DRAFT DECISION

CitiPower
Distribution Determination
2021 to 2026

Attachment 16
Alternative control services

September 2020

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on the distribution determination that will apply to CitiPower for the 2021–26 regulatory control period. It should be read with all other parts of the draft decision.

The draft decision includes the following attachments:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Efficiency benefit sharing scheme

Attachment 9 – Capital expenditure sharing scheme

Attachment 10 – Service target performance incentive scheme

Attachment 11 – Demand management incentive scheme and demand management innovation allowance mechanism

Attachment 12 – Not applicable to this distributor

Attachment 13 – Classification of services

Attachment 14 – Control mechanisms

Attachment 15 – Pass through events

Attachment 16 – Alternative control services

Attachment 17 – Negotiated services framework and criteria

Attachment 18 – Connection policy

Attachment 19 – Tariff structure statement

Attachment A – Victorian f-factor incentive scheme

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16 Alternative control services

This attachment sets out our draft decision on prices, or revenues, CitiPower is allowed to charge, or recover from, customers for the provision alternative control services: ancillary network services, public lighting services and metering services.

Alternative control services (ACS) are customer specific or customer requested services and so the full cost of the service is attributed to that particular customer, or group of customers, benefiting from the service. We set service specific prices or revenues to provide a reasonable opportunity to the distributor to recover the efficient cost of each service from customers using that service.

For more information on the classification of services and the form of control applied to each of the above services (e.g. revenue or price cap), see Attachment 13 − Classification of services, Attachment 14 − Control mechanisms and/or our final Framework and Approach (F&A) paper for the Victorian distributors.[1]

16.1 Ancillary network services

Ancillary network services share the common characteristic of being non-routine services provided to individual customers as requested. Our F&A paper outlines several types of services that can be considered as meeting this broad definition.[2] For ease of reference, 'ancillary network services' in this attachment is to be taken to refer to the following service groupings, unless further explanation is provided:[3]

- Auxiliary metering services
- Basic connection services
- Connection application and management services
- Network ancillary services.

Ancillary network services are either charged on a fee or quotation basis, depending on the nature of the service.

We generally determine fee-based service price caps for the next regulatory control period as part of our determination, based on the cost inputs and the average time taken to perform each service. These services tend to be homogenous in nature and scope, and can be costed in advance of supply with reasonable certainty.
By comparison, prices for quoted services are based on the quantities of labour and

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1 AER, *Final framework and approach: AusNet Services, CitiPower, Jemena, Powercor and United Energy: Regulatory control period commencing 1 January 2021*, January 2019.

2 AER, *Final framework and approach: AusNet Services, CitiPower, Jemena, Powercor and United Energy: Regulatory control period commencing 1 January 2021*, January 2019, pp. 29–34 and 100–104.

3 AER, *Final framework and approach: AusNet Services, CitiPower, Jemena, Powercor and United Energy: Regulatory control period commencing 1 January 2021*, January 2019, pp. 29–34 and 105–110.

materials required, with the quantities dependent on a particular task. Prices for quoted services are determined at the time of a customer's enquiry and reflect the individual requirements of the customer's service request. For this reason, it is not possible to list prices for quoted services in our decision. However, our draft decision sets labour rates to be applied to ancillary network services provided on a quotation basis.

16.1.1 Draft decision

Form of control – Ancillary network services

Our draft decision is to maintain our final F&A position to apply price caps to ancillary network services as the form of control. Under a price cap form of control, for fee-based services we set a schedule of prices for the first year of the regulatory control period, 2021–22. For the subsequent years of the regulatory control period, the prices for ancillary network services charged on a fee basis are determined by adjusting the previous year's prices by the formula set out in section 14.5.2 of Attachment 14 – Control mechanisms.

For services offered on a quoted basis, we set a schedule of labour rates for the first year of the regulatory control period, 2021–22. For the subsequent years of the regulatory control period, these labour rates are adjusted as set out in section 14.5.2 of attachment 14. The price caps for these services are determined by applying the approved labour rates and the formula set out in section 14.5.2 of attachment 14.

