direct cost)
- Collection of materials by directly costed field staff from both manned and unmanned stores (include in Labour as part of the direct cost).

Strategic Business Plan Development and Implementation - see Engineering Management & Clerical Support

Strategic Spares

Items of plant and equipment held specifically to cover emergencies, where the equipment is subject to long delivery lead times or it will not be available in the future and where it is of strategic importance to maintain supplies. Purchase of strategic spares in the year held as stock at the year end.

Temporary towers which can be used on either capex related work or faults and maintenance are analogous to strategic spares.

EXCLUDES:

- Pole Mounted Transformers.

STEMM – See Small Tools, Equipment, Plant and Machinery (Non-Operational)

Substation

To be counted as a substation, a site has to meet one or more of the following criteria:

- Has voltage changing transformers, ie SGTs or GTs;
- Has circuit breaking switchgear, ie a switching substation;
- Has capacitors or voltage regulators;
- Connects two or more transmission circuits through a busbar;
- Is electrically separated from another substation of the same voltage on the same physical site, and this is reflected in the operational nomenclature.

The number of substations at a site is dependent on the number of different voltage busbars there are, not the number of different voltages in use at that site. For example, one or more of the feeders may be transformer feeders, e.g. 400/275kV, but the site would only be considered as a 275kV site unless there was 400kV switchgear/busbar present.

Cable compounds are not substations unless they have circuit breaking switchgear.

Where there is more than one company's equipment at a substation, the owner of that substation is defined as being the owner of the busbars, couplers and sections, if present.

Substation Costs

The costs associated with:

- Substation civil works
- Safety barriers/signs
- Building painting
- Vegetation management
- Including other costs related to substations other than transformers and switchgear.

Substation Electricity

Electricity consumed (both metered and unmetered) in NETWORK OPERATORS' substations.

Substation Electricity Costs

The costs incurred by the NETWORK OPERATOR for substation electricity usage.

Substation Fire Protection

The provision of fire protection system improvements including emulsifier and inert gas systems but excluding improvements to fire prevention or fire detection systems only.

Substation Indoor

Substation situated inside a Building or enclosure.

Substation - Inspections

Includes the inspection of substation/switching station fencing, buildings, site and assets (all voltages).

Substation Outdoor

Substation situated outside.

Substation Reinforcement

Reinforcement to address a constraint at a substation.

Substation RTU, Marshalling Kiosk and Receivers

Substation RTUs (Remote Terminal Units)

Communication devices that transmit data used typically for real time network management from substations to a master control system/data logger, but which do not form part network assets.

For these purposes, Substation RTUs excludes the following:

As part of the plant:

- Transducers on the plant
- Control/indication panels and relays
- Wiring from plant to control panel.

As part of the mains:

- Auxiliary cables that form part of a pilot cable or are integral with/supported from a main.

As part of the substation:

- Transducers associated with the substation, eg fire/security alarms and weather stations;
- Dataloggers and statistical metering (for both of the above, the distinction is that these are not directly related to the normal operation of the substation)
- Wiring (if any) from (plant) control panels to RTU and marshalling kiosk.

Marshalling Kiosk

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. To be considered Bay Equipment for the purposes of reporting.

Receivers

Communications devices used for the conversion of transmitted signals into a format appropriate for use by Substation RTUs and/or other control hardware.

Supply Restoration By Onsite Switching Only

Cost category relating to unplanned incidents on the power system voltage network that are resolved by network switching only.

The costs to be recorded include the cost of onsite staff only.

The cost of network switching undertaken by Control Centre staff using SCADA/remote control functionality is excluded.

Support

A pole or tower designed to support an Overhead Line (OHL) and maintain required clearances. This A Support is different from a Structure when counting assets (A Structure may comprise multiple supports (poles only).)

INCLUDES:

- wood poles, concrete poles, and steel towers.

Surround

A construction, of brick, concrete, steel, wood or any combination of these, which surrounds a substation site or electrical assets within a substation site. Scope of work includes replacement of all or part of the surround.

INCLUDES:

- boundary walls and fences; security fences and gates.

EXCLUDES:

- repair and painting/timber treatment.

Switchboards/Substation Busbars

A collective term for all switchgear operating at the same voltage and connected to a common busbar at a substation, including both non extensible switchgear and switchboards comprised of extensible switchgear.

Switchgear

A device capable of making, carrying and breaking currents under normal circuit operation but not necessarily capable of breaking fault current.

Switchgear also includes Circuit Breakers.

System Mapping

A Closely Associated Indirect activity included in the Core CAI worksheet.

The activity relates to the mapping of the network and operational premises of the network to geographical locations.

INCLUDES:

- Updating the geographical system maps with asset and locational information following the installation, removal or repositioning of system assets
- Updating of GIS records following Ordnance Survey mapping rebasing upgrades
- Responding to Street Works - Notices sent to the NETWORK OPERATOR by other parties
- Ordnance Survey licence fees
- Provision of maps to third parties as requested.

EXCLUDES:

- Clerical support and administration associated with Street Works (include under Engineering Management and Clerical Support)
- Any employees employed in the Control Centre (include under Control Centre)
- Updating the network control diagram (include under Control Centre);
- On-site collection of asset and locational information where this task is undertaken with the installation of the asset (eg sketches indicating the "as laid" size and route of an HV underground cable) (include as part of the associated direct activity)
- IT and Property costs associated with the System Mapping Activity (include in IT&T and Property Management Indirect Activities).

T

tCO2e

Carbon dioxide (CO2) equivalent, measured in tonnes. This is a measure for describing how much global warming a given type and amount of greenhouse gas may cause, using the functionally equivalent amount or concentration of carbon dioxide (CO2) as the reference.

Technical Losses

Electricity units lost owing to the physical properties of the network. This also includes the way the network is configured and operated.

Third Party Cable Damage

Damage caused by third parties to cables or equipment for which a recovery of costs is made and which are not Non Trading Rechargeables (DRS5 & DRS6).

Tidal Stream & Wave Power

A category of DG. Electricity generation using tidal flows or wave power.

Totex

The aggregate net network investment, net network operating costs and indirect costs, less cash proceeds of sale of assets and scrap, and income from theft recovery.

It includes the following which are all defined:

- Load Related Capex
- Non-Load Related Capex – Asset Replacement
- Non-Load Related Capex – Other
- Faults
- Tree Cutting
- 100% Revenue Pool Expenditure
- Controllable Opex.

Totex Incentive Mechanism (TIM)

Applies adjustment to the Totex figure to incentivise efficient overall total expenditure. It does this by sharing any over or under spend between the NETWORK OPERATORS and Customers.

Transformer

A device that is used to "transform" voltage from one level to another, usually from a higher voltage to a lower voltage.

Tree Cutting

The activity of physically felling or trimming vegetation from around network assets.

INCLUDES:

- The felling or trimming of vegetation to meet statutory and resilience requirements.
- The inspection of vegetation cut for the sole purpose of ensuring the work has been undertaken in an appropriate manner.
- Inspection of tree-affected spans where included as part of a tree cutting contract.

EXCLUDES:

- The costs of felling or trimming of vegetation as part of a Capital Scheme, (costs remain with the driver for works which necessitated the installation of the asset/tree cutting).
- General inspection costs relating to wires that are subject to vegetation and not performed solely as part of a tree cutting contract or to ensure

vegetation has been cut appropriately (include under Inspections & Maintenance).

- Costs of assessing and reviewing the tree cutting policy (include under Network Policy).
- Data collection and manipulation relating to vegetation (include under Network Design & Engineering).
- The cost of managing the tree cutting contract, except as stated above
- The cost of procuring the tree cutting contract except as stated above (include under Finance & Regulation).

Tree Cutting Cycle

The number of years for a NETWORK OPERATOR to complete tree cutting across their total overhead network, at each voltage, in accordance with their proactive tree cutting policy to meet the clearance specified in ENATS 43-8.

Tree Cutting Policy

Policy that should represent the NETWORK OPERATORS overall approach to tree cutting at each voltage. There are two overall approaches:

- proactive - a cyclic (periodic) programme for ensuring that the clearances specified in ENATS 43-8 are maintained
- reactive - an approach where tree cutting to maintain the clearances specified in ENATS 43-8 is undertaken on as found basis.

Tree Cutting: ENATS 43-8

Tree cutting activity undertaken to meet the clearance requirements of ENATS 43-8.

Tree Cutting: ETR 132

Tree cutting activity undertaken to improve network resilience under Engineering Technical Recommendation 132 (ETR 132).

Triennial Valuation (pensions)

Under the Pensions Act 2004, specifically refers to a written report prepared and signed by the scheme actuary, valuing the schemes assets and calculating its technical provisions.

U

UG Cable (Oil & Gas) - Decommissioned

A UG cable (Gas) or UG cable (Oil) that has been de-energised and disconnected from the network.

Such cable may be kept pressurised if there is a foreseeable re-use, but normally it is de-pressurised, drained and flushed (in the case of oil cable) and capped.

Decommissioned cable has not been physically removed from the environment, and it remains an asset management liability due to its potential to cause harm to the environment if residual oil escapes from the cable.

UG Cables Installed During Year (km)

Energisation of underground cables, measured in km, that have replaced OHL removed during the year under the Visual Amenity Allowance scheme.

Underground Cables

Buried cables. Underground power cables are often used in densely populated areas or where the use of overhead lines is not suitable.

Underground Cables - Inspections

INCLUDES:

- monitoring of pressurised cables and pressurising plant and equipment (all voltages).

EXCLUDES:

- cable testing and inspections of cable tunnels and bridges.

Undergrounding

The process of replacing overhead power cables with buried electricity cables

Use of System (UoS) Charges

Has the meaning given to it in Standard Licence Conditions of the electricity transmission licence.

V

Variant Costs

Costs which are subject to uncertainty mechanisms.

Vehicles and Transport (Non-Operational)

Expenditure on new and replacement wheeled vehicles and generators which are not system assets but are utilised by the NETWORK OPERATOR or any other Related Party for the purposes of providing services to the NETWORK OPERATOR.

INCLUDES:

- Commercial vehicle fleet
- Mobile plant for example:
 - Mobile compressors
 - Cranes
 - Excavators
 - Dumpers
 - Trailers
 - Drum trailers
 - Wheel mounted winches
 - Hiab vehicles and accessories
 - All terrain vehicles
 - Water pumping vehicles
- Generators, which include wheel mounted and non-wheel mounted generators used to power the network and small portable generators, used to power tools.
- The labour costs of fuelling unfuelled generators.

EXCLUDES:

- company cars (except where included under the labour cost)
- Fork lifts (include in stores)
- Fuel costs for wheeled vehicles and generators (report in Vehicles and Transport (CAI)).

Vehicles and Transport (CAI)

The Closely Associated Indirect activity associated with managing, operating and maintaining the commercial vehicle fleet and mobile plant utilised by the NETWORK OPERATOR or any other Related Party for the purposes of providing services to the NETWORK OPERATOR.

INCLUDES:

- Lease costs associated with the vehicle fleet and mobile plant
- Insurance premiums associated with leased commercial fleet vehicles where the costs of the premiums are embedded in the lease charges
- Maintenance costs of the vehicle fleet and mobile plant, including mobile generation
- Cost of accident repairs to NETWORK OPERATOR's own commercial fleet vehicles where the cost is borne directly by the NETWORK OPERATOR
- Cost of accident repairs to commercial fleet vehicles leased by the NETWORK OPERATOR, where the cost is borne directly by the NETWORK OPERATOR
- Fuel costs of the vehicle fleet (including generators) and mobile plant, irrespective of whether the vehicle fleet and mobile plant is owned by the NETWORK OPERATOR or leased by the NETWORK OPERATOR, except

where leased generators are fully fuelled and manned from contractors (report in the relevant direct activity).

EXCLUDES:

- Direct field staff time spent on utilising the vehicles for a direct cost activity (include under Direct Activities)
- IT and property costs associated with vehicle management (include as IT and property respectively)
- Purchase of vehicles, mobile plant and equipment (include as Vehicles and Transport (Non-Operational))
- Cost of providing company cars to employees which are benefits in kind (include as labour cost under the relevant activity of that employee)
- Costs recovered in respect of accident repairs from insurance companies (include as Finance and Regulation)
- Insurance premiums associated with commercial fleet that are not embedded in the lease cost (include as Insurance Totals in Core Business Support)
- Fuel costs of leased generators where leased generators are fully fuelled and manned from contractors (report in the relevant direct activity).

Vertical Clearance

The vertical distance between an overhead line, the ground or a building or structure.

W

Waste Incineration (not CHP)

A category of DG. Electricity generation from burning waste, but not including combined heat and power plants.

Wayleaves

An activity included within Closely Associated Indirects, incorporating the following sub-activities:

- Wayleave Payments (as defined in the glossary)
- Wayleaves and Easements/Servitudes: Admin Cost (as defined in the glossary).

Wayleaves and Easements/Servitudes Admin Costs

A sub-activity of the 'Wayleaves' Indirect activity included with Closely Associated Indirects.

INCLUDES:

- Obtaining, managing and administering Wayleaves, substation rents, easements and servitudes
- Negotiating new Wayleaves

- Managing Wayleave terminations
- Administration of existing Wayleaves including the preparation of payments
- Negotiating conversions from Wayleave arrangements to permanent easement/ Servitudes, substation rents and Wayleave payments
- Provision of legal services relating to wayleaves /easements/servitudes.

Wayleaves (inc. Easements/Servitudes)

Cost Type for reporting payments of wayleaves and easements / servitudes.

These are payments to owners and/or occupiers to cover the financial impact of having equipment on their land and for access to that equipment:

- Wayleaves - Access to property granted for up to one year
- Easements/Servitudes - An interest in land owned by another that entitles its holder to a specific limited use of that land over an unrestricted time. Easements (England & Wales), Servitude (Scotland).

For the purpose of the Costs and Volumes RIGs (Annex B), this cost type also includes the payments of substation rents.

Wayleaves Payments

A sub-activity of the 'Wayleaves' Indirect activity included with Closely Associated Indirects.

INCLUDES:

- Annual payments made in advance to the owner and/or occupier to cover the financial impact of having equipment on their land and for access to that equipment;
- Cost of substation rent payments.

EXCLUDES:

- Purchase of easements / servitudes (include as Diversions or as relevant Connections activity within or outside price control).

X

Y

Z

3. Numerical definitions

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.

6.6/11kV UG Cable

6.6/11kV Underground Cable

Includes - all design types of Underground Cable.

11kV VT

Standalone Voltage Transformer connected at an operating voltage of 11kV used for the purposes of protection, measurement or control. Count as individual units.

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

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

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 (Air Insulated Busbars) (OD) (GM)

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

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 – 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 – SF6 or alternative) busbar insulation situated indoor.

Excludes - CB that form part of a RMU.

33kV Fittings

Includes - insulators and fittings on OH tower lines

Includes – conductor dampers, spacers.

Excludes - insulators and fittings associated with OH pole lines. Measured per set (ie one per circuit per tower).

33kV OHL (Pole Line) Conductor

33kV (includes 22 & 25kV) 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.

33kV OHL (Tower Line) Conductor

33kV (includes 22 & 25kV) 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.

33kV OHL (Tower Line) Earth Wire

Includes Earth Wire strung on towers with 33kV as highest operating voltage.

