



Appendix 3A: Unit rates

**TRR Unit Rates – Primary, Civil, Secondary,
Communications and Lines**

Monday, 7 September 2026

Issue/amendment status

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1. Introduction

The purpose of this document is to provide the unit rates that been applied to forecast capital expenditure for the 2027-2032 TRR and to explain the basis of each of the rates. All rates are P50/Class 5 and are presented in real 2025 dollars¹. Class 5 estimate is an estimate prepared at any stage of a project which has a 50% confidence factor of not being exceeded by cost at completion.

The AER's Draft Decision published in June 2026 rejected the use of risk allowances in unit rates. We accept this aspect of the Draft Decision and have therefore removed risk allowances from the unit rates used in updated economic models.

We have also updated several unit rates and added a small number of new unit rates to reflect the latest information from our delivery programs and design studies. This reflects an additional 10 months of on-the-ground information that has come to light since the Initial Proposal. We confirm that the new and updated unit rates do not contain risk allowances, consistent with the AER's Draft Decision.

To assist the AER in navigating this document, we have highlighted updates (apart from the removal of risk allowances) in blue, and new unit rates in green.

¹ 2024/25 is the AusNet Service financial year commencing 1 April 2024 and ending 31 March 2025

2. Basis of Rates

The basis of the unit rates used to develop the capital expenditure forecast is described in this section.

2.1. Terminal Stations and Lines

The approach to forecasting capital expenditure categories is explained in the *Project Cost Estimating Methodology*. This document details the unit rates used in each category of capital expenditure.

The unit rates are compiled based on the project cost estimating spreadsheet (Top-down transmission estimate for option selection only). This spreadsheet is built up using a bottom-up approach, with labour and materials itemised individually. The spreadsheet is maintained by Project Development Team.

The following have been adopted in the preparation of the unit rates for works within the Terminal Station and lines:

Material costs used in the unit rates presented in this document which are based on period contract pricing from suppliers has been identified in Table 1 below. These period contracts have been established through competitive tender process. Material cost for transformer bushings and lines works has been based on estimates obtained from contractors and manufacturers.

Table 1: Period order items

Period order items (Cost as of Sep 2025)	Price
500kV Current Transformers	[C-I-C]
500kV Live Tank Circuit Breakers.	[C-I-C]
500kV ROI.	[C-I-C]
500kV Surge Arrestors	[C-I-C]
200kV Current Transformers	[C-I-C]
220kV Dead Tank Circuit Breaker	[C-I-C]
220kV Remote Operated Isolator	[C-I-C]
220kV Capacitive Voltage Transformer	[C-I-C]
220kV Live tank Cap bank CB	[C-I-C]
220kV Surge Arrestors	[C-I-C]
66 kV Current Transformer	[C-I-C]
66kV Dead Tank Circuit Breaker	[C-I-C]
66kV Isolators	[C-I-C]
66kV Surge Arrestors	[C-I-C]
66kV Live Tank Circuit Breaker	[C-I-C]
66kV MVT -3 Phase	[C-I-C]
22kV Dead Tank Circuit Breakers.	[C-I-C]
22kV disconnecter	[C-I-C]

Period order items (Cost as of Sep 2025)	Price
22kV Surge Arrestors	[C-I-C]
250 Battery Bank and Charger	[C-I-C]
48V Battery Bank and Charger	[C-I-C]
Protection relays (2 relay)	[C-I-C]
Protection Panels (without protection relays)	[C-I-C]

- Cost of producing project designs has been based on historical cost for similar projects. AusNet Services predominantly procures design services through a Design Delivery Provider (DDP) panel established through competitive tender process.
- Construction costs in the unit rates presented in this document have been derived from historical cost for similar projects. AusNet Services predominantly procures construction works through an Construction Delivery Partner (CDP) panel established through competitive tender process.
- AusNet Services internal cost i.e. Project Management, Quality Assurance, Site Supervision and Engineering support costs are based on internal rates.
- Project Components Uncertainty² was included in unit rates for the Initial Proposal, however all risk allowances have been removed from unit rates in the Revised Proposal (except for the Portland Stage 2 project, which is now supported by a detailed risk register)

Further explanation of the project cost estimating database and methodology is contained in the *Project Cost Estimating Methodology*.