The annual adjustment of fee-based charges or quoted service labour rates requires the specification of an 'X-factor' (see section 14.5.2 of attachment 14 for details). Consistent with our previous decisions, we have applied a labour escalator as the X-factor for ancillary network services.

We have substituted our labour escalator for CitiPower's proposed labour forecasts. For more detail on the reasons for this decision, see the discussion in section 6.4.4 of Attachment 6 – Operating expenditure. Our draft decision X-factors for ancillary network services are set out in Appendix A.

Fee-based and quoted services

Our draft decision is to reject CitiPower's proposed business hours charges for ancillary network services provided on a fee basis and the labour rates for quoted services. In particular, we consider the labour rates that underpin CitiPower's ancillary network services are above the upper ranges that an efficient distributor in Victoria would incur. We also made additional adjustments to the proposed prices of certain services, where required.

Regarding after-hours rates, our draft decision is to generally accept CitiPower's proposed charges for ancillary network services provided on a fee basis and the labour rates for quoted services. The exception is the proposed after-hours charge for "Manual re-energisation (incl customer transfer)", which we have removed following consultation with CitiPower (see section 16.1.4.4).

Our draft decision on prices for fee-based services for the 2021–22 regulatory year is listed in Appendix A. Note that prices in Appendix A are in $2020–21. We will incorporate updated inflation figures in our final decision to derive 2021–22 prices in nominal terms.

Table 16.1 sets out our draft decision maximum labour rates (which include on-costs and overheads) that CitiPower should apply in calculating charges for quoted services during business hours. Appendix A also includes our draft decision on CitiPower's after-hours labour rates for quoted services.

Table 16.1 AER draft decision - 2021–22 hourly labour rates (incl. on-costs and overheads, $2020–21) - ordinary hours

	CitiPower proposed total hourly rate	AER draft decision maximum total hourly rate[1]
Administration	115.08	92.73
Field worker	189.27	171.75
Technical	204.88	171.75
Engineer	182.70	150.69
Senior engineer	277.28	197.05

Note: 1. These are equal to Marsden Jacob's recommended maximum total hourly rate (see Table 16.2) escalated by our draft decision forecast labour price growth for 2021–22 (see the discussion in section 6.4.4 of attachment 6 – operating expenditure).

Source: Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, p. 10; CitiPower, *Alternative control services charges: CP APP09 - ACS charges - Jan2020 - Public: Regulatory proposal 2021–26*, January 2020, p. 6; CitiPower, *Model 12.02 - Quoted Services Labour Rate*, January 2020.

Our maximum rate for a Field Worker and Technical Specialist ($171.75, $2020–21) includes a $20 per hour allowance for a vehicle. Hence, vehicle costs should not be included in a rate calculation for quoted services involving these labour categories.

We used the maximum labour rates in Table 16.1 as the basis for reducing all of CitiPower's proposed prices for fee-based services by 8.3 per cent. Section 16.1.4.1 discusses our method and reasons for this downward adjustment.

We consider our method for adjusting CitiPower's prices is appropriate given the top-down pricing model CitiPower provided in its proposal (see section 16.1.4.1). We acknowledge the broad-based nature of our adjustment method. If CitiPower and/or other stakeholders propose alternative methods that they consider better incorporate our decision on maximum labour rates into fee-based prices we will consider these in our final decision.

In addition, we require CitiPower to include the following in its revised proposal:

- Explicitly state the conditions in which CitiPower will apply the "Failed field visit" charge (see section 16.1.4.2).

- Include a new "Failed field visit" charge for lower cost services, the price of which will equal the charge for the "Special meter read" service (see section 0).
- Include a proposed service relating to the testing of additional meters, which is below the price of the "Meter accuracy test" service—or otherwise make explicit that customers do not incur the "Meter accuracy test" fee again for additional meters tested (see section 16.1.4.3).
- Remove the "Manual re-energisation (incl customer transfer)" as an after-hours service (as proposed by CitiPower—see section 16.1.4.4)
- Clarify when a request for the "Access to meter data" service would incur a quoted service charge, and when it would not (see section 16.1.4.6).