33kV Earth Wire Fittings

Includes – earth wire fittings on 33kV OH tower lines

Includes – conductor dampers

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

33kV Pole

33kV (includes 22 & 25kV) Overhead Line Pole

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

Excludes - Steel lattice towers.

33kV Switch (GM)

33kV (includes 22 & 25kV) Switch (Ground Mounted)

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, RMU should not be counted as separate items.

33kV Switchgear - Other

Includes - All other switchgear, eg Disconnectors, Fault throwers, Earthing switches, 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.

33kV Tower

33kV (includes 22 & 25kV) Overhead line tower

Includes - Steel lattice towers.

Excludes - Small footprint steel masts.

33kV VT

Standalone Voltage Transformer connected at an operating voltage of 33kV used for the purposes of protection, measurement or control. Count as individual units.

33kV UG Cable (Gas)

33kV (includes 22 & 25kV) Underground pressured assisted gas filled cable

Excludes - non pressured assisted designs and oil filled cables.

33kV UG Cable (Non Pressurised)

33kV (includes 22 & 25kV) Underground non pressured assisted cables

Includes - XLPE, EPR and paper insulated cables. Excludes pressured assisted designs.

33kV UG Cable (Oil)

33kV (includes 22 & 25kV) Underground pressured assisted oil filled cable

Excludes - non pressured assisted designs and gas filled cables.

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.

132kV CB (Air Insulated Busbars) (ID)

132kV Ground Mounted Circuit Breaker

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

132kV CB (Air Insulated Busbars) (OD)

132kV Ground Mounted Circuit Breaker

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

132kV CB (Gas Insulated Busbars) (ID)

132kV Ground Mounted Circuit Breaker

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

132kV CB (Gas Insulated Busbars) (OD)

132kV Ground Mounted Circuit Breaker

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

132kV Fittings

Includes insulators and fittings on OH lines. Measured per set (ie one per circuit per tower).

Includes – conductor dampers, spacers.

132kV OHL (Pole Line) Conductor

132kV 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).

132kV OHL (Tower Line) Conductor

132kV 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.

132kV OHL (Tower Line) Earth Wire

Includes Earth Wire strung on towers with 132kV as highest operating voltage.

132kV Earth Wire Fittings

Includes – earth wire fittings on 132 kVOH tower lines

Includes – conductor dampers

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

132kV Pole

132kV Overhead Line Pole

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

Excludes – towers.

132kV Sub Cable

132kV 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.

132kV Switchgear - Other

Includes - Disconnectors, Earthing Switches 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.

132kV Tower

132kV Overhead Line Tower

Includes - Steel lattice towers.

Excludes - Small footprint steel masts.

132kV Transformer

Power Transformer with a primary winding voltage of 132kV

Includes - 132kV reactors & regulators.

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

132kV FACTS Equipment

Includes - Series Compensation, Synchronous Generators, Static VARs, Statcoms etc used to manage reactive power on the network where the connection point is at an operating voltage of 132kV.

Excludes - Reactors

132kV VT

Standalone Voltage Transformer connected at an operating voltage of 132kV used for the purposes of protection, measurement or control. Count as individual units.

132kV CT

Standalone Current Transformer connected at an operating voltage of 132kV used for the purposes of protection, measurement or control. Count as individual units.

132kV UG Cable (Gas)

132kV Under Ground Cable (Gas Filled)

Includes - All pressure assisted Gas Filled Cables.

132kV UG Cable (Non Pressurised)

132kV Underground Cable (Non Pressurised)

Includes - all non-pressure assisted cables (eg XLPE, EPR or paper insulated cables).

132kV UG Cable (Oil)

132kV Underground Cable (Oil Filled)

Includes - all pressure assisted Oil Filled Cables.

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.

275kV CB (Air Insulated Busbars) (ID)

275kV Ground Mounted Circuit Breaker

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

275kV CB (Air Insulated Busbars) (OD)

275kV Ground Mounted Circuit Breaker

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

275kV CB (Gas Insulated Busbars) (ID)

275kV Ground Mounted Circuit Breaker

Includes - all CB designs with any arc extinction media having SF6 gas (or equivalent) busbar insulation situated indoor.

275kV CB (Gas Insulated Busbars) (OD)

275kV Ground Mounted Circuit Breaker

Includes - all CB designs with any arc extinction media having SF6 gas (or equivalent) busbar insulation situated outdoor.

275kV Fittings

Includes insulators and fittings on OH lines. Measured per set (ie one per circuit per tower).

Includes – conductor dampers, spacers.

275kV OHL (Pole Line) Conductor

275kV 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).

275kV OHL (Tower Line) Conductor

275V 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.

275kV OHL (Tower Line) Earth Wire

Includes Earth Wire strung on towers with 275kV as highest operating voltage.

275kV Earth Wire Fittings

Includes – earth wire fittings on 275kV OH tower lines

Includes – conductor dampers

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

275kV Pole

275kV Overhead Line Pole

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

Excludes – towers.

275kV Sub Cable

275kV 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.

275kV Switchgear - Other

Includes - Disconnectors, Earthing Switches 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.

275kV Tower

275kV Overhead Line Tower

Includes - Steel lattice towers.

Excludes - Small footprint steel masts.

275kV Transformer

Power Transformer with a primary winding voltage of 275kV

Includes - 275kV reactors & regulators.

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

275kV FACTS Equipment

Includes - Series Compensation, Synchronous Generators, Static VARs, Statcoms etc used to manage reactive power on the network where the connection point is at an operating voltage of 275kV.

Excludes - Reactors

275kV VT

Standalone Voltage Transformer connected at an operating voltage of 275kV used for the purposes of protection, measurement or control. Count as individual units.

275kV CT

Standalone Current Transformer connected at an operating voltage of 275kV used for the purposes of protection, measurement or control. Count as individual units.

275kV UG Cable (Gas)

275kV Under Ground Cable (Gas Filled)

Includes - All pressure assisted Gas Filled Cables.

275kV UG Cable (Non Pressurised)

275kV Underground Cable (Non Pressurised)

Includes - all non-pressure assisted cables (eg XLPE, EPR or paper insulated cables).

275kV UG Cable (Oil)

275kV Underground Cable (Oil Filled)

Includes - all pressure assisted Oil Filled Cables.

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.

400kV CB (Air Insulated Busbars) (ID)

400kV Ground Mounted Circuit Breaker

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

400kV CB (Air Insulated Busbars) (OD)

400kV Ground Mounted Circuit Breaker

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

400kV CB (Gas Insulated Busbars) (ID)

400kV Ground Mounted Circuit Breaker

Includes - all CB designs with any arc extinction media having SF6 gas (or equivalent) busbar insulation situated indoor.

400kV CB (Gas Insulated Busbars) (OD)

400kV Ground Mounted Circuit Breaker

Includes - all CB designs with any arc extinction media having SF6 (or equivalent) busbar insulation situated outdoor.

400kV Fittings

Includes insulators and fittings on OH lines. Measured per set (ie one per circuit per tower).

Includes – conductor dampers, spacers.

400kV OHL (Pole Line) Conductor

400kV 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).

400kV OHL (Tower Line) Conductor

400V 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.

400kV OHL (Tower Line) Earth Wire

Includes Earth Wire strung on towers with 400kV as highest operating voltage.

400kV Earth Wire Fittings

Includes – earth wire fittings on 400kV OH tower lines

Includes – conductor dampers

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

400kV Pole

400kV Overhead Line Pole

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

Excludes – towers.

400kV Sub Cable

400kV 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.

400kV Switchgear - Other

Includes - Disconnectors, Earthing Switches 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.

400kV Tower

400kV Overhead Line Tower

Includes - Steel lattice towers.

Excludes - Small footprint steel masts.

400kV Transformer

Power Transformer with a primary winding voltage of 400kV

Includes - 400kV reactors & regulators.

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

400kV FACTS Equipment

Includes - Series Compensation, Synchronous Generators, Static VARs, Statcoms etc used to manage reactive power on the network where the connection point is at an operating voltage of 400kV.

Excludes - Reactors

400kV VT

Standalone Voltage Transformer connected at an operating voltage of 400kV used for the purposes of protection, measurement or control. Count as individual units.

400kV CT

Standalone Current Transformer connected at an operating voltage of 400kV used for the purposes of protection, measurement or control. Count as individual units.

400kV UG Cable (Gas)

400kV Under Ground Cable (Gas Filled)

Includes - All pressure assisted Gas Filled Cables.

400kV UG Cable (Non Pressurised)

400kV Underground Cable (Non Pressurised)

Includes - all non-pressure assisted cables (eg XLPE, EPR or paper insulated cables).

400kV UG Cable (Oil)

400kV Underground Cable (Oil Filled)

Includes - all pressure assisted Oil Filled Cables.

Equipment labelling

Identification and Safety labelling on substations and plant.

Where plant labelling and signage is carried out as a stand alone 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.

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.

Post Insulators

Form part of a busbar or equipment support structure.

Consider as Bay Equipment for the purposes of reporting.

Protection Schemes

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

Count as individual schemes, i.e Main, Reserve.

Includes AVC and other control schemes.

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.

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, eg road and rail bridges.

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.

HVDC

HVDC Equipment

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

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.

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 on the asset in question, i.e. works that would not have been undertaken had the asset intervention not happened.

Includes works associated with LVAC boards, Standby Generators, oil pipe work and oil handling equipment, air systems and compressors and any other asset that is common to a site.

Includes Foundation creation/modification/removal; ground preparation; landscaping around asset; construction and erection of temporary site compounds.

Civil Works Associated with Substation Platform

Civil works associated with the creation or extension to a substation platform.

Includes all works associated with platform creation or extension, creation of substation trenches, substation fencing, building construction, site clearance.

Includes works associated with LVAC boards, Standby Generators, oil pipe work and oil handling equipment, air systems and compressors and any other asset that is common to a site but not directly attributable to an intervention in a particular asset or assets.

Excludes installation of foundations associated with electrical assets.

For new build sites and site extensions, includes earth mat creation.

Civil Works Associated with Site Access

Civil works to create of a construction corridor and access to that corridor for overhead or underground installations, or to facilitate the creation of a substation platform or construction of an overhead line or cable route.

Includes site clearance on access route and construction corridor where applicable, road/track construction, bell mouths or junction creation to allow turn in from public highway

Prime Asset

Asset, as listed in Numerical Definitions, that is the primary driver of the investment being undertaken.

Consequential Asset

Asset, as listed in numerical definitions, being replaced only due to the intervention in the Prime Asset, where costs are included against the replacement/construction of

the Prime Asset (as defined in Asset Replacement/New Construction Scope of Works) but which will produce a volume count against said asset.

Interplant Connections

Busbar/Cable connections and their associated support structures providing electrical connection between HV/EHV Substation Assets.

Interplant connections to be reported against Prime Asset driving investment. Where multiple assets are being replaced concurrently, interplant connections will be included with prime assets in the following priority order:

- Transformer
- Circuit Breaker
- Isolator or Switch

As an example where a Transformer and associated Circuit Breaker are being replaced concurrently, the Interplant connections between Transformer and Circuit Breaker will be included with the Transformer.

Replacement of a busbar in a single or double busbar configuration substation shall be included with prime assets in the following priority order:

- Bus Section/Coupler Circuit Breaker
- Sectional Isolator
- Bay Isolators

4. Refurbishment and Repairs & Maintenance Task Allocation Tables

For clarification in completing RIGs Packs and BPDTs; Refurbishment (No SDI) should be read as Refurbishment Minor, Refurbishment (SDI) as Refurbishment Major.

6.6/11kV UG Cable			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs	✓		
Replacement of cable joints and terminations (including sealing ends)	✓		

6.6/11kV CB (GM) Primary			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.)	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Replacement of the moving portion (truck) in withdrawable equipment			✓
Complete factory refurbishment			✓
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Repairs to interlocks	✓		
Repairs to racking device	✓		
Repairs to busbar joints (extensible switchgear)	✓		

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6.6/11kV Switch (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.)	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Complete factory refurbishment			✓
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Painting of plant	✓		
Repairs to interlocks	✓		
Repairs to racking device	✓		
Repairs to busbar joints (extensible switchgear)	✓		

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33kV CB (Air Insulated Busbars)(ID) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.)	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Replacement of the moving portion (truck) in withdrawable equipment			✓
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Repairs to interlocks	✓		
Repairs to racking device	✓		
Repairs to busbar joints (extensible switchgear)	✓		

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33kV CB (Air Insulated Busbars)(OD) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.)	✓		
Replacement of arcing horns	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Replacement of the moving portion (truck) in withdrawable equipment			✓
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Painting of plant	✓		
Repairs to interlocks	✓		

33kV CB (Gas Insulated Busbars)(ID) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.)	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Replacement of the moving portion (truck) in withdrawable equipment			✓
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Repairs to interlocks	✓		
Repairs to racking device	✓		
Repairs to busbar joints (extensible switchgear)	✓		

RIIO-T2 regulatory instructions and guidance: Glossary

33kV CB (Gas Insulated Busbars)(OD) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.)	✓		
Replacement of arcing horns	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Painting of plant	✓		
Repairs to interlocks	✓		

33kV Switch (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.)	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of the moving portion (truck) in withdrawable equipment			✓
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Painting of plant	✓		
Repairs to interlocks	✓		
Repairs to busbar joints (extensible switchgear)	✓		

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33kV Switchgear - Other			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (operating tests etc.)	✓		
Lubrication of moving parts	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of braids	✓		
Replacement of interruptor heads	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of bushings	✓		
Repair/ replacement of earth bonding and earth mats	✓		
Repair/ replacement of interlocks	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of control/communications battery	✓		
Replacement or repair of control box (and/or communications devices)	✓		

33kV OHL (Pole Line) Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of clamps, replacement of jumpers, replacement of insulation piercing connectors, and repair of broken strands	✓		
Replacement of spiral vibration dampers	✓		
Replacement of bird flight deterrents	✓		

33kV Pole			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Pole testing using diagnostic equipment	✓		
Repairs to existing stay and stay insulators that do not constitute complete replacement of the stay wire and insulator.	✓		
Replacement of individual insulators or fittings	✓		
Repairs to pole top steelwork (such as crossarms, outrigger brackets, bracing) involving the replacement of individual steelwork components such as bolts or individual crossarm members	✓		
Replacement of signs and notices	✓		
Repair or replacement of pole earthing	✓		
Remedial application of wood pole preservative (e.g. insertion of boron rods)	✓		
Replacement of a complete set of insulators associated with an existing pole		✓	
Complete replacement of pole top steelwork (including associated insulators and fittings)		✓	
The complete replacement of stay wire and insulator (including stay block or anchor as necessary) at an existing pole		✓	
Replacement of steelwork associated with pole mounted switchgear and equipment		✓	
Pole Strengthening (e.g. clamping a steelwork supporting bracket to an existing pole)			✓
Small footprint steel masts: Replacement of individual bolts	✓		
Small footprint steel masts: Repairs to existing steelwork members (e.g. welding)	✓		
Small footprint steel masts: Patch painting following steelwork repair	✓		
Small footprint steel masts: Replacement of step bolts		✓	
Small footprint steel masts: Replacement of individual steelwork members			✓
Small footprint steel masts: Painting of mast		✓	
Small footprint steel masts: Repairs to foundations	✓		

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33kV OHL (Tower line) Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of jumpers or repair of broken strands	✓		