2.2. Primary Works

- a) The unit rates are developed based on the assumptions that future project scopes will replace or install switchgear at one terminal station, as a minimum of:
- a. Two similar primary plant

2.3. Secondary Works

- a) The unit rates are developed based on the assumptions that future project scopes will replace or install new protection and control systems at one terminal station, as a minimum of:
- a. Two similar protection and control schemes, and
- b. In case of bus protection, two bus protection schemes.
- b) The unit rates are developed based on the assumptions that auxiliary supplies (e.g. DC Board, AC Supplies) are adequate for given protection and control replacement works.

² Project Components Uncertainty is a calculation (or estimate) of the variability that occurs in all projects. This variability arises from uncertainty in pricing or volumes of component activities. The uncertainties are a portion of the difference between the outturn and assumptions in the reference estimate.

2.4. Overhead Lines

The unit rates are developed based on the following:

- 500kV double circuit suspension transmission tower replacement with new 500kV double circuit suspension tower.
Based on current project estimates
- Member replacement for various categories in the line section.
- Tower Resilience bases on kg
- 500kV and 220kV Insulator replacement:
 - Insulator replacement unit rates are based on doing projects of various numbers of towers
 - Conductor for 500kV "I" and "V" string is based on quad "orange"
 - Conductor for 220kV "I" and "V" string is based on twin "lemon"
- Groundwire replacement
 - 'Like for Like' and OPGW replacement in metro area is based on 1km line using "grape" conductor.
 - Reinforcement-Entire Tower with Foundation per Tower rate – **new rate added**
 - Reinforcement-Entire Tower without Foundation per Tower rate – **new rate added**
 - Reinforcement only GW peak per Tower rate – **new rate added**
- Fall arrest system replacement for rack, 500kV Tower and 330kV Tower
- Low spans-based on project estimate
 - Raising conductors with Strain pole (Replacing towers with poles) – **new rate added**
 - Raising conductors with suspension pole (Replacing towers with poles) – **new rate added**

3. Unit Rates

3.1. Unit Rates – Primary Systems

The rates in this section have been used to estimate programs of expenditure associated with replacement of stations assets. These assets are located within the terminal stations used to transform extra high voltage to sub transmission voltages. Rates in this section are inclusive of civil, primary equipment and associated secondary works, unless otherwise specified.

3.1.1. Allowances

The following items have been allowed for within the stations unit rates:

- Decommissioning and removal of existing equipment
- Supply, installation, testing and commissioning of equipment
- Earthworks, foundations and structures (where applicable)
- Cabling (secondary and power) (where applicable)
- Protection and control associated with the equipment including interfacing works (where applicable)
- Interplant connections
- Earthing modifications
- Operational outage costs (i.e. planning preparation of outages & network switching)
- Design
- AusNet Services internal labour costs (i.e. Project Management, Quality Assurance, Site Supervision and Engineering support)
- Contractor indirect costs.

3.1.2. Exclusions

The following items have been excluded from the stations unit rates:

- Planning and building permit applications
- Land acquisitions and easement creation
- Site surveys, geotechnical investigations and reports
- Additional cable ducts or cable trenches - assume existing is suitable and sufficient capacity
- Removal of contaminants such as asbestos, PCBs and contaminated soil

- Costs associated with any environmental works
- Communication systems and schemes (Unless specified in this document)
- Management reserve³
- Cost escalations
- Financing cost and corporate overheads
- Written-down values
- Spares
- Operations and maintenance costs.
- Written-Down Values, line rebates and MIP Scheme⁴.

3.2. Switchyard Bay Equipment Replacement

3.2.1. 500kV Replacement

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Replacement of 500kV - 3 single Phase CTs.	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			
2	Replacement of 500kV Live Tank Circuit Breakers.	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			
3	Replacement of 500kV ROI.	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			
4	Replacement of 500kV Surge Arrestors 3PH	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			

³ An amount of funds, budget, or time needed above the estimate to cover the costs of unforeseen factors related to the delivery of the project objectives, which are not provided for elsewhere in the total job costs. Management Reserve is to be administered at program level. These can include but are not limited to the occurrence of an unplanned or unforeseen event such as a natural event or a major safety incident and the change to planned assumptions, stakeholder issues (outage restrictions, community) and delayed access to site, industrial relations issues external to the Project / Program, and contractual issues or claims.

