CITIPOWER

Reclassification of repairs

CP RRP BUS 9.07 - Reclassification of repairs - Dec2020 Public

Revised regulatory proposal 2021–2026

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1 Overview

Our original proposal reclassified 'minor repairs' from capital expenditure to operating expenditure. The draft determination did not accept the proposed reclassification of minor repairs due to lack of clarity of the costs being reclassified, lack of unitised data to demonstrate unit costs and lack of historical data.

Our revised proposal is to continue to seek to expense repair works where the works result from either asset faults or identified asset defects. Expensing these costs better reflects the nature of the work in that:

- the costs incurred are to repair a network asset, rather than refurbish or replace a network asset. The repair works do not extend the life of the asset and it is therefore more appropriate to expense such works
- the costs on average constitute up to 90 per cent labour costs and only 10 per cent materials, which is indicative of repair and maintenance work, rather than network asset replacement work. Repairs are typically made up of labour costs such as dispatch, ensuring the safety of the site, traffic management, excavation where necessary, investigating reasons for fault/defect, and only minor materials costs.

Repairs are more akin to maintenance, which is immediately expensed, rather than refurbishment or replacement of assets that are depreciated over a longer period. This is consistent with our approved cost allocation methodology.

For our revised proposal, we have conducted a more granular examination of each job completed over the past five years to better identify jobs that are more appropriately classified as repairs rather than asset replacements. Adopting a more granular approach has resulted in a 46 per cent reduction in our proposed reclassification compared to our original proposal.

To support our revised proposal, and in response to the draft determination, we have provided:

- clearer definitions of the costs being reclassified
- further clarification as to why these works should be expensed rather than capitalised
- historical unitised data to demonstrate volume of works and unit rates.

2 Background

2.1 Our original proposal

Our original proposal sought to reclassify 'minor repairs' from capital to operating expenditure. Typically, minor repairs include labour-intensive work that arise from an asset failure or identified defects that could result in an imminent asset failure (if not repaired).

Expensing minor repair costs better reflects the nature of the work—the costs are incurred to maintain the age of the asset and the work does not result in the creation of a new asset. These costs are more akin to maintenance and repair which is immediately expensed, rather than refurbishment or replacement of assets that are depreciated over a longer period.

We proposed to adjust our base year operating expenditure for the total cost of minor repairs estimated in 2019 and remove any forecast minor repairs from our replacement capital expenditure forecast. These changes are net present value (**NPV**) neutral, which means customers are no worse-off in the long term.

2.2 Draft determination

The AER did not accept our proposed reclassification of minor repairs based on the advice of its consultant EMCa. EMCa found:

- our minor repairs definition was circular without a clear definition of minor repairs
- the annual minor repairs expenditure claimed to be incurred in 2019 was not consistent with either the historical information in the recast regulatory information notices (RIN) or aggregated unitised project cost information
- the historical information in the recast RIN showed substantial year to year variance in works proposed as minor repairs and some annual line item costs may be estimated rather than actuals
- using the 2019 unitised project costs (totalling $1.9 million), 46 out of 55 projects were above $10,000 and have an average unit cost of $41,735. EMCa did not support this as a 'minor' repair.

3 Revised proposal

3.1 Summary of our revised proposal

Our revised proposal is to expense *repairs* resulting from either asset faults or identified asset defects. Treating these costs as operating expenditure better reflects the nature of the work:

- the costs incurred are to *repair* a *network* asset, rather than refurbish or replace a network asset. The repair works typically do not extend the life of the asset, or create a new network asset, and it is therefore appropriate to expense those works. While costs may include replacements of some parts (e.g. a cable termination), this is usually only a part of a network asset (e.g. an underground cable) without which the asset cannot work, but the replacement of the part does not prolong the life of the network asset[1]
- the costs are on average made up of around 90 per cent labour costs and 10 per cent materials, which is indicative of repair and maintenance work, rather than a network asset replacement. Repairs are typically made up of labour costs such as dispatch, ensuring the safety of the site, traffic management, excavation where necessary, investigating reasons for fault/defect, and only minor materials costs. Labour costs are also higher for repair works because of the disaggregated nature of the work and inability to synergise costs in the same manner as with planned project work. Material costs are lower as they do not include permanent network asset replacement. As such, repairs differ in the scope of works and cost breakdowns from 'project' work, or planned replacement works, which are capitalised.