33kV OHL Earthwire Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of jumpers or repair of broken strands	✓		

33kV Tower			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing (e.g. line polarisation resistance tests or transient dynamic response tests on foundations)	✓		
Vegetation management around the tower base	✓		
Replacement of individual bolts	✓		
Replacement of signs and notices	✓		
Repairs to existing steelwork members (e.g. welding)	✓		
Patch painting following steelwork repair	✓		
Replacement of anti-climbing devices (e.g. complete outrigger or barbed wire only)	✓		
Replacement of step bolts		✓	
Replacement of individual steelwork members			✓
Painting of tower			✓
Repairs to tower foundations (e.g. remuffing)	✓		
Replacement of tower foundations			✓

33kV Fittings			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Repairs to insulation and fitting sub components, including replacement of individual insulators, dishes, shackles, arcing horns etc.	✓		
Replacement of individual suspension clamps	✓		
Replacement of individual dampers and spacer dampers	✓		
Replacement of individual insulator strings { <i>note: replacement of a complete set of insulators/ fittings is an 'Asset Replacement' activity</i> }		✓	

33kV Earth Wire Fittings			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Replacement of individual suspension clamps			
Replacement of individual dampers	✓		
	✓		

132kV OHL (Tower line) Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of jumpers or repair of broken strands	✓		
Replacement of individual suspension clamps	✓		
Replacement of individual dampers and spacer dampers	✓		

132kV OHL Earthwire Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of jumpers or repair of broken strands	✓		

132kV Tower			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing (e.g. line polarisation resistance tests or transient dynamic response tests on foundations)	✓		
Vegetation management around the tower base	✓		
Replacement of individual bolts	✓		
Replacement of signs and notices	✓		
Repairs to existing steelwork members (e.g. welding)	✓		
Patch painting following steelwork repair	✓		
Replacement of anti-climbing devices (e.g. complete outrigger or barbed wire only)	✓		
Replacement of step bolts		✓	
Replacement of individual steelwork members			✓
Painting of tower			✓
Repairs to tower foundations (e.g. remuffing)	✓		
Replacement of tower foundations			✓

132kV Fittings			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Repairs to insulation and fitting sub components, including replacement of individual insulators, dishes, shackles, arcing horns etc.	✓		
Replacement of individual suspension clamps	✓		
Replacement of individual dampers and spacer dampers	✓		
Replacement of individual insulator strings { <i>note: replacement of a complete set of insulators/ fittings is an 'Asset Replacement' activity</i> }		✓	

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132kV Earth Wire Fittings			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Replacement of individual suspension clamps	✓		
Replacement of individual dampers	✓		

132kV UG Cable (Non Pressurised)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs, including link box repairs	✓		
Refurbishment/Replacement of link boxes		✓	
Replacement of cable joints and terminations (including sealing ends)		✓	

132kV UG Cable (Oil)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs, including link box repairs	✓		
Refurbishment/Replacement of link boxes		✓	
Replacement of cable joints and terminations (including sealing ends)			✓
Remaking existing joints and terminations in situ			✓
Repressurising of cable fluid system (e.g. top up of oil or gas)	✓		
Resealing of pressurising equipment (e.g. resealing tanks)	✓		
Resoldering of pressurising equipment pipework	✓		
Replacement of pressurising equipment valves and/or gauges		✓	
Replacement of pressurising equipment pipework and/or tanks		✓	
Re-engineering (replacement/refurbishment/relocation) of pressurising system equipment with the objective of reducing the normal operating fluid pressure in the cable system			✓

132kV UG Cable (Gas)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs, including link box repairs	✓		
Refurbishment/Replacement of link boxes		✓	
Replacement of cable joints and terminations (including sealing ends)			✓
Remaking existing joints and terminations in situ			✓
Repressurising of cable fluid system (e.g. top up of oil or gas)	✓		
Resealing of pressurising equipment (e.g. resealing tanks)	✓		
Resoldering of pressurising equipment pipework	✓		
Replacement of pressurising equipment valves and/or gauges		✓	
Replacement of pressurising equipment pipework and/or tanks		✓	
Re-engineering (replacement/refurbishment/relocation) of pressurising system equipment with the objective of reducing the normal operating fluid pressure in the cable system			✓

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132kV Sub Cable			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs	✓		
Replacement of cable joints and terminations (including sealing ends)		✓	
Replacement of physical protection of submarine cable (e.g. split piping, backfill cover to exposed cables at shoreline etc.)	✓		

132kV CB (Air Insulated Busbars)(ID) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Repairs to interlocks	✓		
Repairs to busbar joints (extensible switchgear)	✓		

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132kV CB (Air Insulated Busbars)(OD) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Replacement of arcing horns	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Painting of plant	✓		
Repairs to interlocks	✓		

132kV CB (Gas Insulated Busbars)(ID) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Repairs to interlocks	✓		
Repairs to busbar joints (extensible switchgear)	✓		

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132kV CB (Gas Insulated Busbars)(OD) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Replacement of arcing horns	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Painting of plant	✓		
Repairs to interlocks	✓		

132kV Switchgear - Other			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (operating tests etc.)	✓		
Lubrication of moving parts	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of braids	✓		
Replacement of interruptor heads	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of bushings	✓		
Repair/ replacement of earth bonding and earth mats	✓		
Repair/ replacement of interlocks	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of control/communications battery	✓		
Replacement or repair of control box (and/or communications devices)	✓		

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132kV Transformer			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Test operation of forced cooling (fans/ pumps)	✓		
Test Bucholz & winding temperature indicators/ relays	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (oil testing, partial discharge testing etc.)	✓		
Change silica gel in breather	✓		
Oil filtration and replacement	✓		
Painting	✓		
Sight glass replacement	✓		
Bolt tightening	✓		
General housekeeping (remove debris from radiator etc.)	✓		
Repair/ replacement of connections to earthing system	✓		
Minor repair to existing cooling radiators (rust/ leaks)	✓		
Replacement of breather unit	✓		
Tapchanger diverter contact replacement	✓		
Tapchanger selector contact replacement	✓		
Replacement of individual fan motors	✓		
Replacement of pumps	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Replacement of gaskets & seals			✓
On site processing to recondition oil to remove moisture and acidity from windings			✓
Replacement of cooling radiators			✓
Replacement of conservator tanks		✓	
Replacement of tap changers or full replacement of tap changer mechanism			✓
Replacement of bushings			✓
Replacement of cable box		✓	
Installation of replacement windings			✓
Complete factory refurbishment			✓

132kV FACTS Equipment			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Maintenance as specified by manufacturer	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (oil testing, partial discharge testing etc.)	✓		
General housekeeping	✓		
Individual component replacement		✓	
Replacement of individual subsystem			✓
Complete factory refurbishment			✓

Batteries at 132kV Substations			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Examination of electrolyte level, plates, connections etc.	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. internal impedance measurements, discharge tests etc.)	✓		
Topping up individual cells	✓		
Cleaning/ re-tightening of inter-cell connections	✓		
Replacement of individual cells	✓		

275kV OHL (Pole Line) Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of clamps, replacement of jumpers, replacement of insulation piercing connectors, and repair of broken strands	✓		
Replacement of bird flight deterrents	✓		

275kV Pole			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Pole testing using diagnostic equipment	✓		
Repairs to existing stay and stay insulators that do not constitute complete replacement of the stay wire and insulator.	✓		
Replacement of individual insulators or fittings	✓		
Repairs to pole top steelwork (such as crossarms, outrigger brackets, bracing) involving the replacement of individual steelwork components such as bolts or individual crossarm members	✓		
Replacement of signs and notices	✓		
Repair or replacement of pole earthing	✓		
Remedial application of wood pole preservative (e.g. insertion of boron rods)	✓		
Replacement of a complete set of insulators associated with an existing pole		✓	
Complete replacement of pole top steelwork (including associated insulators and fittings)		✓	
The complete replacement of stay wire and insulator (including stay block or anchor as necessary) at an existing pole		✓	
Replacement of steelwork associated with pole mounted switchgear and equipment		✓	
Pole Strengthening (e.g. clamping a steelwork supporting bracket to an existing pole)			✓
Small footprint steel masts: Replacement of individual bolts	✓		
Small footprint steel masts: Repairs to existing steelwork members (e.g. welding)	✓		
Small footprint steel masts: Patch painting following steelwork repair	✓		
Small footprint steel masts: Replacement of step bolts		✓	
Small footprint steel masts: Replacement of individual steelwork members			✓
Small footprint steel masts: Painting of mast		✓	
Small footprint steel masts: Repairs to foundations	✓		

275kV OHL (Tower line) Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of jumpers or repair of broken strands	✓		

275kV OHL Earthwire Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of jumpers or repair of broken strands	✓		

275kV Tower			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing (e.g. line polarisation resistance tests or transient dynamic response tests on foundations)	✓		
Vegetation management around the tower base	✓		
Replacement of individual bolts	✓		
Replacement of signs and notices	✓		
Repairs to existing steelwork members (e.g. welding)	✓		
Patch painting following steelwork repair	✓		
Replacement of anti-climbing devices (e.g. complete outrigger or barbed wire only)	✓		
Replacement of step bolts		✓	
Replacement of individual steelwork members			✓
Painting of tower			✓
Repairs to tower foundations (e.g. remuffing)	✓		
Replacement of tower foundations			✓

275kV Fittings			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Repairs to insulation and fitting sub components, including replacement of individual insulators, dishes, shackles, arcing horns etc.	✓		
Replacement of individual suspension clamps	✓		
Replacement of individual dampers and spacer dampers	✓		
Replacement of individual insulator strings { <i>note: replacement of a complete set of insulators/ fittings is an 'Asset Replacement' activity</i> }		✓	

275kV Earth Wire Fittings			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Replacement of individual suspension clamps	✓		
Replacement of individual dampers	✓		

275kV UG Cable (Non Pressurised)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs, including link box repairs	✓		
Refurbishment/Replacement of link boxes		✓	
Replacement of cable joints and terminations (including sealing ends)		✓	

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275kV UG Cable (Oil)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs, including link box repairs	✓		
Refurbishment/Replacement of link boxes		✓	
Replacement of cable joints and terminations (including sealing ends)			✓
Remaking existing joints and terminations in situ			✓
Repressurising of cable fluid system (e.g. top up of oil or gas)	✓		
Resealing of pressurising equipment (e.g. resealing tanks)	✓		
Resoldering of pressurising equipment pipework	✓		
Replacement of pressurising equipment valves and/or gauges		✓	
Replacement of pressurising equipment pipework and/or tanks		✓	
Re-engineering (replacement/refurbishment/relocation) of pressurising system equipment with the objective of reducing the normal operating fluid pressure in the cable system			✓

275kV UG Cable (Gas)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs, including link box repairs	✓		
Refurbishment/Replacement of link boxes		✓	
Replacement of cable joints and terminations (including sealing ends)			✓
Remaking existing joints and terminations in situ			✓
Repressurising of cable fluid system (e.g. top up of oil or gas)	✓		
Resealing of pressurising equipment (e.g. resealing tanks)	✓		
Resoldering of pressurising equipment pipework	✓		
Replacement of pressurising equipment valves and/or gauges		✓	
Replacement of pressurising equipment pipework and/or tanks		✓	
Re-engineering (replacement/refurbishment/relocation) of pressurising system equipment with the objective of reducing the normal operating fluid pressure in the cable system			✓

275kV Sub Cable			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs	✓		
Replacement of cable joints and terminations (including sealing ends)		✓	
Replacement of physical protection of submarine cable (e.g. split piping, backfill cover to exposed cables at shoreline etc.)	✓		

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275kV CB (Air Insulated Busbars)(ID) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Repairs to interlocks	✓		
Repairs to busbar joints (extensible switchgear)	✓		

275kV CB (Air Insulated Busbars)(OD) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Replacement of arcing horns	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Painting of plant	✓		
Repairs to interlocks	✓		

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275kV CB (Gas Insulated Busbars)(ID) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Repairs to interlocks	✓		
Repairs to busbar joints (extensible switchgear)	✓		

275kV CB (Gas Insulated Busbars)(OD) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Replacement of arcing horns	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Painting of plant	✓		
Repairs to interlocks	✓		

275kV Switchgear - Other			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (operating tests etc.)	✓		
Lubrication of moving parts	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of braids	✓		
Replacement of interruptor heads	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of bushings	✓		
Repair/ replacement of earth bonding and earth mats	✓		
Repair/ replacement of interlocks	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of control/communications battery	✓		
Replacement or repair of control box (and/or communications devices)	✓		

275kV Transformer			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Test operation of forced cooling (fans/ pumps)	✓		
Test Bucholz & winding temperature indicators/ relays	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (oil testing, partial discharge testing etc.)	✓		
Change silica gel in breather	✓		
Oil filtration and replacement	✓		
Painting	✓		
Sight glass replacement	✓		
Bolt tightening	✓		
General housekeeping (remove debris from radiator etc.)	✓		
Repair/ replacement of connections to earthing system	✓		
Minor repair to existing cooling radiators (rust/ leaks)	✓		
Replacement of breather unit	✓		
Tapchanger diverter contact replacement	✓		
Tapchanger selector contact replacement	✓		
Replacement of individual fan motors	✓		
Replacement of pumps	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Replacement of gaskets & seals			✓
On site processing to recondition oil to remove moisture and acidity from windings			✓
Replacement of cooling radiators			✓
Replacement of conservator tanks		✓	
Replacement of tap changers or full replacement of tap changer mechanism			✓
Replacement of bushings			✓
Replacement of cable box		✓	
Installation of replacement windings			✓
Complete factory refurbishment			✓

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275kV FACTS Equipment			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Maintenance as specified by manufacturer	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (oil testing, partial discharge testing etc.)	✓		
General housekeeping	✓		
Individual component replacement		✓	
Replacement of individual subsystem			✓
Complete factory refurbishment			✓

Batteries at 275kV Substations			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Examination of electrolyte level, plates, connections etc.	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. internal impedance measurements, discharge tests etc.)	✓		
Topping up individual cells	✓		
Cleaning/ re-tightening of inter-cell connections	✓		
Replacement of individual cells	✓		

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400kV OHL (Pole Line) Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of clamps, replacement of jumpers, replacement of insulation piercing connectors, and repair of broken strands	✓		
Replacement of bird flight deterrents	✓		

400kV Pole			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Pole testing using diagnostic equipment	✓		
Repairs to existing stay and stay insulators that do not constitute complete replacement of the stay wire and insulator.	✓		
Replacement of individual insulators or fittings	✓		
Repairs to pole top steelwork (such as crossarms, outrigger brackets, bracing) involving the replacement of individual steelwork components such as bolts or individual crossarm members	✓		
Replacement of signs and notices	✓		
Repair or replacement of pole earthing	✓		
Remedial application of wood pole preservative (e.g. insertion of boron rods)	✓		
Replacement of a complete set of insulators associated with an existing pole		✓	
Complete replacement of pole top steelwork (including associated insulators and fittings)		✓	
The complete replacement of stay wire and insulator (including stay block or anchor as necessary) at an existing pole		✓	
Replacement of steelwork associated with pole mounted switchgear and equipment		✓	
Pole Strengthening (e.g. clamping a steelwork supporting bracket to an existing pole)			✓
Small footprint steel masts: Replacement of individual bolts	✓		
Small footprint steel masts: Repairs to existing steelwork members (e.g. welding)	✓		
Small footprint steel masts: Patch painting following steelwork repair	✓		
Small footprint steel masts: Replacement of step bolts		✓	
Small footprint steel masts: Replacement of individual steelwork members			✓
Small footprint steel masts: Painting of mast		✓	
Small footprint steel masts: Repairs to foundations	✓		