⁴ MIP Scheme: Market Impact Parameter Transmission Incentive Scheme.

3.2.2. 220kV Replacement

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Replacement of 220kV - 3 single Phase CT's.	Remove existing. Supply, install & commission new on existing structure.	[C-I-C]	[C-I-C]			
2	Replacement of 220kV Dead Tank Circuit Breakers.	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			
3	Replacement of 220kV ROI.	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			
4	Replacement of 220kV - 3 single phase CVT's.	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			
5	Replacement of 220kV Surge Arrestors 3PH	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
6	Replacement of 220kV Live tank Cap bank CB – POW Controlled	Remove existing. Supply, install & commission.	[C-I-C]	[C-I-C]			

3.2.3. 66kV Replacement

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Replacement of 66kV - 3 single Phase CT's.	Remove existing. Supply, install & commission new on existing structure.	[C-I-C]	[C-I-C]			
2	Replacement of 66kV Dead Tank Circuit Breakers.	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			
3	Replacement of 66kV Under slung.	Remove existing. Supply, install & commission new on existing structure.	[C-I-C]	[C-I-C]			
4	Replacement of 66kV MVT's.- 3 single phase	Remove existing. Supply, install & commission new on existing structure.	[C-I-C]	[C-I-C]			
5	Replacement of 66kV Live tank Cap Bank CB-Pow Controlled	Remove existing. Supply, install & commission.	[C-I-C]	[C-I-C]			

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
6	Replacement of 66kV Surge Arrestors 3Ph	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			

3.2.4. 22kV Replacement

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Replacement of 22kV disconnecter	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			
2	Replacement of 22kV Dead Tank Circuit Breakers.	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			
3	Replacement of 22kV Surge Arrestors 3Ph	Remove existing. Supply, install & commission new complete with foundation.	[C-I-C]	[C-I-C]			

3.2.5. Power Transformers Components

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Replacement of WTI/OTI	Remove existing. Supply, install & commission new	[C-I-C]	[C-I-C]			
2	Replacement of TMS (DRMCC)	Remove existing. Supply, install & commission new	[C-I-C]	[C-I-C]	[C-I-C]		Price increase is attributable to higher vendor pricing for the Dynamic Ratings system , together with additional scope identified under Project TD-0017288 TTTS B5 secondary and communications works. This has been validated by AMCL.
3	Refurbishment of Phase Isolated Bus (3 single phase)	Refurbish existing PIB to rectify moisture ingress issue and clean up corroded bushings	[C-I-C]	[C-I-C]			

3.2.6. Major Primary Equipment Replacement

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Replacement of 500kV Transformer Bushing	Remove existing. Supply, install & commission new single phase 500kV transformer bushing	[C-I-C]	[C-I-C]	[C-I-C]		The increase in the unit rate is driven by higher material and installation costs . Material costs are based on [C-I-C] reference pricing, and installation costs are based on the [C-I-C] quotation, with both assumptions validated by AMCL.
2	Replacement of 330/275kV Transformer Bushing.	Replacement of 330/275kV Transformer Bushing.	[C-I-C]	[C-I-C]	[C-I-C]		The increase in the unit rate is driven by higher material and installation costs . Material costs are based on [C-I-C] reference pricing, and installation costs are based on the [C-I-C] quotation, with both assumptions validated by AMCL.
3	Replacement of 220kV Transformer Bushing.	Remove existing. Supply, install & commission new single phase 220kV transformer bushing	[C-I-C]	[C-I-C]	[C-I-C]		The increase in the unit rate is driven by higher material and installation costs . Material costs are based on [C-I-C] reference pricing, and installation costs are based on the [C-I-C] quotation, with both assumptions validated by AMCL.
4	Replacement of 66kV Transformer Bushing.	Remove existing. Supply, install & commission new single phase 66kV transformer bushing	[C-I-C]	[C-I-C]	[C-I-C]		The increase in the unit rate is driven by higher installation costs , based on the [C-I-C] quotation, with this assumption validated by AMCL.