16.1.2 CitiPower's proposal

CitiPower proposed to continue offering many of its fee-based services from the 2016–20 regulatory control period into the 2021–26 regulatory control period.[4] CitiPower proposed to derive year 1 prices (2021–22) by escalating its proposed prices for the 1 January 2021–30 June 2021 six-month extension period by consumer price index (CPI) and an X-factor. CitiPower similarly derived its proposed prices for the 1 January 2021–30 June 2021 extension period by escalating prices for the 2020 regulatory year by CPI and an X-factor.[5] CitiPower provided a top-down model to demonstrate this approach.[6]

CitiPower proposed four new fee-based services that were previously labelled as "Service truck visits". To ensure cost-reflectivity and simplicity, CitiPower adopted an approach of classifying the service according to the length of the task: [7]

- isolation of supply or reconnection, excluding high voltage (HV) (usually less than 30 minutes)
- isolation of supply and reconnection after isolation, excluding HV (same day)
- standard alteration (usually between 30 and 60 minutes)
- complex alteration (usually longer than 60 minutes).

CitiPower stated it proposed to continue providing benefits to its smart meter customers by abolishing remote re-energisation and remote de-energisation fees and providing these services free of charge in the 2021–26 regulatory control period. This is in addition to services it already provides free of charge such as non-complex abolishment, and desktop and site assessments for No Go Zones. CitiPower also

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4 CitiPower, *Regulatory proposal 2021–26*, January 2020, p. 143.

5 CitiPower, *Regulatory proposal 2021–26*, January 2020, pp. 141–144; CitiPower, *Alternative control services charges: CP APP09 - ACS charges - Jan2020 - Public: Regulatory proposal 2021–26*, January 2020, pp. 4–5; CitiPower, *Price control formula: CP APP08 - Price control formula - Jan2020 - Public: Regulatory proposal 2021–26*, January 2020 p. 7.

6 CitiPower, *Model 12.01 - Fee Based*, 31 January 2020.

7 CitiPower, *Regulatory proposal 2021–26*, January 2020, p. 141.

proposed to abolish the fixed-fee charge for the "Access to meter data" service and proposed to create a quoted charge for meter and network data access for cumbersome requests only.[8]

CitiPower proposed five labour types for quoted services to reflect the varying types of labour requirements across quoted service jobs (see Table 16.1). By comparison, CitiPower proposed only two labour types in the 2016–20 regulatory control period (support staff and skilled electrical worker).[9]

For years 2 to 5 of the 2021–26 regulatory control period, CitiPower proposed to escalate prices for fee-based services and the labour component of quoted services by CPI and an X-factor as determined by the AER in our final determination.[10]

16.1.3 Assessment approach

The price cap control mechanism that we apply to assess the efficient costs of alternative control services may use elements of the building block model for standard control services, but there is no requirement to apply the building block model exactly as prescribed in Part C of the National Electricity Rules (NER).[11] Full details of our draft decision on the form of control mechanism and control mechanism formulae are set out in attachment 14 of this draft decision.

Our approach involves an assessment of the main costs of providing ancillary network services. Labour costs are the major input in the cost build-up of prices for ancillary network services. Therefore, our assessment focusses on comparing CitiPower's proposed labour rates against maximum total labour rates, which we consider efficient.

Where CitiPower's proposed labour rates exceed our maximum efficient labour rates, we apply our maximum efficient labour rates to determine prices. We follow this assessment process for services provided on a fee or quotation basis. As we discuss in section 16.1.4.1, we consider CitiPower's proposed labour rates are the same for both sets of ancillary network services.