400kV OHL (Tower line) Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of jumpers or repair of broken strands	✓		

400kV OHL Earthwire Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of jumpers or repair of broken strands	✓		

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400kV Tower			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing (e.g. line polarisation resistance tests or transient dynamic response tests on foundations)	✓		
Vegetation management around the tower base	✓		
Replacement of individual bolts	✓		
Replacement of signs and notices	✓		
Repairs to existing steelwork members (e.g. welding)	✓		
Patch painting following steelwork repair	✓		
Replacement of anti-climbing devices (e.g. complete outrigger or barbed wire only)	✓		
Replacement of step bolts		✓	
Replacement of individual steelwork members			✓
Painting of tower			✓
Repairs to tower foundations (e.g. remuffing)	✓		
Replacement of tower foundations			✓

400kV Fittings			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Repairs to insulation and fitting sub components, including replacement of individual insulators, dishes, shackles, arcing horns etc.	✓		
Replacement of individual suspension clamps	✓		
Replacement of individual dampers and spacer dampers	✓		
Replacement of individual insulator strings { <i>note: replacement of a complete set of insulators/ fittings is an 'Asset Replacement' activity</i> }		✓	

400kV Earth Wire Fittings			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Replacement of individual suspension clamps	✓		
Replacement of individual dampers	✓		

400kV UG Cable (Non Pressurised)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs, including link box repairs	✓		
Refurbishment/Replacement of link boxes		✓	
Replacement of cable joints and terminations (including sealing ends)		✓	

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400kV UG Cable (Oil)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs, including link box repairs	✓		
Refurbishment/Replacement of link boxes		✓	
Replacement of cable joints and terminations (including sealing ends)			✓
Remaking existing joints and terminations in situ			✓
Repressurising of cable fluid system (e.g. top up of oil or gas)	✓		
Resealing of pressurising equipment (e.g. resealing tanks)	✓		
Resoldering of pressurising equipment pipework	✓		
Replacement of pressurising equipment valves and/or gauges		✓	
Replacement of pressurising equipment pipework and/or tanks		✓	
Re-engineering (replacement/refurbishment/relocation) of pressurising system equipment with the objective of reducing the normal operating fluid pressure in the cable system			✓

400kV UG Cable (Gas)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs, including link box repairs	✓		
Refurbishment/Replacement of link boxes		✓	
Replacement of cable joints and terminations (including sealing ends)			✓
Remaking existing joints and terminations in situ			✓
Repressurising of cable fluid system (e.g. top up of oil or gas)	✓		
Resealing of pressurising equipment (e.g. resealing tanks)	✓		
Resoldering of pressurising equipment pipework	✓		
Replacement of pressurising equipment valves and/or gauges		✓	
Replacement of pressurising equipment pipework and/or tanks		✓	
Re-engineering (replacement/refurbishment/relocation) of pressurising system equipment with the objective of reducing the normal operating fluid pressure in the cable system			✓

400kV Sub Cable			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs	✓		
Replacement of cable joints and terminations (including sealing ends)		✓	
Replacement of physical protection of submarine cable (e.g. split piping, backfill cover to exposed cables at shoreline etc.)	✓		

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400kV CB (Air Insulated Busbars)(ID) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Repairs to interlocks	✓		
Repairs to busbar joints (extensible switchgear)	✓		

400kV CB (Air Insulated Busbars)(OD) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Replacement of arcing horns	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Painting of plant	✓		
Repairs to interlocks	✓		

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400kV CB (Gas Insulated Busbars)(ID) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Repairs to interlocks	✓		
Repairs to busbar joints (extensible switchgear)	✓		

400kV CB (Gas Insulated Busbars)(OD) (GM)			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (trip tests, operation of interlocks etc.)	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (insulation resistance testing, continuity testing, partial discharge testing, trip timing tests, oil testing, SF6 leak detection etc.)	✓		
Lubrication of moving parts	✓		
Renewal and replacement of insulation medium (e.g. SF6 and oil), whether reprocessed or not	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of crossjet pots (turbulator)	✓		
Replacement of individual gaskets and seals	✓		
Replacement of barriers	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of cable boxes			✓
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by condition	✓		
Replacement of bushings (e.g. external bushings, cable box bushings etc.) driven by type fault			✓
Replacement of arcing horns	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Repair/ replacement of earth bonding	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of vacuum bottles (including replacement of associated seals)		✓	
Complete Refurbishment (factory or onsite) e.g. strip down & rebuild, replacing all worn parts			✓
Painting of plant	✓		
Repairs to interlocks	✓		

400kV Switchgear - Other			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing (operating tests etc.)	✓		
Lubrication of moving parts	✓		
Replacement of contacts (arcing contacts/ main contacts)	✓		
Replacement of braids	✓		
Replacement of interruptor heads	✓		
Replacement of individual components of the operating mechanism	✓		
Replacement of individual components of the drive rods and linkages	✓		
Replacement of bushings	✓		
Repair/ replacement of earth bonding and earth mats	✓		
Repair/ replacement of interlocks	✓		
Complete replacement of the operating mechanism			✓
Complete replacement of drive rods and linkages		✓	
Replacement of control/communications battery	✓		
Replacement or repair of control box (and/or communications devices)	✓		

400kV Transformer			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Test operation of forced cooling (fans/ pumps)	✓		
Test Bucholz & winding temperature indicators/ relays	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (oil testing, partial discharge testing etc.)	✓		
Change silica gel in breather	✓		
Oil filtration and replacement	✓		
Painting	✓		
Sight glass replacement	✓		
Bolt tightening	✓		
General housekeeping (remove debris from radiator etc.)	✓		
Repair/ replacement of connections to earthing system	✓		
Minor repair to existing cooling radiators (rust/ leaks)	✓		
Replacement of breather unit	✓		
Tapchanger diverter contact replacement	✓		
Tapchanger selector contact replacement	✓		
Replacement of individual fan motors	✓		
Replacement of pumps	✓		
Replacement of outdoor bay components: busbar, connections, clamps or droppers	✓		
Replacement of gaskets & seals			✓
On site processing to recondition oil to remove moisture and acidity from windings			✓
Replacement of cooling radiators			✓
Replacement of conservator tanks		✓	
Replacement of tap changers or full replacement of tap changer mechanism			✓
Replacement of bushings			✓
Replacement of cable box		✓	
Installation of replacement windings			✓
Complete factory refurbishment			✓

400kV FACTS Equipment			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Maintenance as specified by manufacturer	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (oil testing, partial discharge testing etc.)	✓		
General housekeeping	✓		
Individual component replacement		✓	
Replacement of individual subsystem			✓
Complete factory refurbishment			✓

Batteries at 400kV Substations			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Examination of electrolyte level, plates, connections etc.	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. internal impedance measurements, discharge tests etc.)	✓		
Topping up individual cells	✓		
Cleaning/ re-tightening of inter-cell connections	✓		
Replacement of individual cells	✓		

Pilot Wire Overhead			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing - where not undertaken as part of 'Repair & Maintenance - Protection schemes (all voltages)' activities	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. insulation resistance tests) - where not undertaken as part of 'Repair & Maintenance - Protection schemes (all voltages)' activities	✓		
Sheath repairs	✓		
Replacement of joints or remaking of terminations	✓		
Repairs to catenary	✓		

Pilot Wire Underground			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing - where not undertaken as part of 'Repair & Maintenance - Protection schemes (all voltages)' activities	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. insulation resistance tests) - where not undertaken as part of 'Repair & Maintenance - Protection schemes (all voltages)' activities	✓		
Sheath repairs	✓		
Replacement of joints or remaking of terminations	✓		

Multicore Cable			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Functional testing - where not undertaken as part of 'Repair & Maintenance - Protection schemes (all voltages)' activities	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. insulation resistance tests) - where not undertaken as part of 'Repair & Maintenance - Protection schemes (all voltages)' activities	✓		
Sheath repairs	✓		
Replacement of joints or remaking of terminations	✓		

HVDC Equipment			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Maintenance as specified by manufacturer	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (oil testing, partial discharge testing etc.)	✓		
General housekeeping	✓		
Individual component replacement		✓	
Replacement of individual subsystem			✓
Complete factory refurbishment			✓

HVDC Converter Transformer			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Test operation of forced cooling (fans/ pumps)	✓		
Test Bucholz & winding temperature indicators/ relays	✓		
Invasive diagnostic testing requiring removal of covers or physical connections (oil testing, partial discharge testing etc.)	✓		
Change silica gel in breather	✓		
Oil filtration and replacement	✓		
Painting	✓		
Sight glass replacement	✓		
Bolt tightening	✓		
General housekeeping (remove debris from radiator etc.)	✓		
Repair/ replacement of connections to earthing system	✓		
Minor repair to existing cooling radiators (rust/ leaks)	✓		
Replacement of breather unit	✓		
Tapchanger diverter contact replacement	✓		
Tapchanger selector contact replacement	✓		
Replacement of individual fan motors	✓		
Replacement of pumps	✓		
Replacement of gaskets & seals			✓
On site processing to recondition oil to remove moisture and acidity from windings			✓
Replacement of cooling radiators			✓
Replacement of conservator tanks		✓	
Replacement of tap changers or full replacement of tap changer mechanism			✓
Replacement of bushings			✓
Replacement of cable box		✓	
Installation of replacement windings			✓
Complete factory refurbishment			✓

HVDC Sub Cable			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs	✓		
Replacement of cable joints and terminations (including sealing ends)		✓	
Replacement of physical protection of submarine cable (e.g. split piping, backfill cover to exposed cables at shoreline etc.)	✓		

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HVDC UG Cable			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Invasive diagnostic testing requiring removal of covers or physical connections (e.g. partial discharge testing, sheath testing etc.)	✓		
Sheath repairs	✓		
Replacement of cable joints and terminations (including sealing ends)		✓	

HVDC OHL Conductor			
Activity	Cost And Volume Table For Reporting Of Activity		
	Repair & Maintenance	Refurbishment (No SDI)	Refurbishment (SDI)
Diagnostic testing of overhead conductor (e.g. corman testing)	✓		
Removal and testing of overhead conductor core samples from existing overhead line	✓		
Repairs to overhead conductor, such as remaking compression joints, replacement of jumpers or repair of broken strands	✓		

Substation (Civils)		
Activity	Cost And Volume Table For	
	Repair & Maintenance	Civil Works Driven By Condition Of Civil Items
Painting/ Timber treatment of Substation Civil Items (e.g. doors, window frames, fencing etc.)	✓	
Weeding of substation grounds	✓	
Maintenance of security lighting	✓	
Maintenance of perimeter security system	✓	
Replacement of individual security lighting columns		✓
Replacement of security lighting system		✓
Replacement of perimeter security system		✓
Installation of a new plinth		✓
Significant modification to existing plinth		✓
Removal of graffiti/ vandalism	✓	
Full replacement of GRP or steel enclosures		✓
Renewal, or significant modification to enclosure foundation		✓
Building extension/ complete replacement of building		✓
Building foundation works		✓
Repair/ renewal affecting less than 20% of roof	✓	
Renewal of 20% or more of roof		✓
Full replacement of roof		✓
Pointing (including building and bound boundary walls)		✓
Replacement of individual glass panes	✓	
Replacement of sills	✓	
Full replacement of window (incl. frame)		✓
Full replacement of door (and door frame, if required)		✓
Repair, or replacement, of locks/ handles	✓	
Replacement of sections of guttering, downspouts etc.		✓
Repairs to heaters or dehumidifying equipment	✓	
Replacement of internal lighting systems		✓
Replacement of individual heater panels		✓
Replacement of internal heating systems		✓
Replacement of dehumidifying equipment		✓
Works on below ground drainage		✓
Repairs to boundary walls, fences and gates	✓	
Full, or partial replacement, of boundary walls and fences		✓
Full, or partial replacement, of security fences		✓
Replacement of gates		✓
Groundworks (i.e. works associated with the external surface area of a substation site, such as tarmacing, chippings within site curtilage, access roads, paths etc.)		✓

5. Asset Replacement/New Construction Scope of Works

For reporting of Asset Replacement, the following unit cost scope for each asset applies. The column 'Report As Prime Asset' is marked only as 'Yes' where asset volumes are required to be reported on the Asset Replacement Costs and Volumes table.

For reporting New Construction activities, the following unit cost scope (ignoring any decommissioning or removal activities) for each asset applies.

Manufacturer storage costs to facilitate delays in installation should be included against the asset unit cost where incurred.

6.6/11kV CB (GM) Primary

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 6.6/11kV GM circuit breaker (including protection relays and transducers)	Yes	
Dismantle, remove and dispose of existing 6.6/11kV GM circuit breaker (including protection relays and transducers)	Yes	
Supply & Install 6.6/11kV UG Cable (including interplant cables to power transformers)		6.6/11kV UG cable
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & installation of cable ducting as required		
Supply & Make Off 6.6/11kV Joint(s)		
Terminate 6.6/11kV UG cable into circuit breaker		
Replacement of associated protection, control or SCADA equipment located at the same site as the prime asset being replaced		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earth bar (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply & install replacement battery and associated charger	Batteries as appropriate	

Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment - Protection
Construction of new switchroom/demolition of existing switchroom/Modification to switchroom (including plinth and trenchwork integral to the building)		Civil works category as appropriate
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth), located externally to a building		Civil works category as appropriate
Modify substation surround/Supply and install substation enclosure		Civil works category as appropriate

6.6/11kV Switch (GM)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 6.6/11kV GM switch	Yes	
Dismantle, remove and dispose of existing 6.6/11kV switchgear (eg GM switch, RMU & GM CB)	Yes	
Supply & Install 6.6/11kV UG Cable (including interplant cables to power transformers)		6.6/11kV UG cable
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 6.6/11kV Joint(s)		
Terminate 6.6/11kV UG cable into GM switch		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Fit actuators etc, for remote operation (where functionality existed previously)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Construction of new switchroom/demolition of existing switchroom/Modification to switchroom (including plinth and trenchwork integral to the building)		Civil works category as appropriate
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth), located externally to a building		Civil works category as appropriate
Modify substation surround/Supply and install substation enclosure		Civil works category as appropriate
Fit actuators etc, for remote operation (where no functionality existed previously)		
Fit RTU and telecommunications equipment for remote operation (where no functionality existed previously)		

Fit RTU and telecommunications equipment for remote operation (where functionality existed previously)		Operational IT & Telecoms
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6.6/11kV UG cable

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & Install 6.6/11kV UG Cable	Yes	
Disconnect and abandon 6.6/11kV UG Cable (where applicable)	Yes	
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & installation of cable ducting as required		
Disconnect, dismantle, remove and dispose of existing pole termination (where appropriate)		
Supply and erect pole termination (where appropriate). Connect to overhead line		
Supply & Make Off 6.6/11kV Joint(s)		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Purchase Easements		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and install UG pilot cable	Pilot Wire Underground	