3.3. Unit Rates – Civil Works

3.3.1. Allowances

The following items have been allowed for within the stations unit rates:

- Decommissioning and removal of existing equipment
- Supply, installation, testing and commissioning of equipment/building
- Earthworks, foundations and structures (where applicable)
- Cabling (secondary and power) (where applicable)
- Protection and control associated with the equipment including interfacing works (where applicable)
- Earthing modifications
- Operational outage costs (i.e. planning preparation of outages & network switching)
- Design
- AusNet Services internal labour costs (i.e. Project Management, Quality Assurance, Site Supervision and Engineering support)
- Contractor indirect costs.

3.3.2. Exclusions

The following items have been excluded from the stations unit rates:

- Planning and building permit applications
- Land acquisitions and easement creation
- Site surveys, geotechnical investigations and reports
- Additional cable ducts or cable trenches - assume existing is suitable and sufficient capacity
- Removal of contaminants such as asbestos, PCBs and contaminated soil
- Costs associated with any environmental works
- Communication systems and schemes
- Management reserve
- Cost escalations
- Financing cost and corporate overheads
- Written-down values

- Spares
- Operations and maintenance costs.
- Written-Down Values, line rebates and MIP Scheme.

3.3.3. Replacement

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Replace VESDA and Fire Indication Panel	Remove existing and Install New	[C-I-C]	[C-I-C]			
2	Replace fire hydrant system (assuming Pipe work is 320mtrs).	Remove existing & install New.	[C-I-C]	[C-I-C]			
3	Control Building renovation (Amenities, Painting, Lighting upgrade, doors and windows) as per MLTS	Remove existing & install New.	[C-I-C]	[C-I-C]			
4	Replace Airconditioning unit	Remove existing and install new, inclusive of asbestos AC circuit board replacement	[C-I-C]	[C-I-C]			
5	Replace Cable trench cover (per cover)	Supply & install 1.210 x 850 x 8mm HD checker plate galvanised cable duct covers	[C-I-C]	[C-I-C]			
6	Switchyard Resurface	Resurface switchyard based on 10,000 sqmtrs	[C-I-C]	[C-I-C]			
7	Station Sealed Road	Station sealed road based on 334 sq meters	[C-I-C]	[C-I-C]			
8	Station Service Supplies	Supply and Install AC Changeover board Decommission existing Changeover boards Perform AC load checks after installation Supply and Install AC distribution boards Supply and Install Switchyard lighting box Cabling associated with Changeover boards	[C-I-C]	[C-I-C]			

3.4. Unit Rates – Secondary Systems

The rates in this section have been used to estimate programs of expenditure associated with secondary assets. These assets are located within Terminal Stations and include items such as line protection, transformer protection and Bus protection.

3.4.1. Allowances

The following items have been allowed for in the secondary unit rates:

- Decommissioning and removal of existing equipment
- Protection and control associated with the equipment including interfacing works
- Supply, installation, testing and commissioning
- Control cabling from cubicle to ITC
- Inter-cubicle wiring
- Cubicle earthing and cable tray
- Modification and interfacing works
- Design cost
- AusNet Services internal labour costs (e.g. Project Management, Quality Assurance, Site Supervision and Engineering support)
- Contractor indirect costs

3.4.2. Exclusions

The following items have been excluded from the secondary unit rates:

- Building modification or extension works
- Removal of asbestos
- Communication systems and schemes between the stations
- Non-standard / site specific installations
- Management reserve
- Cost escalations
- Financing costs and corporate overheads
- Operation and maintenance costs
- Spares
- Written-Down Values, line rebates and MIP Scheme.

3.4.3. Protection and Control Equipment 220kV

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Line X Protection (Replacement)	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
2	Line Y Protection (Replacement)	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
3	Backup Prot (Replacement)	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
4	Transformer X Protection (Replacement)	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
5	Transformer Y Protection (Replacement)	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
6	Cap Bank protection X Protection	Remove existing, supply, install and commission new	[C-I-C]	[C-I-C]			
7	Cap Bank protection Y Protection	Remove existing, supply, install and commission new	[C-I-C]	[C-I-C]			
8	Bus X Protection (Replacement)	Remove existing, supply, install and commission new	[C-I-C]	[C-I-C]			
9	Bus Y Protection (Replacement)	Remove existing, supply, install and commission new	[C-I-C]	[C-I-C]			