Repairs are more akin to asset maintenance, which is immediately expensed, rather than refurbishment or replacement of assets that are depreciated over a longer period. This is in line with our approved cost allocation methodology that stipules costs that are not capitalised for regulatory purposes include:

- assets that don't provide future economic benefit for longer than 12 months
- indirect (corporate) overheads
- minor repairs resulting from asset failure and identified defects that could result in an imminent asset failure (if not repaired)
- asset inspection costs
- pole treatment costs
- components of a solution that are cloud based, and paid for on a 'pay as you go' basis
- training
- lease costs.

3.1.1 Definition of the works and scope of works

The draft determination found our definition of repair works circular and unclear. In its report to the AER, EMCa states:[2]

> *If a 'repair' resulting from an asset failure was that the asset was replaced, then this would be replacement capital expenditure, not opex. If the repair resulted from a component failure that may (if not repaired) lead to failure of the asset (and assuming that the asset was repaired and not replaced), then this could potentially form the basis for an auditable*

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1 Network assets are typically defined as per the regulatory information notice (RIN) template '2.2 Repex.'

2 EMCa, CitiPower, Review of Aspects of Proposed Expenditure, Regulatory Submission for period 2021/22 to 2025/26, p. 198

definition of an opex minor repair. However, importantly, this is not how CitiPower has defined what it proposes as minor repairs in its Cost Allocation Methodology.

To clarify, we are only proposing to reclassify repair expenditure that includes a scope of works where a network asset is repaired—whether as a result of a fault or a defect—not permanently replaced. These repair works would not lead to an extension of the life of the asset, or a new permanent asset being installed. There may be some parts of the asset replaced during the repair, such as a cable termination, or there may be a temporary asset installed as part of the fault repair, however we are not proposing to reclassify any works where the works include a permanent refurbishment or permanent replacement of a network asset.

To provide further confidence of the type of works involved in these repairs, we have provided a more detailed scope of works in the table below. As the descriptions show, only a very small part of the works is related to installation of a supporting part of a network asset.

Table 1 Description of repair works proposed to be reclassified as operating expenditure

Repair category	Description of tasks and works
Faults	
Conductor faults	• Locate site of conductor fault • De-energise line at fault location (if working under shutdown) • Ensure access to asset, including traffic management where necessary • Assess conductor for damage, and if intervention is required • If intervention required and possible, repair section of damaged conductor • Clean, grease and remake cable • Test and confirm cable ready for energisation • Make site safe • Re-energise line • Dispose of waste materials
Underground cable faults	• Locate site of cable fault • De-energise line and underground cable at fault location (if working under shutdown) • Excavate site to gain access, including potential soil test and traffic management • Assess cable for damage, and if intervention is required • If intervention required and possible, repair section of damaged conductor • Test and confirm cable ready for energisation • Reinstate excavation site • Make site safe • Re-energise line • Dispose of waste materials
All other faults (Includes faults of all other assets, including pole and pole top, distribution transformers and switchgear, service lines and all other faults	• Confirm site of fault • De-energise line at pole/pole top fault location (if working under shutdown) • Ensure access to site/asset, including traffic management where necessary • Assess site for damage, and if intervention is required • If intervention required and possible, repair section of damaged asset • Make site safe • Re-energise line • Dispose of waste materials