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

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 33kV Indoor circuit breaker (including protection relays and transducers)	Yes	
Dismantle, remove and dispose of existing 33kV CB (either indoor or outdoor including protection relays and transducers)	Yes	
Supply & Install 33kV UG Cable (including interplant cables to power transformers)		33kV UG Cable
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 33kV Joint(s)		
Terminate 33kV UG cable into circuit breaker		

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Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earth bar (including extension of substation earth grid, where required)		
Removal and replacement of standalone 33kV VT where required		33kV VT

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment - Protection
Construction of new switchroom/demolition of existing switchroom/Modification to switchroom (including plinth and trenching within building)		Civil works category as appropriate

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

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 33kV CB and associated structures	Yes	
Dismantle, remove and dispose of existing 33kV busbars and associated structures		
Supply and install replacement 33kV outdoor circuit breaker and associated structures	Yes	
Supply and install 33kV busbars and associated structures		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Remove existing control/protection panel at the same site as the prime asset being replaced		
Connection to substation earthing system (including extension of substation earth grid, where required)		
Associated network operations (Switching, linking, use of mobile generation, issuing		

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safety documentation, pre-commissioning tests and energisation)		
Removal and replacement of standalone 33kV VT where required		33kV VT

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Dismantle, remove and dispose of 33kV isolators and associated structures	33kV Switchgear - Other	
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civils associated with Asset Replacement
Supply and install 33kV isolators and associated structures	33kV Switchgear - Other	
Supply & install replacement battery and associated charger		
Dismantle, remove and dispose of existing battery and associated charger		
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment - Protection
Construction/Modification of building/ enclosure to accommodate control/protection panel		Civil works category as appropriate

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

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 33kV Indoor circuit breaker (including protection relays and transducers)	Yes	
Dismantle, remove and dispose of existing 33kV CB (either indoor or outdoor including protection relays and transducers)	Yes	
Supply & Install 33kV UG Cable (including interplant cables to power transformers)		33kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 33kV Joint(s)		
Terminate 33kV UG cable into circuit breaker		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Delivery of plant to site and use of crane/hiab to aid plant installation		

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Connection to substation earth bar (including extension of substation earth grid, where required)		
Removal and replacement of standalone 33kV VT where required		33kV VT

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply & install replacement battery and associated charger		
Dismantle, remove and dispose of existing battery and associated charger		
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment - Protection
Construction of new switchroom/demolition of existing switchroom/Modification to switchroom (including plinth and trenching within building)		Civil works category as appropriate

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

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 33kV CB and associated structures	Yes	
Dismantle, remove and dispose of existing 33kV busbars and associated structures		
Supply and install replacement 33kV outdoor circuit breaker and associated structures	Yes	
Supply and install 33kV busbars and associated structures		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Remove existing control/protection panel at the same site as the prime asset being replaced		
Connection to substation earthing system (including extension of substation earth grid, where required)		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Removal and replacement of standalone 33kV VT where required		33kV VT

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

Dismantle, remove and dispose of 33kV isolators and associated structures	33kV Switchgear - Other	
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil works category as appropriate
Supply and install 33kV isolators and associated structures	33kV Switchgear - Other	
Supply & install replacement battery and associated charger		
Dismantle, remove and dispose of existing battery and associated charger		
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment - Protection
Construction/Modification of building/ enclosure to accommodate control/protection panel		Civil works category as appropriate

33kV fittings

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing insulator sets, and fittings (as appropriate)	Yes	
Supply and erect new or replacement insulator sets, and fittings (as appropriate)	Yes	
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Undertake any necessary tree cutting		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

33kV Earth Wire Fittings

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing fittings	Yes	
Supply and erect new or replacement fittings	Yes	

Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Undertake any necessary tree cutting		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

33kV OHL (Tower Line) conductor

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing EHV tower line OH conductor	Yes	
Supply and erect replacement EHV tower line OH conductor	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and erect wrapped pilot cable	Pilot wire Overhead	
Remove and dispose of existing EHV insulator sets	33kV Fittings	
Supply and fit replacement EHV insulator sets	33kV Fittings	

33kV OHL Earth Wire

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing EHV tower line OH earth wire	Yes	
Supply and erect replacement EHV tower line OH earth wire	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and erect wrapped pilot cable	Pilot wire Overhead	

33kV OHL (Pole Line) conductor

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing EHV wood pole OH line conductor	Yes	
Supply and erect replacement EHV wood pole OH line conductor	Yes	
Install, and remove, temporary back stays required to facilitate conductor replacement		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Remove and dispose of existing EHV insulators/ crossarms		33kV Pole refurbishment

Supply and fit replacement EHV insulators/ crossarms		33kV Pole refurbishment
Replacement of poles	33kV Pole	
Installation of additional poles	33kV Pole	
Renew stays on an existing pole (where required), including excavate stay holes		33kV Pole refurbishment

33kV Pole

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing pole (where appropriate)	Yes	
Excavate pole hole		
Dress and erect new (additional or replacement) pole (including cross arm and insulators etc)	Yes	
Undertake any necessary tree cutting		
Excavate stay holes		
Renew stays (where required)		
Dismantle cross bracing (on H poles)		
Supply and fit replacement cross bracing (on H poles)		
Dismantle, remove and dispose of existing 33kV UG cable and associated pole termination (where appropriate)		33kV UG Cable
Excavate joint hole (where appropriate)		
Supply and make off replacement 33kV UG cable pole termination (where appropriate)		
Supply and make off 33kV UG cable joint at base of pole (where appropriate)		
Supply and erect 33kV UG cable and associated pole box (where appropriate)		33kV UG Cable
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Remove Pole Mounted equipment where appropriate (eg CB, switch, transformer)	As appropriate	
Supply and erect Pole Mounted equipment where appropriate (eg CB, switch, transformer)	As appropriate	

33kV Switch (GM)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset

Supply and install replacement 33kV GM switch	Yes	
Dismantle, remove and dispose of existing 33kV switchgear	Yes	
Supply & Install 33kV UG Cable		33kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 33kV Joint(s)		
Terminate 33kV UG cable into switch		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Construction of new switchroom/demolition of existing switchroom/Modification to switchroom/Modification to plinth		Civil works category as appropriate

33kV Switchgear - Other

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 33kV disconnectors, fault throwers, earthing switches and associated structures	Yes	
Dismantle, remove and dispose of existing 33kV disconnectors, fault throwers, earthing switches and associated structures	Yes	
Supply & Install 33kV UG Cable / busbars and connectors		33kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 33kV Joint(s) if appropriate		
Terminate 33kV UG cable into switch (if appropriate)		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

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Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment - Protection
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil works category as appropriate

33kV Tower

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing tower	Yes	
Supply erect new or replacement tower	Yes	
Undertake any necessary tree cutting		
Break up existing foundations and make good ground (where appropriate)		
Excavate and install new or replacement tower foundations (where appropriate)		
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		
Purchase easements		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Dismantle, remove and dispose of existing insulator sets	33kV Fittings	
Supply and erect new or replacement insulator sets	33kV Fittings	

33kV UG cable (Non Pressurised)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & Install 33kV non pressurised UG Cable	Yes	
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & installation of cable ducting as required		
Supply & Make Off 33kV Joint(s) and terminations		
Disconnect, dismantle, remove and dispose of existing pole or tower termination (where appropriate)		
Supply and erect pole or tower termination (where appropriate). Connect to overhead line		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Fully decommission redundant 33kV cable (pressurised and non pressurised)	Yes	
Dismantle, remove and dispose of pressurised oil tanks etc (where appropriate)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and install pilot cable	Pilot Wire Underground	
Supply and make off pilot cable joints and terminations	Pilot Wire Underground	

132kV OHL (Pole Line) Conductor

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 132kV wood pole OH line conductor	Yes	
Supply and erect replacement 132kV wood pole OH line conductor	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Remove and dispose of existing 132kV insulators		132kV Pole Refurbishment (no SDI)/ Pole Repair & Maintenance
Supply and fit replacement 132kV insulators		132kV Pole Refurbishment (no SDI)/ Pole Repair & Maintenance
Replacement of poles	132kV Pole	
Installation of additional poles	132kV Pole	

132kV Pole

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing pole (where appropriate)	Yes	
Excavate pole hole		
Dress and erect new (additional or replacement) pole (including cross arm and insulators etc)	Yes	
Undertake any necessary tree cutting		
Excavate stay holes		
Renew stays (where required)		
Dismantle cross bracing (on H poles)		
Supply and fit replacement cross bracing (on H poles)		
Dismantle, remove and dispose of existing 132kV UG cable and associated cable termination (where appropriate)		132kV UG Cable (as appropriate)
Excavate joint hole (where appropriate)		
Supply and make off replacement 132kV pole top UG cable termination (where appropriate)		
Supply and make of 132kV UG cable joint at base of pole (where appropriate)		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Purchase easements		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

132kV OHL (Tower Line) Conductor

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 132kV tower line OH conductor	Yes	
Supply and erect replacement 132kV tower line OH conductor	Yes	
Dismantle, remove and dispose of existing dampers, spacers and spacer-dampers		
Supply and erect new or replacement of existing dampers, spacers and spacer-dampers		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and erect wrapped pilot cable	Pilot Wire Overhead	
Remove and dispose of existing 132kV insulator sets	132kV Fittings	
Supply and fit replacement 132kV insulator sets	132kV Fittings	

132kV OHL Earth Wire

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing tower line OH earth wire	Yes	
Supply and erect replacement tower line OH earth wire	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In

		Addition Or Disposal Of Asset
Supply and erect wrapped pilot cable	Pilot wire Overhead	

132kV Tower

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing tower	Yes	
Supply erect new or replacement tower	Yes	
Undertake any necessary tree cutting		
Break up existing foundations and make good ground (where appropriate)		
Excavate and install new or replacement tower foundations (where appropriate)		
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		
Purchase easements		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Dismantle, remove and dispose of existing insulator sets	132kV Fittings	
Supply and erect new or replacement insulator sets	132kV Fittings	

132kV Fittings

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing insulator sets and fittings	Yes	
Supply and erect new or replacement insulator sets and fittings	Yes	
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		

Undertake any necessary tree cutting		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

132kV Earth Wire Fittings

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing fittings	Yes	
Supply and erect new or replacement fittings	Yes	
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Undertake any necessary tree cutting		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

132kV UG Cable (Non Pressurised)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & Install 132kV non pressurised UG Cable	Yes	
All trench excavation, backfilling & reinstatement (including joint holes and link boxes)		

Supply & installation of cable ducting as required		
Supply & Make Off 132kV Joint(s) and terminations, including link boxes		
Disconnect, dismantle, remove and dispose of existing pole or tower termination (where appropriate)		
Supply and erect pole or tower termination (where appropriate). Connect to overhead line		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Fully decommission redundant 132kV cable	Yes	
Dismantle, remove and dispose of pressurised oil tanks etc (where appropriate)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and install pilot cable	Pilot Wire Underground	
Supply and make off pilot cable joints and terminations	Pilot Wire Underground	

132kV Sub cable

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install 132kV submarine cable	Yes	
Disconnect and abandon existing 132kV submarine cable	Yes	
Vessel mobilisation/demobilisation		
Dive team mobilisation/demobilisation		
Jointers mobilisation/demobilisation		
Ploughing or post lay burial jetting.		
Protection where burial not achieved.		
Transition Jointing on shore		
Shore end protection burial		
Tide and weather delays		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

132kV CB (Air Insulated Busbars) (ID)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 132kV Indoor circuit breaker (including protection relays and transducers where CB mounted, post/structure mounted CTs/VTs and structures)	Yes	
Dismantle, remove and dispose of existing 132kV CB (either indoor or outdoor including protection panels, relays and transducers, post/structure mounted CTs/VTs and structures)	Yes	VT/CT as appropriate
Supply & Install 132kV UG Cable (including interplant cables to power transformers)		132kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 132kV Joint(s)		
Terminate 132kV UG cable into circuit breaker		
Dismantle, remove and dispose of existing 132kV OH connections (inc busbars and supports)		
Supply & Make Off 132kV OH terminations (inc busbars and supports)		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earth bar (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment Protection Schemes
Construction of new switchroom/demolition of existing switchroom/Modification to switchroom		Civil works category as appropriate

132kV CB (Air Insulated Busbars) (OD)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset

Dismantle, remove and dispose of existing 132kV CB and associated structures	Yes	
Dismantle, remove and dispose of existing 132kV busbars and associated structures and bay equipment		
Supply and install replacement 132kV outdoor circuit breaker and associated structures (including post/structure mounted CTs/VTs and structures)	Yes	VT/CT as appropriate
Supply and install 132kV busbars and associated structures and associated bay equipment.		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Remove existing control/protection panel at the same site as the prime asset being replaced		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Dismantle, remove and dispose of 132kV isolators and associated structures	132kV Switchgear - Other	
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil works category as appropriate
Supply and install 132kV disconnectors and associated structures	132kV Switchgear - Other	
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Construction/Modification of building/ enclosure to accommodate control/protection panel		Civil works category as appropriate

132kV CB (Gas Insulated Busbars) (ID)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 132kV Indoor circuit breaker (including protection relays and transducers)	Yes	
Dismantle, remove and dispose of existing 132kV CB (either indoor or outdoor including CB panel mounted protection panels, relays and transducers, including stand alone CTs/VTs and structures)	Yes	VT/CT as appropriate

RIIO-T2 regulatory instructions and guidance: Glossary

Supply & Install 132kV UG Cable (including interplant cables to power transformers, except where associated power transformer replacement is undertaken coincident with the circuit breaker replacement)		132kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 132kV Joint(s)		
Terminate 132kV UG cable into circuit breaker		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earth bar (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Construction of new switchroom/demolition of existing switchroom/Modification to switchroom		Civil works category as appropriate

132kV CB (Gas Insulated Busbars) (OD)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 132kV CB and associated structures	Yes	
Dismantle, remove and dispose of existing 132kV busbars and associated structures and bay equipment		
Supply and install replacement 132kV outdoor circuit breaker and associated structures (including stand alone CTs/VTs and structures)	Yes	VT/CT as appropriate
Supply and install 132kV busbars and associated structures and associated bay equipment		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		

RIIO-T2 regulatory instructions and guidance: Glossary

Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Remove existing control/protection panel at the same site as the prime asset being replaced		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Dismantle, remove and dispose of 132kV isolators and associated structures	132kV Switchgear - Other	
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil Works Driven By Asset Replacement
Supply and install 132kV isolators and associated structures	132kV Switchgear - Other	
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Construction/Modification of building/ enclosure to accommodate control/protection panel		Civil works category as appropriate

132kV Switchgear - Other

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 132kV disconnectors, fault throwers, earthing switches and associated structures	Yes	
Dismantle, remove and dispose of existing 132kV disconnectors, fault throwers, earthing switches and associated structures	Yes	
Supply & Install 132kV UG Cable / busbars and connectors		132kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 132kV Joint(s) if appropriate		
Terminate 132kV UG cable into switch (if appropriate)		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		

RIIO-T2 regulatory instructions and guidance: Glossary

Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil works category as appropriate