3.4.4. RTU, DC supplies and Weather monitoring

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	RTU – P3: Small	Replacement of Old RTU in existing panel	[C-I-C]	[C-I-C]			
2	RTU – P3: Medium	Replacement of Old RTU in existing panel	[C-I-C]	[C-I-C]			
3	RTU – SCD5200	Replacement of Old RTU in existing panel	[C-I-C]	[C-I-C]			
4	48V Battery Bank, Chargers & Dist Board (X) – (Replacement)	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
	including fireproofing building						
5	48V Battery Bank, Chargers & Dist Board (X) – (Replacement) excluding fireproofing building	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
6	48V Battery Bank, Chargers & Dist Board (Y) – (Replacement) including fireproofing building	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
7	48V Battery Bank, Chargers & Dist Board (Y) – (Replacement) excluding fireproofing building	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
8	250V Battery Bank, Chargers & Dist Board (X) – (Replacement) including fireproofing building	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
9	250V Battery Bank, Chargers & Dist Board (X) – (Replacement) excluding fireproofing building	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
10	250V Battery Bank, Chargers & Dist Board (Y) – (Replacement) including fireproofing building	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
11	250V Battery Bank, Chargers & Dist Board (Y) – (Replacement) excluding fireproofing building	Remove existing. Supply, install & commission new	[C-I-C]	[C-I-C]			
12	Overhead Line Tower Weather Station	Remove existing. Supply, install & commission new	[C-I-C]	[C-I-C]			
13	Ground Mounted Weather Station	Remove existing. Supply, install & commission new	[C-I-C]	[C-I-C]			

3.5. Unit Rates – Communications Systems

The rates in this section have been used to estimate programs of expenditure associated with communications assets. These assets are located within Terminal Stations and Radio Sites. They include items such as SDH, PDH, DIC, TPS, CWDM, DWDM, PTP, RTU, OFC.

3.5.1. Allowances

The following items have been allowed for in the secondary unit rates:

- Decommissioning and removal of existing equipment
- Supply, installation, testing and commissioning
- Cabling from cubicle to ITC
- Inter-cubicle wiring
- Cubicle earthing and cable tray
- Modification and interfacing works
- Design cost
- AusNet Services internal labour costs (e.g. Project Management, Quality Assurance, Site Supervision and Engineering support)
- Contractor indirect costs

3.5.2. Exclusions

The following items have been excluded from the secondary unit rates:

- Building modification or extension works
- Removal of asbestos
- Devices that use communication services
- Non-standard / site specific installations
- Management reserve
- Cost escalations
- Financing costs and corporate overheads
- Operation and maintenance costs
- Spares.
- Written-Down Values, line rebates and MIP Scheme.

3.5.3. Communications Equipment

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	SDH (Synchronous Digital Hierarchy) Node Replacement with MPLS-TP	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
2	PDH (Plesiochronous Digital Hierarchy) Node Replacement	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
3	DIC (Digital Interface Cubicle) Replacement	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
4	TPS (Teleprotection) Node Replacement	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
5	CWDM (Coarse Wavelength Division Multiplexing) Node Replacement	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
6	DWDM (Dense Wavelength Division Multiplexing) Node Replacement	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
7	EXCH (Private Automatic Branch Exchange) Node Replacement	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
8	PTP (Point to Point) Radio Link Replacement – consists of 4 shelves	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
9	Comms RTU (Remote Terminal Unit) Node Replacement	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			
10	OFC ADSS (Fibre Optical Cable) per km	Remove existing. Supply, install & commission new.	[C-I-C]	[C-I-C]			

3.6. Unit Rates – Lines

3.6.1. Allowances

The following items have been allowed for within the stations unit rates:

- Decommissioning and removal of existing equipment
- Supply, installation of equipment
- Earthworks, foundations and structures (where applicable)
- Operational outage costs (i.e. planning preparation of outages & network switching)
- Design, geotechnical investigation and shop details/drafting (where required)
- AusNet Services internal labour costs (i.e. Project Management, Quality Assurance, Site Supervision and Engineering support)
- Contractor indirect costs.