We also considered relevant stakeholder feedback raised throughout the consultation process and benchmarked CitiPower's proposed ancillary network services prices against its prices for the 2016–20 regulatory control period and the prices of other distributors, where relevant. We made further adjustments to CitiPower's ancillary network services prices where we considered it appropriate to do so.

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8 CitiPower, *Regulatory proposal 2021–26*, January 2020, p. 142.

9 CitiPower, *MOD 1.1 - CP ACS Model*, April 2015, 'Inputs'!; AER, *Final decision: CitiPower distribution determination 2016 to 2020: Attachment 16 – Alternative control services*, May 2016, p. 38.

10 CitiPower, *CP APP08 - Price control formula Jan2020 - Public*, January 2020, pp. 7–8.

11 NER, cl. 6.2.6(c).

16.1.4 Reasons for draft decision

Section 16.1.4.1 discusses the maximum labour rates we consider are appropriate for distributors in Victoria. It also sets out how we adjusted CitiPower's ancillary network services prices for this draft decision, having regard to these maximum labour rates.

Sections 16.1.4.20 to 16.1.4.6 set out our consideration of specific aspects of CitiPower's proposed ancillary network services and the associated charges.

16.1.4.1 Proposed labour rates and benchmarking

For ancillary network services we typically review the key inputs in determining the price for the service. We focus particularly on labour rates as these are the principal input for ancillary network services. In considering labour rates we had regard to maximum reasonable benchmark labour rates developed by our consultant, Marsden Jacob, which we consider are efficient. Where necessary we have adjusted CitiPower's proposed charges for ancillary network services to reflect the outcome of our assessment of efficient labour rates. As noted below, given the nature of CitiPower's top-down model, any adjustments to fee-based service charges have been applied as an aggregate adjustment.

Marsden Jacob also benchmarked CitiPower's proposed prices for its most commonly performed services against the prices of other distributors.

We summarise Marsden Jacob's report in the next section.

Marsden Jacob report

We engaged Marsden Jacob to provide advice in relation to estimates of reasonable maximum total labour rates for the Victorian distributors' 2021–26 proposed ancillary network services, and to benchmark certain ancillary network services provided on a fee basis. This is an extension of Marsden Jacob's previous reports for the AER in relation to distribution determinations for other distributors in the National Electricity Market (NEM). Marsden Jacob had regard to the methodology in those reports in undertaking this new report.[12]

Marsden Jacob observed that, although distributors use different labour category names and descriptions, the types of labour used to deliver ancillary network services broadly fall into five categories: administration; technical services; engineers; field workers; and senior engineers.[13]

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[12] For recent examples, see: Marsden Jacob, *Review of Alternative Control Services: SA Power Networks, Ergon Energy and Energex: Advice to Australian Energy Regulator*, June 2019; Marsden Jacob, *Review of Alternative Control Services: SA Power Networks, Ergon Energy and Energex: Addendum: Advice to Australian Energy Regulator*, August 2019.

[13] Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, p. 6.

Using these categories, Marsden Jacob developed benchmark labour rates for each distributor based on Hays 2019–20 Energy sector and office support salary data.[14]

In assessing the reasonableness of proposed labour rates, Marsden Jacob 'normalised' the rates provided by each distributor and separated them as:[15]

1. Raw labour – based on the Hays salary data using Melbourne rates.
2. On-costs – to cover basic leave entitlements and standard on-costs including superannuation, workers compensation and payroll tax.
3. Overheads – to cover all additional costs. Overall, Marsden Jacob recommended a maximum overhead rate of 61 per cent. Marsden Jacob also accepted the inclusion of an explicit profit margin, however where identified this allocation was benchmarked within the overall overhead allowance.

In aggregate, these elements are referred to as the 'total labour rate', which is expressed as an hourly rate. Table 16.2 includes Marsden Jacob's recommended maximum total ordinary time hourly labour rates.