132kV Transformer

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install 132kV power transformer	Yes	
Dismantle, remove and dispose of existing power transformer (either 132kV, 66kV or 33kV)	Yes	
Supply and install secondary voltage earthing transformer/reactor/resistor		
Remove and Install stand alone CT/VTs and associated structures		VT/CT as appropriate
Remove and Install other associated bay equipment.		
Dismantle existing earthing transformer/reactor/resistor (either 33kV , 66kV, 20kV or 11kV)		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle remove dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement AVC/control & protection panel		
Remove existing AVC/control & protection panel		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab etc to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		
For cable connected transformers:		
All trench excavation, backfilling & reinstatement (including joint holes)		

Supply & Install 132kV Interplant cables		132kV UG Cable (non pressurised)
Supply & make off 132kV cable terminations		
Supply & make off 132kV cable joints		
Supply & install secondary interplant cables (66kV, 33kV & 11kV)		UG cable as appropriate
Supply & make off secondary cable terminations (66kV, 33kV & 11kV)		
Supply & make off secondary cable joints (66kV, 33kV & 11kV)		
For overhead connected transformers:		
Dismantle, remove and dispose of existing 132kV OH terminations (inc busbars and supports)		
Supply & Make Off 132kV OH terminations (inc busbars and supports)		
Dismantle, remove and dispose of existing secondary OH terminations (inc busbars and supports)		
Supply & Make Off secondary OH terminations (inc busbars and supports)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Modification to concrete plinths/bases (including where appropriate complete new plinths and break of existing plinths)		Civil works category as appropriate
Construct/refurbish oil bund (where oil bund previously existed)		Civil works category as appropriate
Construct oil bund (where no oil bund previously existed)		Civil works category as appropriate
Dismantlement/modification/reconstruction of noise enclosures		Civil works category as appropriate
Modification of site walls		Civil works category as appropriate
Construction/ Modification to switchroom to accommodate control/ protection panel		Civil works category as appropriate

Batteries at 132kV Substations

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & install replacement battery and associated charger	Yes	
Dismantle, remove and dispose of existing battery and associated charger	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Construction/Modification to accommodate batteries		Civil works category as appropriate

132kV FACTS Equipment

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install 132kV FACTS Equipment	Yes	
Dismantle, remove and dispose of 132kV FACTS Equipment	Yes	
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle remove dispose of existing multicore cable between asset and marshalling kiosk		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab etc to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Modification to concrete plinths/bases (including where appropriate complete new plinths and break of existing plinths)		Civil works category as appropriate
Dismantlement/modification/reconstruction of enclosures/buildings		Civil works category as appropriate
Modification of site walls		Civil works category as appropriate
Construction/ Modification to switchroom to accommodate control/ protection panel		Civil works category as appropriate

275kV OHL (Pole Line) Conductor

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 275kV wood pole OH line conductor	Yes	
Supply and erect replacement 275kV wood pole OH line conductor	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Remove and dispose of existing 275kV insulators		275kV Pole Refurbishment (no SDI)/ Pole Repair & Maintenance
Supply and fit replacement 275kV insulators		275kV Pole Refurbishment (no SDI)/ Pole Repair & Maintenance
Replacement of poles	275kV Pole	
Installation of additional poles	275kV Pole	

275kV Pole

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing pole (where appropriate)	Yes	
Excavate pole hole		
Dress and erect new (additional or replacement) pole (including cross arm and insulators etc)	Yes	
Undertake any necessary tree cutting		
Excavate stay holes		
Renew stays (where required)		
Dismantle cross bracing (on H poles)		
Supply and fit replacement cross bracing (on H poles)		
Dismantle, remove and dispose of existing 275kV UG cable and associated cable termination (where appropriate)		275kV UG Cable (as appropriate)
Excavate joint hole (where appropriate)		

Supply and make off replacement 275kV pole top UG cable termination (where appropriate)		
Supply and make of 275kV UG cable joint at base of pole (where appropriate)		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Purchase easements		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

275kV OHL (Tower Line) Conductor

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 275kV tower line OH conductor	Yes	
Supply and erect replacement 275kV tower line OH conductor	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and erect wrapped pilot cable	Pilot Wire Overhead	
Remove and dispose of existing 275kV insulator sets	275kV Fittings	
Supply and fit replacement 275kV insulator sets	275kV Fittings	

275kV OHL Earth Wire

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing tower line OH earth wire	Yes	
Supply and erect replacement tower line OH earth wire	Yes	

Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and erect wrapped pilot cable	Pilot wire Overhead	

275kV Tower

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing tower	Yes	
Supply erect new or replacement tower	Yes	
Undertake any necessary tree cutting		
Break up existing foundations and make good ground (where appropriate)		
Excavate and install new or replacement tower foundations (where appropriate)		
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		
Purchase easements		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Dismantle, remove and dispose of existing insulator sets	275kV Fittings	
Supply and erect new or replacement insulator sets	275kV Fittings	

275kV Fittings

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing insulator sets and fittings	Yes	
Supply and erect new or replacement insulator sets and fittings	Yes	
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Undertake any necessary tree cutting		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

275kV Earth Wire Fittings

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing fittings	Yes	
Supply and erect new or replacement fittings	Yes	
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Undertake any necessary tree cutting		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

275kV UG Cable (Non Pressurised)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & Install 275kV non pressurised UG Cable	Yes	
All trench excavation, backfilling & reinstatement (including joint holes and link boxes)		
Supply & installation of cable ducting as required		
Supply & Make Off 275kV Joint(s) and terminations, including link boxes.		
Disconnect, dismantle, remove and dispose of existing pole or tower termination (where appropriate)		
Supply and erect pole or tower termination (where appropriate). Connect to overhead line		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Fully decommission redundant pressurised 275kV cable	Yes	
Dismantle, remove and dispose of pressurised oil tanks etc (where appropriate)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and install pilot cable	Pilot Wire Underground	
Supply and make off pilot cable joints and terminations	Pilot Wire Underground	

275kV Sub cable

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install 275kV submarine cable	Yes	
Disconnect and abandon existing 275kV submarine cable	Yes	
Vessel mobilisation/demobilisation		
Dive team mobilisation/demobilisation		
Jointers mobilisation/demobilisation		
Ploughing or post lay burial jetting.		
Protection where burial not achieved.		
Transition Jointing on shore		
Shore end protection burial		
Tide and weather delays		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

275kV CB (Air Insulated Busbars) (ID)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 275kV Indoor circuit breaker (including protection relays and transducers)	Yes	
Dismantle, remove and dispose of existing 275kV CB (either indoor or outdoor including protection panels, relays and transducers)	Yes	
Remove and Install stand alone CT/VTs and associated structures		VT/CT as appropriate
Supply & Install 275kV UG Cable (including interplant cables to power transformers)		275kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 275kV Joint(s)		
Terminate 275kV UG cable into circuit breaker		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earth bar (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment Protection Schemes

Construction of new switchroom/demolition of existing switchroom/Modification to switchroom		Civil works category as appropriate
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275kV CB (Air Insulated Busbars) (OD)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 275kV CB and associated structures	Yes	
Dismantle, remove and dispose of existing 275kV busbars and associated structures and bay equipment		
Supply and install replacement 275kV outdoor circuit breaker and associated structures (including stand alone CT/VTs and structures)	Yes	VT/CT as appropriate
Supply and install 275kV busbars and associated structures		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Remove existing control/protection panel at the same site as the prime asset being replaced		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Dismantle, remove and dispose of 275kV isolators and associated structures	275kV Switchgear - Other	
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil works category as appropriate
Supply and install 275kV isolators and associated structures	275kV Switchgear - Other	
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Construction/Modification of building/ enclosure to accommodate control/protection panel		Civil works category as appropriate

275kV CB (Gas Insulated Busbars) (ID)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 275kV Indoor circuit breaker (including protection relays and transducers)	Yes	
Dismantle, remove and dispose of existing 275kV CB (either indoor or outdoor including protection panels, relays and transducers)	Yes	
Remove and Install stand alone CT/VTs and associated structures		VT/CT as appropriate
Supply & Install 275kV UG Cable (including interplant cables to power transformers, except where associated power transformer replacement is undertaken coincident with the circuit breaker replacement)		275kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 275kV Joint(s)		
Terminate 275kV UG cable into circuit breaker		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earth bar (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Construction of new switchroom/demolition of existing switchroom/Modification to switchroom		Civil works category as appropriate

275kV CB (Gas Insulated Busbars) (OD)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
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Dismantle, remove and dispose of existing 275kV CB and associated structures	Yes	
Dismantle, remove and dispose of existing 275kV busbars and associated structures and bay equipment		
Supply and install replacement 275kV outdoor circuit breaker and associated structures (including stand alone CT/VTs and structures)	Yes	VT/CT as appropriate
Supply and install 275kV busbars and associated structures and bay equipment		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Remove existing control/protection panel at the same site as the prime asset being replaced		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Dismantle, remove and dispose of 275V isolators and associated structures	275kV Switchgear - Other	
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil works category as appropriate
Supply and install 275kV isolators and associated structures	275kV Switchgear - Other	
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Construction/Modification of building/ enclosure to accommodate control/protection panel		Civil works category as appropriate

275kV Switchgear - Other

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 275kV disconnectors, fault throwers, earthing switches and associated structures	Yes	
Dismantle, remove and dispose of existing 275kV disconnectors, fault throwers, earthing switches and associated structures	Yes	

Supply & Install 275kV UG Cable / busbars and connectors		275kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 275kV Joint(s) if appropriate		
Terminate 275kV UG cable into switch (if appropriate)		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil works category as appropriate

275kV Transformer

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install 275kV power transformer	Yes	
Dismantle, remove and dispose of existing power transformer (either 400kV, 275kV or 132kV)	Yes	
Supply and install secondary voltage earthing transformer/reactor/resistor		
Remove and Install stand alone CT/VTs and associated structures		VT/CT as appropriate
Remove and Install associated Bay Equipment		
Dismantle existing earthing transformer/reactor/resistor (any voltage)		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle remove dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement AVC/control & protection panel		

Remove existing AVC/control & protection panel		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab etc to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		
For cable connected transformers:		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Install 275kV Interplant cables		275kV UG Cable (non pressurised)
Supply & make off 275kV cable terminations		
Supply & make off 275kV cable joints		
Supply & install secondary interplant cables (all voltages)		UG cable as appropriate
Supply & make off secondary cable terminations (all voltages)		
Supply & make off secondary cable joints (all voltages)		
For overhead connected transformers:		
Dismantle, remove and dispose of existing 275kV OH terminations (inc busbars and supports)		
Supply & Make Off 275kV OH terminations (inc busbars and supports)		
Dismantle, remove and dispose of existing secondary OH terminations (inc busbars and supports)		
Supply & Make Off secondary OH terminations (inc busbars and supports)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Modification to concrete plinths/bases (including where appropriate complete new plinths and break of existing plinths)		Civil works category as appropriate
Construct/refurbish oil bund (where oil bund previously existed)		Civil works category as appropriate
Construct oil bund (where no oil bund previously existed)		Civil works category as appropriate
Dismantlement/modification/reconstruction of noise enclosures		Civil works category as appropriate
Modification of site walls		Civil works category as appropriate
Construction/ Modification to switchroom to accommodate control/ protection panel		Civil works category as appropriate

Batteries at 275kV Substations

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & install replacement battery and associated charger	Yes	
Dismantle, remove and dispose of existing battery and associated charger	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Construction/Modification to accommodate batteries		Civil works category as appropriate

275kV FACTS Equipment

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install 275kV FACTS Equipment	Yes	
Dismantle, remove and dispose of 275kV FACTS Equipment	Yes	
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle remove dispose of existing multicore cable between asset and marshalling kiosk		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab etc to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

Modification to concrete plinths/bases (including where appropriate complete new plinths and break of existing plinths)		Civil works category as appropriate
Dismantlement/modification/reconstruction of enclosures/buildings		Civil works category as appropriate
Modification of site walls		Civil works category as appropriate
Construction/ Modification to switchroom to accommodate control/ protection panel		Civil works category as appropriate

400kV OHL (Pole Line) Conductor

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 400kV wood pole OH line conductor	Yes	
Supply and erect replacement 400kV wood pole OH line conductor	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Remove and dispose of existing 132kV insulators		400kV Pole Refurbishment (no SDI)/ Pole Repair & Maintenance
Supply and fit replacement 132kV insulators		400kV Pole Refurbishment (no SDI)/ Pole Repair & Maintenance
Replacement of poles	400kV Pole	
Installation of additional poles	400kV Pole	

400kV Pole

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing pole (where appropriate)	Yes	
Excavate pole hole		
Dress and erect new (additional or replacement) pole (including cross arm and insulators etc)	Yes	

Undertake any necessary tree cutting		
Excavate stay holes		
Renew stays (where required)		
Dismantle cross bracing (on H poles)		
Supply and fit replacement cross bracing (on H poles)		
Dismantle, remove and dispose of existing 400kV UG cable and associated cable termination (where appropriate)		400kV UG Cable (as appropriate)
Excavate joint hole (where appropriate)		
Supply and make off replacement 400kV pole top UG cable termination (where appropriate)		
Supply and make of 400kV UG cable joint at base of pole (where appropriate)		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Purchase easements		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

400kV OHL (Tower Line) Conductor

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 400kV tower line OH conductor	Yes	
Supply and erect replacement 400kV tower line OH conductor	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and erect wrapped pilot cable	Pilot Wire Overhead	
Remove and dispose of existing 400kV insulator sets	400kV Fittings	
Supply and fit replacement 400kV insulator sets	400kV Fittings	

400kV OHL Earth Wire

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing EHV tower line OH earth wire	Yes	
Supply and erect replacement EHV tower line OH earth wire	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and erect wrapped pilot cable	Pilot wire Overhead	

400kV Tower

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing tower	Yes	
Supply erect new or replacement tower	Yes	
Undertake any necessary tree cutting		
Break up existing foundations and make good ground (where appropriate)		
Excavate and install new or replacement tower foundations (where appropriate)		
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		
Purchase easements		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Dismantle, remove and dispose of existing insulator sets	400kV Fittings	
Supply and erect new or replacement insulator sets	400kV Fittings	

400kV Fittings

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing insulator sets and fittings	Yes	
Supply and erect new or replacement insulator sets and fittings	Yes	
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Undertake any necessary tree cutting		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

400kV Earth Wire Fittings

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing fittings	Yes	
Supply and erect new or replacement fittings	Yes	
Lower and re-erect existing conductors (where appropriate)		
Temporarily divert existing conductors		
Undertake any necessary tree cutting		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

Provision and use of mechanical aids, scaffolding etc		
COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

400kV UG Cable (Non Pressurised)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & Install 400kV non pressurised UG Cable	Yes	
All trench excavation, backfilling & reinstatement (including joint holes and link boxes)		
Supply & installation of cable ducting as required		
Supply & Make Off 400kV Joint(s) and terminations, including link boxes		
Disconnect, dismantle, remove and dispose of existing pole or tower termination (where appropriate)		
Supply and erect pole or tower termination (where appropriate). Connect to overhead line		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Fully decommission redundant pressurised 400kV cable	Yes	
Dismantle, remove and dispose of pressurised oil tanks etc (where appropriate)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and install pilot cable	Pilot Wire Underground	
Supply and make off pilot cable joints and terminations	Pilot Wire Underground	