3.6.2. Exclusions

The following items have been excluded from the stations unit rates:

- Planning and building permit applications
- Land acquisitions, easement creation and landowner compensation
- Additional cable ducts or cable trenches - assume existing is suitable and sufficient capacity
- Removal of contaminants such as asbestos, PCBs and contaminated soil
- Costs associated with any environmental works or heritage issues
- Communication systems, underground fibre and multiplex equipment racks etc (for OPGW)
- Management reserve
- Cost escalations
- Financing cost and corporate overheads

3.6.3. Tower Replacement

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	500kV double circuit suspension transmission tower replacement with new 500kV double circuit suspension tower. (Outage with monopoles methods)	Transfer conductors to monopole bypass, remove existing tower. Supply, install & commission new tower also includes 50 metre access track and crane pad. Reinstatement of conductor to new tower will require an outage.	[C-I-C]	[C-I-C]			

Costing based on 500kV Delta and Double Circuit HYTS-APD Towers.

3.6.4. Tower Member Replacement

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Simple	Replacement of non-critical member requiring no rigging	[C-I-C]	[C-I-C]			
2	Medium	Replacement of non-critical member requiring simple rigging methods	[C-I-C]	[C-I-C]			
3	Complex – Crane	Replacement of critical member requiring use of crane	[C-I-C]	[C-I-C]			
4	Complex - Rigging	Replacement of critical member requiring use of complex rigging methods	[C-I-C]	[C-I-C]			
5	Splint	Reinforcement of critical member using splint method: cleaning of existing member using abrasive blasting, fixing of new member onto the serviceable component of the member.	[C-I-C]	[C-I-C]			
6	Bolt Replacement	Replacement of single Bolt	[C-I-C]	[C-I-C]			
7	Sherardised Bolt Supply	Sherardised Bolt Supply	[C-I-C]	[C-I-C]			

3.6.5. Tower Resilience

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Steelwork weight (kg) to reinforce existing structure	Additional steelwork to reinforce tower structure with appropriate connections, e.g., bolts or U-bolt connections.	[C-I-C]	[C-I-C]			Rather than applying this rate, our new analysis applies a "per tower" rate, shown below
2	Steelwork weight per tower to reinforce existing structure	Additional steelwork to reinforce tower structure with appropriate connections, e.g., bolts or U-bolt connections per tower				[C-I-C]	A new consolidated per-tower rate for the expanded scope, based on submitted BECA network resilience report cost estimation rates

3.6.6. Insulator Replacement

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	500kV strain insulator replacement with new 500kV composite strain insulators	Supply, install & commission new quad insulator (3 Phases)	[C-I-C]	[C-I-C]			
2	500kV V-string suspension insulator replacement with new 500kV composite suspension insulator	Supply, install & commission new V-string insulator (3 Phases)	[C-I-C]	[C-I-C]			
3	500kV I-string suspension insulator replacement with new 500kV composite suspension insulator	Supply, install & commission new single I-string insulator (3 Phases)	[C-I-C]	[C-I-C]	[C-I-C]		Installation costs have increased due to the crew size being revised from 6 to 8 personnel , based on recent [C-I-C] project data and validated by AMCL.
4	220kV strain insulator replacement with new 220kV composite strain insulator	Supply, install & commission new twin strain insulator (3 Phases)	[C-I-C]	[C-I-C]			
5	220kV I-string suspension insulator replacement with new	Supply, install & commission new single I string insulators (3 Phases)	[C-I-C]	[C-I-C]	[C-I-C]		Installation costs have increased due to the crew size being revised from 6 to 8 personnel , based on recent [C-

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
	220kV composite suspension insulator						I-C] project data and validated by AMCL.

Note: For 330kV & 275kV Insulator replacement, use 220kV unit rates.