Table 16.2 Marsden Jacob recommendation - 2020–21 hourly labour rates (incl. on-costs and overheads, $2020–21) - ordinary hours

	Marsden Jacob recommended maximum total labour rate[1]
Administration	92.51
Field worker	171.34
Technical	171.34
Engineer	150.33
Senior engineer	196.58

Notes: 1. Marsden Jacob derived maximum recommended labour rates for the 2020–21 year (the year prior to the first year of the 2021–26 regulatory control period). Marsden Jacob therefore examined the labour rates the Victorian distributors proposed for 2020–21.

Source: Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, p. 5 and 10.

Based on its review, Marsden Jacob recommended maximum reasonable benchmark labour rates. The maximum hourly labour rates include the highest of the Hays salary rates for each labour category. Marsden Jacob noted that while these are reasonable maximum rates, more efficient rates may be gained by reference to a different point in the Hays salary bands. For future determinations, Marsden Jacob recommended the

[14] Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, p. 6.

[15] Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, pp. 6–9.

AER consider reducing the maximum labour rates to reflect efficiency frontier benchmarks rather than the highest of the Hays rates for each labour category.[16] We note Marsden Jacob's recommendation in the context of future determinations. For the purposes of this draft decision, we consider the maximum reasonable rates recommended by Marsden Jacob are efficient.

Marsden Jacob also recommended that after hours rates be capped at 1.75 times the relevant ordinary hours rate.

Marsden Jacob also reviewed the proposed charges for a number of ancillary network services. Where practicable, Marsden Jacob compared each Victorian distributor's charges with like services of other distributors (in Victoria as well as other jurisdictions).[17] In contrast to previous reviews, Marsden Jacob did not recommend specific price levels for individual services as a result of this review. Marsden Jacob stated much of the costing is opaque for the Victorian distributors, except Jemena. Hence, Marsden Jacob instead proposed that the AER seek further information on charges for specific services.[18]

Marsden Jacob recommendations and application

Marsden Jacob recommended we lower CitiPower's labour rates for business hours to equal its maximum total labour rates, as set out in Table 16.2. This is the basis of our draft decision for the labour rates underpinning quoted services as summarised in Table 16.1.

On the other hand, Marsden Jacob noted CitiPower did not explicitly use its proposed labour rates to generate the prices for fee-based services.[19] We similarly noted in section 16.1.2 that CitiPower provided a top-down model for deriving its proposed fee-based prices for the 2021–26 regulatory control period. We therefore cannot simply replace CitiPower's labour rates with our draft decision labour rates in the pricing model to derive draft decision prices for fee-based services.

Further, we note CitiPower proposed to continue offering many of its fee-based services from the 2016–20 regulatory control period into the 2021–26 regulatory control period.[20] For these services, CitiPower's top-down model simply escalates prices from the 2016–20 regulatory control period using CPI and the X-factor.

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16 Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, pp. 4–5 and 13.

17 Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, p. 14.

18 Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, p. 20.

19 Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, p. 5.

20 CitiPower, *Regulatory proposal 2021–26*, January 2020, p. 143.

We do not consider that a simple escalation of fee-based prices approved as efficient in the previous regulatory control period necessarily represents efficient charges for the new period. Economic conditions (among other factors) can change substantially between regulatory control periods. Such changes can affect labour costs and other inputs, which ultimately affect fee-based prices.

Origin Energy stated it appears the distributors are proposing significant increases in labour costs between regulatory control periods. Origin Energy noted Powercor and CitiPower proposed increases in "administration" labour rates of over 50 per cent and significant increases in "field worker" labour rates.[21]

Our analysis suggests CitiPower's proposed labour rates underpinning quoted services are indeed significantly higher for the 2021–26 regulatory control period. Table 16.3 shows the proposed rate for the "Administration" labour category is 50 per cent higher than the 2020 rate for "Support staff", while the proposed rate for the "Field worker" labour category is approximately 39 per cent higher than the 2020 rate for "Skilled electrical worker".