400kV Sub cable

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install 400kV submarine cable	Yes	
Disconnect and abandon existing 400kV submarine cable	Yes	
Vessel mobilisation/demobilisation		
Dive team mobilisation/demobilisation		
Jointers mobilisation/demobilisation		
Ploughing or post lay burial jetting.		
Protection where burial not achieved.		
Transition Jointing on shore		
Shore end protection burial		
Tide and weather delays		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

400kV CB (Air Insulated Busbars) (ID)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 400kV Indoor circuit breaker (including protection relays and transducers)	Yes	
Dismantle, remove and dispose of existing 400kV CB (either indoor or outdoor including protection panels, relays and transducers)	Yes	
Remove and Install stand alone CT/VTs and associated structures		VT/CT as appropriate
Supply & Install 400kV UG Cable (including interplant cables to power transformers)		400kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 400kV Joint(s)		
Terminate 400kV UG cable into circuit breaker		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earth bar (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment Protection Schemes
Construction of new switchroom/demolition of existing switchroom/Modification to switchroom		Civil works category as appropriate

400kV CB (Air Insulated Busbars) (OD)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 400kV CB and associated structures	Yes	
Dismantle, remove and dispose of existing 400kV busbars and associated structures and bay equipment		
Supply and install replacement 400kV outdoor circuit breaker and associated structures (including stand alone CT/VTs and structures)	Yes	VT/CT as appropriate
Supply and install 400kV busbars and associated structures and bay equipment		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Remove existing control/protection panel at the same site as the prime asset being replaced		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In

		Addition Or Disposal Of Asset
Dismantle, remove and dispose of 400kV isolators and associated structures	400kV Switchgear - Other	
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil works category as appropriate
Supply and install 400kV isolators and associated structures	400kV Switchgear - Other	
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Construction/Modification of building/ enclosure to accommodate control/protection panel		Civil works category as appropriate

400kV CB (Gas Insulated Busbars) (ID)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 400kV Indoor circuit breaker (including protection relays and transducers)	Yes	
Dismantle, remove and dispose of existing 400kV CB (either indoor or outdoor including protection panels, relays and transducers)	Yes	
Remove and Install stand alone CT/VTs and associated structures		VT/CT as appropriate
Supply & Install 400kV UG Cable (including interplant cables to power transformers, except where associated power transformer replacement is undertaken coincident with the circuit breaker replacement)		400kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 400kV Joint(s)		
Terminate 400kV UG cable into circuit breaker		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earth bar (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Construction of new switchroom/demolition of existing switchroom/Modification to switchroom		Civil works category as appropriate

400kV CB (Gas Insulated Busbars) (OD)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing 400kV CB and associated structures	Yes	
Dismantle, remove and dispose of existing 400kV busbars and associated structures and bay equipment		
Supply and install replacement 400kV outdoor circuit breaker and associated structures (including stand alone CT/VTs and structures)	Yes	VT/CT as appropriate
Supply and install 400kV busbars and associated structures and bay equipment		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Remove existing control/protection panel at the same site as the prime asset being replaced		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Dismantle, remove and dispose of 400kV isolators and associated structures	400kV Switchgear - Other	
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil works category as appropriate
Supply and install 400kV isolators and associated structures	400kV Switchgear - Other	

Supply & install replacement battery and associated charger	Batteries as appropriate	
Dismantle, remove and dispose of existing battery and associated charger	Batteries as appropriate	
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Construction/Modification of building/ enclosure to accommodate control/protection panel		Civil works category as appropriate

400kV Switchgear - Other

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install replacement 400kV disconnectors, fault throwers, earthing switches and associated structures	Yes	
Dismantle, remove and dispose of existing 400kV disconnectors, fault throwers, earthing switches and associated structures	Yes	
Supply & Install 400kV UG Cable / busbars and connectors		400kV UG Cable (Non Pressurised)
Supply & installation of cable ducting as required		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Make Off 400kV Joint(s) if appropriate		
Terminate 400kV UG cable into switch (if appropriate)		
Make off multicore terminations		
Dismantle, remove and dispose of existing multicore cable between asset and marshalling kiosk		
Supply and install replacement control/protection panel at the same site as the prime asset being replaced		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Replacement of associated protection, control or SCADA equipment located at a remote site to the prime asset being replaced		Refurbishment – Protection Schemes
Modification to concrete plinth/base (including where appropriate complete new plinths and break of existing plinth)		Civil works category as appropriate

400kV Transformer

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install 400kV power transformer	Yes	
Dismantle, remove and dispose of existing power transformer (either 400kV, 275kV or 132kV)	Yes	
Supply and install secondary voltage earthing transformer/reactor/resistor		
Dismantle existing earthing transformer/reactor/resistor (either 33kV , 66kV, 20kV or 11kV)		
Remove and Install stand alone CT/VTs and associated structures		VT/CT as appropriate
Remove and install associated bay equipment.		
Supply and install replacement multicore cable between asset and marshalling kiosk		
Make off multicore terminations		
Dismantle remove dispose of existing multicore cable between asset and mashalling kiosk		
Supply and install replacement AVC/control & protection panel		
Remove existing AVC/control & protection panel		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab etc to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		
For cable connected transformers:		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Install 400kV Interplant cables		400kV UG Cable (non pressurised)
Supply & make off 400kV cable terminations		
Supply & make off 400kV cable joints		
Supply & install secondary interplant cables (all voltages)		UG cable as appropriate
Supply & make off secondary cable terminations (all voltages)		
Supply & make off secondary cable joints (all voltages)		
For overhead connected transformers:		
Dismantle, remove and dispose of existing 400kV OH terminations (inc busbars and supports)		
Supply & Make Off 400kV OH terminations (inc busbars and supports)		
Dismantle, remove and dispose of existing secondary OH terminations (inc busbars and supports)		
Supply & Make Off secondary OH terminations (inc busbars and supports)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Modification to concrete plinths/bases (including where appropriate complete new plinths and break of existing plinths)		Civil works category as appropriate
Construct/refurbish oil bund (where oil bund previously existed)		Civil works category as appropriate
Construct oil bund (where no oil bund previously existed)		Civil works category as appropriate
Dismantlement/modification/reconstruction of noise enclosures		Civil works category as appropriate
Modification of site walls		Civil works category as appropriate
Construction/ Modification to switchroom to accommodate control/ protection panel		Civil works category as appropriate

Batteries at 400kV Substations

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & install replacement battery and associated charger	Yes	
Dismantle, remove and dispose of existing battery and associated charger	Yes	
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Construction/Modification to accommodate batteries		Civil works category as appropriate

400kV FACTS Equipment

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install 400kV FACTS Equipment	Yes	
Dismantle, remove and dispose of 400kV FACTS Equipment	Yes	
Supply and install replacement multicore cable between asset and marshalling kiosk		

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Make off multicore terminations		
Dismantle remove dispose of existing multicore cable between asset and marshalling kiosk		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab etc to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Modification to concrete plinths/bases (including where appropriate complete new plinths and break of existing plinths)		Civil works category as appropriate
Dismantlement/modification/reconstruction of enclosures/buildings		Civil works category as appropriate
Modification of site walls		Civil works category as appropriate
Construction/ Modification to switchroom to accommodate control/ protection panel		Civil works category as appropriate

Pilot Wire Overhead

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & Install overhead pilot cable	Yes	
Disconnect and remove existing overhead pilot cable or abandon existing Cable (where applicable)	Yes	
Supply and make off pilot cable joints		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

Pilot Wire Underground

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & Install underground pilot cable	Yes	
Disconnect and remove existing underground pilot cable or abandon existing Cable (where applicable)	Yes	
Supply and make off pilot cable joints		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

Multicore Cable

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & Install multicore cable	Yes	

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Disconnect and remove existing multicore cable or abandon existing Cable (where applicable)	Yes	
Supply and make off multicore cable joints		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

HVDC Equipment

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install DC Converter Equipment	Yes	
Dismantle, remove and dispose of DC Converter Equipment	Yes	
Supply and install replacement multicore cable		
Make off multicore terminations		
Dismantle remove dispose of existing multicore cable		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab etc to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Modification to concrete plinths/bases (including where appropriate complete new plinths and break of existing plinths)		Civil works category as appropriate
Dismantlement/modification/reconstruction of enclosures/buildings		Civil works category as appropriate
Modification of site walls		Civil works category as appropriate
Construction/ Modification to switchroom to accommodate control/ protection panel		Civil works category as appropriate

HVDC Converter Transformer

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install converter transformer	Yes	
Dismantle, remove and dispose of existing converter	Yes	
Supply and install replacement multicore cable		
Make off multicore terminations		
Dismantle remove dispose of existing multicore cable		
Supply and install replacement AVC/control & protection panel		

Remove existing AVC/control & protection panel		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Delivery of plant to site and use of crane/hiab etc to aid plant installation		
Connection to substation earthing system (including extension of substation earth grid, where required)		
For cable connected transformers:		
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & Install Interplant cables		UG cable as appropriate
Supply & make off cable terminations		
Supply & make off cable joints		
Supply & install secondary interplant cables (all voltages)		UG cable as appropriate
Supply & make off secondary cable terminations (all voltages)		
Supply & make off secondary cable joints (all voltages)		
For overhead connected transformers:		
Dismantle, remove and dispose of existing OH terminations (inc busbars and supports)		
Supply & Make Off OH terminations (inc busbars and supports)		
Dismantle, remove and dispose of existing secondary OH terminations (inc busbars and supports)		
Supply & Make Off secondary OH terminations (inc busbars and supports)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Modification to concrete plinths/bases (including where appropriate complete new plinths and break of existing plinths)		Civil works category as appropriate
Construct/refurbish oil bund (where oil bund previously existed)		Civil works category as appropriate
Construct oil bund (where no oil bund previously existed)		Civil works category as appropriate
Dismantlement/modification/reconstruction of noise enclosures		Civil works category as appropriate
Modification of site walls		Civil works category as appropriate
Construction/ Modification to switchroom to accommodate control/ protection panel		Civil works category as appropriate

HVDC UG Cable

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply & Install HVDC UG Cable	Yes	
All trench excavation, backfilling & reinstatement (including joint holes)		
Supply & installation of cable ducting as required		
Supply & Make Off Joint(s) and terminations		
Disconnect, dismantle, remove and dispose of existing pole or tower termination (where appropriate)		
Supply and erect pole or tower termination (where appropriate). Connect to overhead line		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Fully decommission redundant HVDC cable	Yes	

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and install pilot cable	Pilot Wire Underground	
Supply and make off pilot cable joints and terminations	Pilot Wire Underground	

HVDC Sub cable

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Supply and install HVDC submarine cable	Yes	
Disconnect and abandon existing HVDC submarine cable	Yes	
Vessel mobilisation/demobilisation		
Dive team mobilisation/demobilisation		
Jointers mobilisation/demobilisation		
Ploughing or post lay burial jetting.		
Protection where burial not achieved.		
Transition Jointing on shore		
Shore end protection burial		
Tide and weather delays		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset

HVDC OH Conductor

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET	Report As Prime Asset	Report As Consequential Asset
Dismantle, remove and dispose of existing HVDC OH Conductor	Yes	
Supply and erect replacement HVDC OH conductor	Yes	
Dismantle, remove and dispose of existing aerial earthwire		
Associated network operations (Switching, linking, use of mobile generation, issuing safety documentation, pre-commissioning tests and energisation)		
Undertake any necessary tree cutting		
Provision and use of mechanical aids, scaffolding etc		

COSTS OUTSIDE SCOPE OF REPLACING PRIME ASSET	Report Costs And Activity As Separate Prime Asset Replacement	Report Costs And Activity As Separate Activity That Does Not Result In Addition Or Disposal Of Asset
Supply and erect wrapped pilot cable	Pilot Wire Overhead	
Remove and dispose of existing insulator sets	Fittings	
Supply and fit replacement insulator sets	Fittings	