Repair category	Description of tasks and works
Defects	
Cable termination works – cabus boxes	• De-energise line and underground cable section • Disconnect and remove cabus box connection (may require civil works to join cable section) • Install modern cable termination, perform electrical commissioning tests on cable section then reconnect to overhead line • Re-energise line and underground cable section • Dispose of removed cabus box termination and cable sections (if required)
66kV cable screen bonding link box works	• De-energise underground cable section • Excavate roadway to gain access to link box (may require extensive excavation to joint bay if access is required to cross bonding cables and the cross bonding link), including potential soil test and traffic management • Disconnect bonding leads and remove link box • Install new link box and reconnect cross bonding leads • Perform electrical commissioning tests • Re-energise underground cable section • Dispose of removed pit and cable sections if required
Minimum cable depth restoration	• De-energise underground cable section • Excavate roadway to gain access to cable, including potential soil test and traffic management • Cut existing cable and install cable joint to new cable section installed a correct depth • Abandoned cable may be left in ground or removed • Perform electrical commissioning tests on new cable • Re-energise underground cable section • Dispose of removed cable section/s if required
Transformer cooling systems – pipe work, filtration maintenance	• Redirect transformer water cooling if possible or de-energise transformer • Drain cooling water from system • Remove defective pipe work, valves or filtration system components • Install new pipe work, valves or filtration system components • Refill system with water, bleed air from system and recommission cooling circuit • Re-energise transformer if required • Dispose of removed components
Zone substation switchyard lighting refurbishment	• De-energise and isolate lighting circuit • Remove existing light or lighting structure • Install new light or lighting structure (may require new concrete foundation if inadequate or new LV wiring if in poor condition) • Performance electrical testing on lighting circuit and recommission • Re-energise circuit • Dispose of removed components
Transformer oil regeneration	• Connect oil regeneration plant to transformer, install generation unit or isolating transformer to power oil regeneration plant (a small transformer outage may be required) • Install warning barriers at substation • Commission oil regeneration plant (additional transformer oil may be required) • Disconnect oil regeneration plant from transformer, remove generation unit or isolating transformer from oil regeneration plant (a small transformer outage may be required due to limits of approach) • Remove warning barriers at substation • Some oil may be disposed

Source: CitiPower

3.1.2 Our historical repairs data

The draft determination found our annual minor repairs expenditure in 2019 to not be consistent with our historical information in the recast regulatory information notices (RIN) or our aggregated unitised project cost information. The draft determination also claimed our historical information in the recast RIN showed substantial year on year variance in works proposed as minor repairs and that some annual line item costs may be estimated rather than actuals.

To clarify, our 2019 minor repairs costs in our original proposal were estimates of 2019 calendar year costs. As such, the value differed from the later submitted recast RIN data, which included 2019 actuals (and we had subsequently provided 2019 actuals in information request (**IR**) 32).

For our revised proposal, we have conducted a more granular examination of each job we have completed over the past five years. This has enabled us to better identify jobs that capture repairs rather than asset replacement. This included examining types of work involved in each work order and the cost of labour and materials in those orders. Through this assessment, we have updated the historical expenditure per type, as per the table below. All the updated data is actual historical data. There are no estimates.

Table 2 **Historical repairs expenditure, $000, nominal**

	2015	2016	2017	2018	2019
Conductor faults	73.2	39.2	71.4	72.7	40.4
Underground cable faults	207.0	145.7	98.7	187.5	132.2
Pole and pole top faults	18.8	88.2	95.0	76.1	82.9
Transformer and switchgear faults	55.6	42.3	60.4	52.0	57.1
Service faults	224.4	196.5	163.3	25.7	11.8
Other faults	3.5	11.9	14.8	17.9	71.7
Cable termination works – cabus boxes	1,092.4	244.8	248.1	425.6	192.7
66kV cable screen bonding link box works	0.6	0	0	125.6	428.8
Minimum cable depth restoration	0	0	1,812.8	576.6	204.8
Transformer cooling systems – pipe work, filtration maintenance	1,267.0	40.5	178.1	159.8	0.3
Zone substation switchyard lighting refurbishment	158.6	12.4	14.8	0	0
Transformer oil regeneration	40.9	0	55.8	0	196.0
Total	**3,141.9**	**821.4**	**2,813.1**	**1,719.5**	**1,418.8**

Source: CitiPower

In the time given for IR032, we were unable to provide a full breakdown of the historical jobs and unit costs to be reclassified. Since then, we have implemented an improved methodology to examine thousands of expenditure orders over the past five years, to establish:

- the scope of works included in each completed job
- the breakdown of expenditure between labour and materials
- and the appropriateness of treating that work as minor repairs.