Table 16.3 Labour rates across the regulatory control periods - business hours unless otherwise indicated

	Approved 2020 rates ($2020–21)[1]	Proposed 2021–22 rates ($2020–21)	Percentage change
Administration[2]	$76.90[2]	115.08	50
Field worker[3]	$135.97[3]	189.27	39
Field worker[3] (after hours)	$159.68[3]	223.60	40

Notes: 1. We escalated the approved 2020 rates (nominal) with a 6-month inflation forecast, consistent with CitiPower's quoted services model.
2. We understand the proposed "Administration" labour category broadly corresponds with the "Support staff" category from the 2016–20 regulatory control period. CitiPower did not propose an after-hours fee for the "Administration" labour category.
3. We understand the proposed "Field worker" labour category broadly corresponds with the "Skilled electrical worker" category from the 2016–20 regulatory control period.

Source: CitiPower, *2020 pricing proposal*, November 2019, p. 46; CitiPower, *Model 12.02 - Quoted Services Labour Rate*, 31 January 2020.

Once we adjust CitiPower's proposed labour rates to reflect Marsden Jacob's recommended maximum labour rates, the difference falls to 21 per cent and 26 per cent, respectively. The inter-period change for the after-hours rate for Field workers remains at 40 per cent (see section 16.1.4.4).

[21] Origin Energy, *RE: Submission to Victorian electricity distributor's regulatory proposals*, 3 June 2020, p. 8.

Origin Energy also noted the substantial variance in “field worker” labour rates between distributors, pointing to Powercor and Jemena. Origin requested further clarification on this variance.[22] As indicated in Marsden Jacob's report, there will naturally be variation in the rates for the various labour categories.[23] Hence, we consider it is reasonable there will be some variation between the Victorian distributors' proposed labour rates.

However, we agree with Origin Energy that the variance in the labour rates may be "substantial" in some cases. We consider Jemena's proposed rate for the "Field worker" labour category is reasonable as it is lower than Marsden Jacob's recommended maximum rate.[24] Regarding CitiPower, our draft decision is to reduce its proposed labour rates to equal Marsden Jacob's recommended maximum rates as discussed above. This has reduced the variance between CitiPower's and Jemena's business-hours rate for "Field worker" from 22 per cent to 11 per cent.

As we discussed earlier, we will explore Marsden Jacob's suggestion of using efficient—rather than maximum—labour rates in future distribution determinations. This could lower the variation in labour rates in future regulatory control periods.

CitiPower used a top-down model to derive its proposed prices for the 2021–26 regulatory control period. Hence it is unclear whether CitiPower's proposed labour rates for quoted services are a direct input into its proposed prices for fee-based services. In the absence of evidence to the contrary, we would assume this to be the case.

Firstly, we understand CitiPower would draw from the same labour pool to provide both fee-based and quoted services. In particular, we understand the "Administration" and "Field worker" categories would be common for CitiPower's fee-based and quoted services. We therefore understand the rates in Table 16.1 for the "Administration" and "Field worker" categories would comprise the primary costs of fee-based services in the 2021–26 regulatory control period (see below).

Second, CitiPower's top-down model for the 2021–26 regulatory control period simply escalated prices from the previous regulatory control period by CPI and an X-factor. In turn, CitiPower derived fee-based prices from the previous period using a bottom-up model that used CitiPower's labour rates for quoted services as direct inputs.[25]

We therefore used information from CitiPower's fee-based services model from the 2016–20 regulatory control period to ascertain the contribution of different labour types to the provision of fee-based services.

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22 Origin Energy, *RE: Submission to Victorian electricity distributor’s regulatory proposals*, 3 June 2020, p. 8.

23 Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, p. 7.

24 AER, *Draft decision: Jemena Distribution Determination 2021 to 2026: Attachment 16: Alternative control services*, September 2020.

25 CitiPower, *MOD 1.1 - CP ACS Model*, April 2015, 'Inputs'!M81:M83; AER, *Preliminary decision: CitiPower distribution determination 2016 to 2020: Attachment 16 – Alternative control services*, October 2015, p. 47; CitiPower, *Other ACS: MOD 1.1 - CP ACS Model*, January 2016, 'Inputs'!.