3.6.7. Ground-wire Replacement

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Direct retrofit of existing ground-wire with like for like replacement metropolitan area.	Remove existing. Supply, install & commission.	[C-I-C]	[C-I-C]			
2	Direct replacement of existing ground-wire with OPGW/Grape replacement metropolitan area	Remove existing. Supply, install & commission.	[C-I-C]	[C-I-C]			
3	Critical crossing single span ground-wire replacement like for like.	Remove existing. Supply, install & commission new, includes cradle block.	[C-I-C]	[C-I-C]			
4	Towers Constructed before 1967 - Reinforcement-Entire Tower with Foundation per Tower rate					[C-I-C]	More detailed design studies since the Initial Proposal have revealed that tower strengthening is required for the proposed ground wire uprating program, based on design code requirements. This is further explained in Appendix 3E and has been validated by AMCL.
5	Towers Constructed before 1985 - Reinforcement-Entire Tower without Foundation per Tower rate					[C-I-C]	More detailed design studies since the Initial Proposal have revealed that tower strengthening is required for the proposed ground wire uprating

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
							program, based on design code requirements. This is further explained in Appendix 3E and has been validated by AMCL.
6	Towers Constructed after 1985 - Reinforcement only GW peak per Tower rate					[C-I-C]	More detailed design studies since the Initial Proposal have revealed that tower strengthening is required for the proposed ground wire uprating program, based on design code requirements. This is further explained in Appendix 3E and have been validated by AMCL.

3.6.8. Fall Arrest

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Rack System Fall Arrest	Supply & install new fall arrest per terminal station site.	[C-I-C]	[C-I-C]			
2	500 kV Tower System Fall Arrest.	Supply & install new fall arrest on single flat top delta type tower.	[C-I-C]	[C-I-C]			
3	330 kV Tower System Fall Arrest.	Supply & install new fall arrest on single flat top delta type tower.	[C-I-C]	[C-I-C]			

3.6.9. Low Spans

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
1	Raising conductors (Single Circuit, Single Bundle conductor)	Site preparation, De-clip & place conductors into running sheaves, replace suspension assembly with floating strain; Cut, retension (assumed 4-spans) and install mid-span joint; Re-clip, remove sheaves and replace conductors into clips; Site reinstatement.	[C-I-C]	[C-I-C]			
2	Raising conductors (Single Circuit, Double Bundle conductor)	Site preparation, De-clip & place conductors into running sheaves, replace suspension assembly with floating strain; Cut, retension (assumed 4-spans) and install mid-span joint; Re-clip, remove sheaves and replace conductors into clips; Site reinstatement.	[C-I-C]	[C-I-C]	[C-I-C]		Installation duration reduced from 2.5 days to 2.0 days in line with market feedback for the project TD-0014572. This has been validated by AMCL.
3	Raising conductors (Double Circuit, Single Bundle conductor)	Site preparation, De-clip & place conductors into running sheaves, replace suspension assembly with floating strain; Cut, retension (assumed 4-spans) and install mid-span joint; Re-clip, remove sheaves and replace conductors into clips; Site reinstatement.	[C-I-C]	[C-I-C]	[C-I-C]		Installation duration reduced from 4 days to 3 days in line with market feedback for the project TD-0014572. This has been validated by AMCL.
4	Raising conductors (Double Circuit, Double Bundle conductor)	Site preparation, De-clip & place conductors into running sheaves, replace suspension assembly with floating strain; Cut, retension (assumed 4-spans) and install mid-span joint; Re-clip, remove sheaves and replace conductors into clips; Site reinstatement.	[C-I-C]	[C-I-C]	[C-I-C]		Installation duration reduced from 5 days to 4 days in line with market feedback for the project TD-0014572. This has been validated by AMCL.
5	Raising conductors with strain pole; Replacing towers with poles					[C-I-C]	Work on Tranche 1 since the Initial Proposal has revealed that the floating strain / re-tension solution is not sufficient on the lower ground clearance

Item	Project Name	Scope of Work Summary	Unit rate – Initial Proposal	Unit rate – Initial proposal excl. risk allowance	Updated unit rate – Revised Proposal	New unit rate – Revised Proposal	Reason for updated / new unit rate
	(Single Circuit, Double Bundle conductor)						spans. We therefore add this cost-effective solution as a new unit rate in the Revised Proposal. This new unit rate has been validated by AMCL.
6	Raising conductors with suspension pole; Replacing towers with poles (Single Circuit, Double Bundle conductor)					[C-I-C]	Work on Tranche 1 since the Initial Proposal has revealed that the floating strain / re-tension solution is not sufficient on the lower ground clearance spans. We therefore add this cost-effective solution as a new unit rate in the Revised Proposal. This new unit rate has been validated by AMCL.

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