Table 3 and table 4 also summarise the number of jobs and unit costs of the identified repairs works over the five years.

Table 3 Volume of repairs per repair type

	2015	2016	2017	2018	2019
Conductor faults	33	20	28	29	22
Underground cable faults	25	21	7	18	15
Pole and pole top faults	6	27	27	23	23
Transformer and switchgear faults	12	23	28	23	31
Service faults	134	127	100	14	4
Other faults	2	6	6	5	10
Cable termination works – cabus boxes	16	9	8	7	5
66kV cable screen bonding link box works	1	0	0	2	2
Minimum cable depth restoration	0	0	6	3	4
Transformer cooling systems – pipe work, filtration maintenance	4	1	2	3	1
Zone substation switchyard lighting refurbishment	2	1	1	0	0
Transformer oil regeneration	1	0	1	0	1

Source: CitiPower

Table 4 Unit cost of repairs per repair type, $000, nominal

	2015	2016	2017	2018	2019
Conductor faults	2.0	2.0	2.6	2.5	1.8
Underground cable faults	8.2	6.9	14.1	10.4	8.8
Pole and pole top faults	3.3	3.3	3.5	3.3	3.6
Transformer and switchgear faults	4.6	1.8	2.2	2.3	1.8
Service faults	1.6	1.6	1.6	1.8	2.9
Other faults	2.0	2.0	2.5	3.6	7.2
Cable termination works – cabus boxes	68.3	27.2	31.0	60.8	38.5
66kV cable screen bonding link box works	0.6			62.8	214.4
Minimum cable depth restoration			302.1	192.2	51.2
Transformer cooling systems – pipe work, filtration maintenance	316.7	40.5	89.1	53.3	0.3
Zone substation switchyard lighting refurbishment	79.3	12.4	14.8		
Transformer oil regeneration	40.9		55.8		196.0

Source: CitiPower

3.1.3 Unit rates

Our analysis shows the average unit rate for a repair job is around $2,900 for fault jobs while the average unit cost of repairs resulting from defects are higher. Of the 1,100 repair jobs analysed, around 9% have an average unit rate of more than $10,000.

While most repairs are minor, there can still be repairs that are more costly, but as they do not extend the life of the network asset, they should be expensed (rather than capitalised). Jobs can become more expensive if they involve:

- soil tests (usually around $5,000 per test)
- a larger number of field workers on site due to the complexity of the job.

Because CitiPower has among the highest shares of underground cables in the country, our repair average unit costs of repairs are higher than for the average network. For example, if there is a defect on a high voltage (66kV) underground cable in the central business district (CBD), the cost of the repair is expected to be significantly higher than the average repair due to:

- the need for a soil test and at least two testers
- around 10 field workers on site to ensure the safety of the operation. That includes:

- 3-4 civil workers
- 2 cable jointers
- 3 traffic managers
- 2 safety observers.

Equally, there may be larger works taking place at a site where there are multiple non-network assets that may require repair. For example, zone substation lighting replacements will take place at once, and involve a number of technicians at a site, which results in larger unit rate.

As such, we do not consider it appropriate to use a unit rate threshold to determine what repairs should be expensed. Rather, the description of the works, whether the works extend the life of the asset and the extent to which the costs are labour rather than materials should be the determining factors.

3.2 Revised proposal forecasts

The table below summarises our forecast operating expenditure base adjustment. The adjustment is based on the 2015-2019 historical average, as provided in CP RRP MOD 10.06.

Table 5: Revised proposal costs, $million 2021

	2021/22	2022/23	2023/24	2024/25	2025/26
Proposed costs	3.14	0.82	2.81	1.72	1.42

Source: CitiPower

3.2.1 Adjustment for replacement expenditure

We have removed the value of the expenditure being reclassified from our replacement expenditure proposal.