Civil Works Associated with Asset Replacement/New Construction

See Numerical Definition for Inclusions

Civil Works Associated with Substation Platform

See Numerical Definition for Inclusions

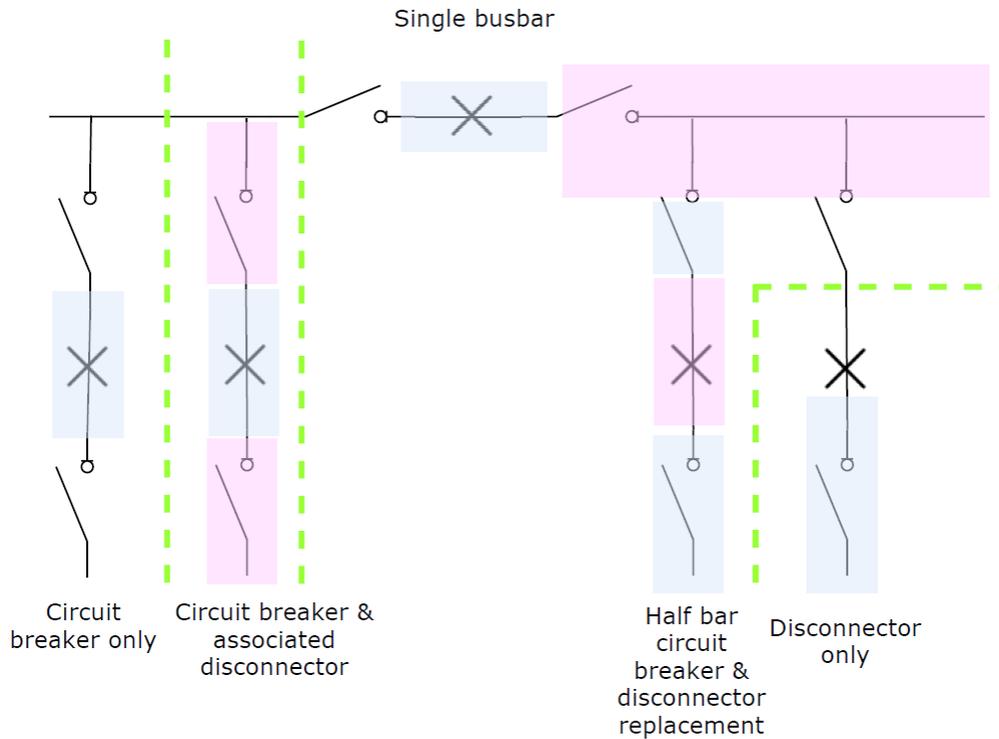
Civil Works Associated with Site Access

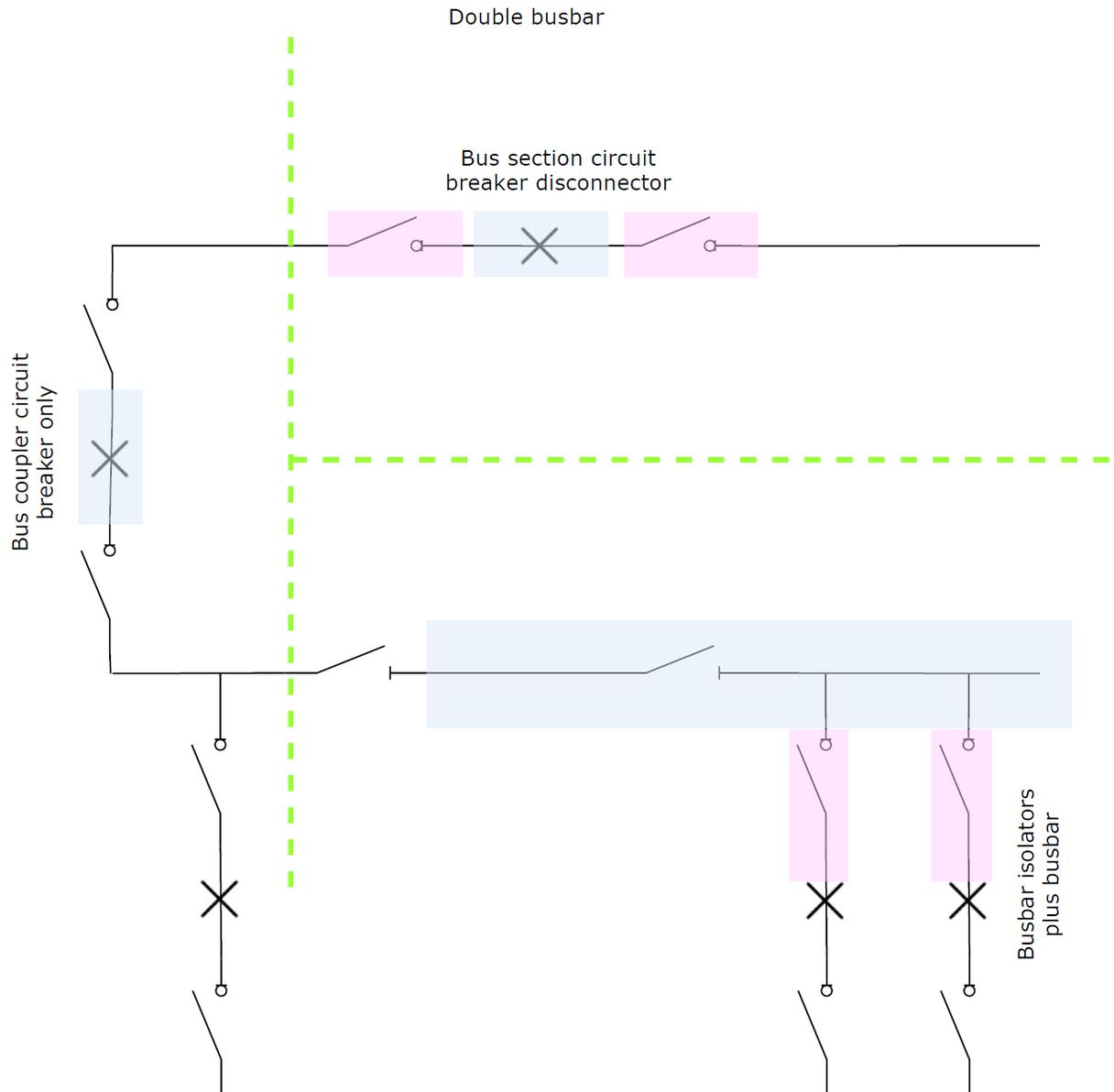
See Numerical Definition for Inclusions

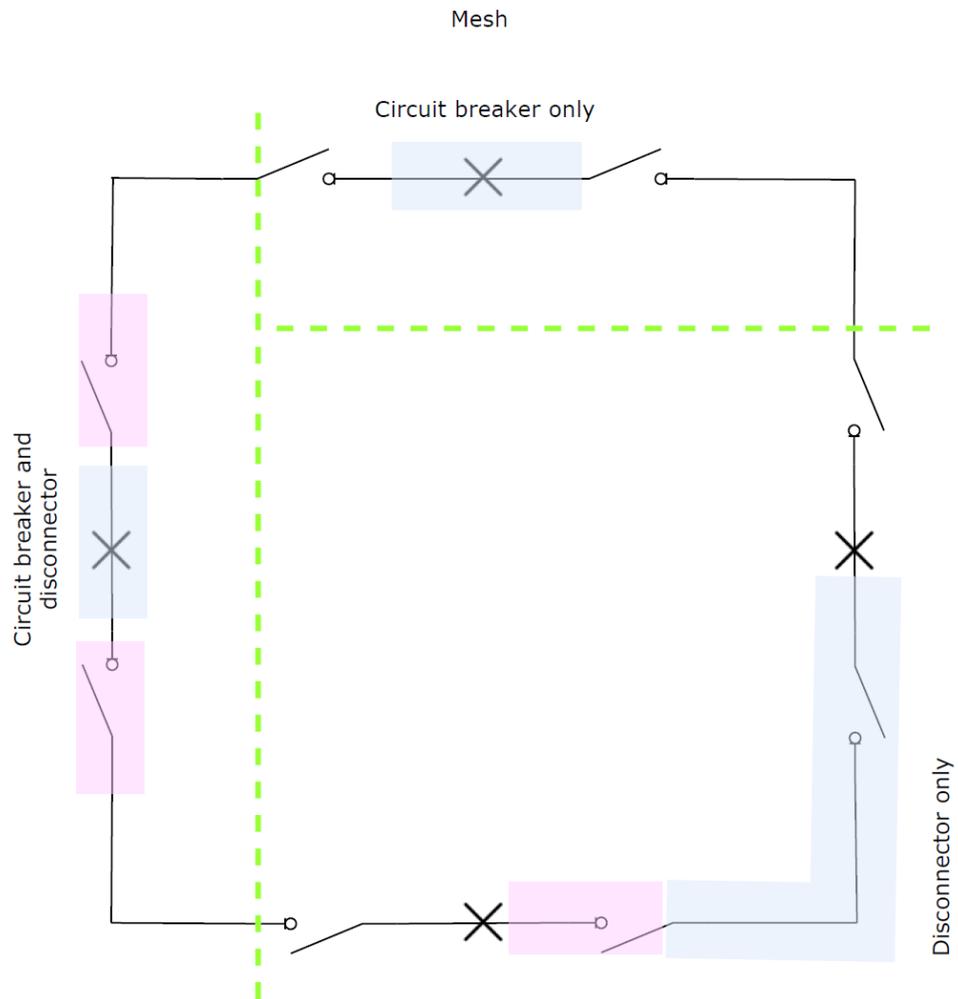
6. Cost Allocation Diagrams

To assist in the allocation of costs to an activity on an asset, the following diagrams are provided as examples of boundaries between apparatus for various activities.

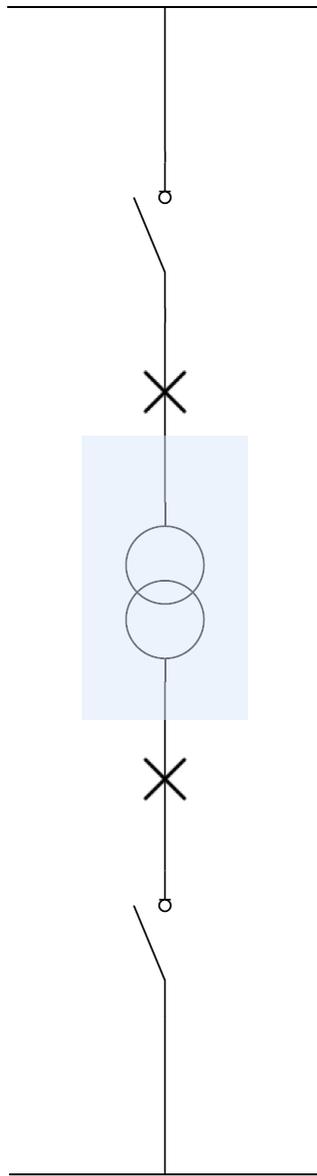
They are not an exhaustive record of all works, but the allocation philosophy can be extended where the exact nature of any intervention is not covered.



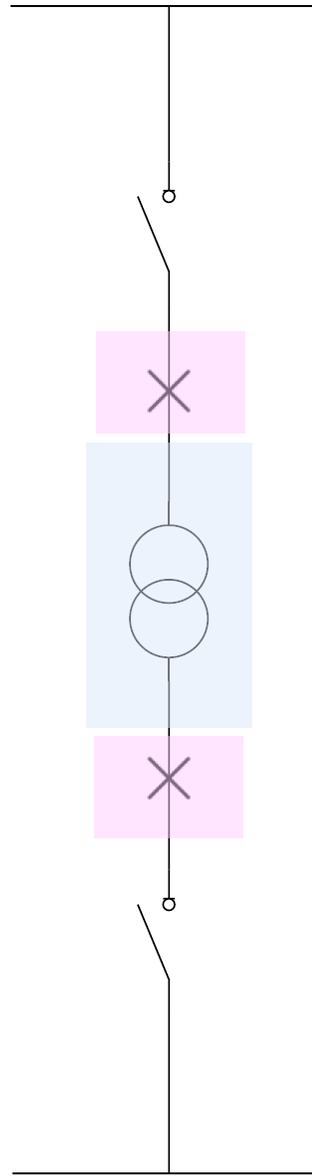




Transformer bay 1

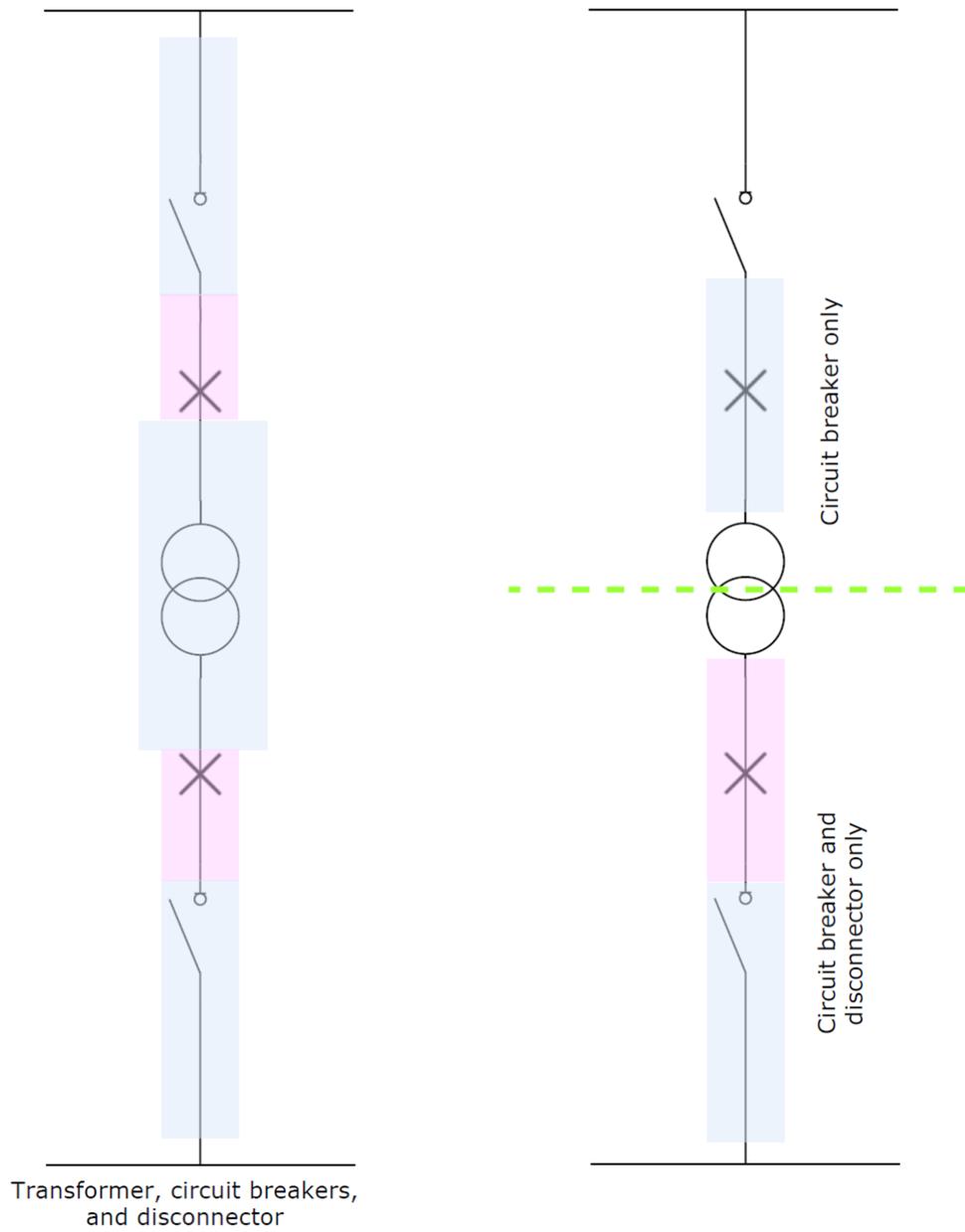


Transformer only

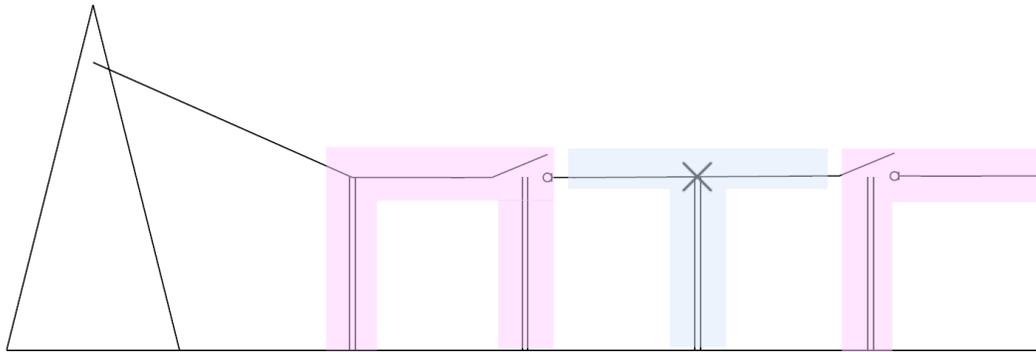


Transformer plus
circuit breakers

Transformer bay 2

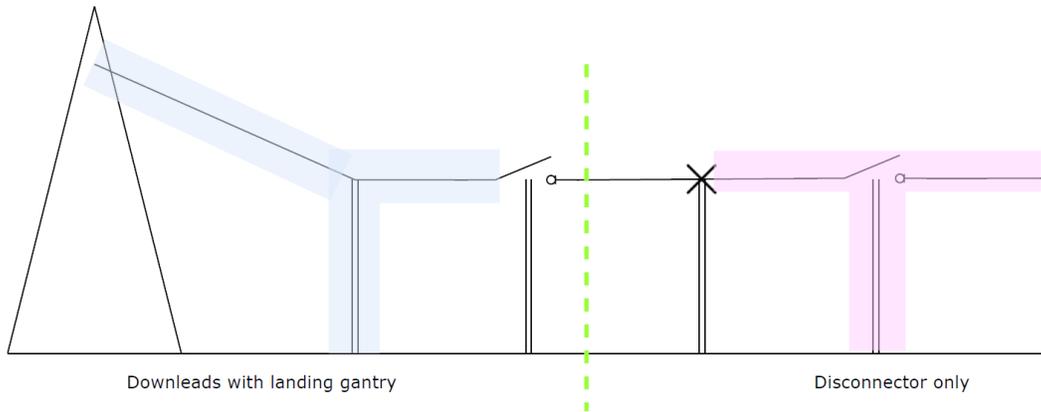


Line entry 1



Full circuit breaker bay with structures

Line entry 2



Downleads with landing gantry

Disconnector only