CitiPower appeared to use two types of labour for most of its fee-based services in the 2016–20 regulatory control period (Administrative Officer and Field Worker). Further, these labour types tended to contribute approximately 15 per cent (Administrative Officer) and 85 per cent (Field Worker) to the final price for fee-based services.[26]

For business-hours prices, we adjusted CitiPower's prices for fee-based services using a weighted average of the difference between CitiPower's and Marsden Jacob's total labour rates for Administrative Officer and Field Officer. As set out in Table 16.4, this results in a "preliminary adjustment factor" of –9.2 per cent. We further calibrated the preliminary adjustment factor to reflect that labour costs contributed approximately 90 per cent of the costs of CitiPower's fee-based services on average.

Our draft decision is therefore to reduce CitiPower's business-hours prices for fee-based services by 8.3 per cent. As we discuss in section 16.1.4.4, we have not adjusted CitiPower's after-hours prices in this draft decision.

Table 16.4 Draft decision adjustment to CitiPower's fee-based prices for business hours

	CitiPower hourly rate[1]	Marsden Jacob hourly rate[1]	Difference (per cent)	Weight (per cent)	Adjustment (per cent)
Administrative officer	112.82	92.51	–18	15	–2.7
Field officer	185.55	171.34	–7.66	85	–6.5
Preliminary adjustment factor					**–9.2**
Labour composition					**90**
Fee-based price adjustment					**–8.3**

Note: 1. These are 2020–21 prices ($2020–21).
Numbers may not add up due to rounding.
Source: AER analysis.

We acknowledge that different services would differ in the exact breakdown of labour types (as well as the contribution of materials to total costs for some services). It is also possible these cost compositions have shifted during the 2016–20 regulatory control period. This may be due to factors such as:

- increased efficiencies in administrative tasks due to IT investments and training
- increased efficiencies in technical and/or field-based tasks through:

[26] AER analysis.

- lower labour time requirements—this may come about through various means such as learning by doing and training; distributors may also achieve efficiencies in their tasks by leveraging off IT and systems investments, as well as better use of information such as smart meter data.
- shorter travel times—for example, by optimising job schedules with the aid of the aforementioned IT investments.

For these reasons we do not consider it is appropriate to adjust each individual price by applying the adjusted labour rates to CitiPower's 2016−20 model and adjusting for inflation.

We consider our method for adjusting CitiPower's prices is appropriate given the top-down pricing model CitiPower provided in its proposal. If CitiPower and/or other stakeholders propose alternative methods that they consider better incorporate our decision on maximum labour rates into fee-based prices we will consider these in our final decision.

Note on prices for the six month extension period

As discussed in section 16.1.2, CitiPower derived its proposed prices for fee-based services for the six-month extension period by escalating 2020 prices by CPI and an X–factor. CitiPower then derived its proposed 2021–22 prices by escalating the six-month extension period prices by CPI and X.

As we have not yet set approved prices for the six month extension period, we will consider the implications of this approach for prices for the 2021–26 regulatory control period in our final decision.

16.1.4.2 Failed field visits

In this draft decision, we require CitiPower to offer two failed field visit fees. One for higher cost services that require two skilled field staff and a service truck ($341.20, $2020–21), and another for lower cost services. As we discuss below, we require the failed field visit fee for lower cost services to equal the full price for the "Special meter read" service ($29.41, $2020–21).

We also require CitiPower to explicitly state the services to which it would apply these respective failed field visit fees.

CitiPower proposed a failed field visit fee, which would apply where a customer requests a service but CitiPower was unable to perform the service due to customer fault.[27]

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[27] CitiPower, *Model 12.01 - Fee Based, 31 January 2020*, 'Forecast charges BH'!A33:G33 and 'Forecast charges AH'!A33:G33; CitiPower, *Alternative control services charges: CP APP09 - ACS charges - Jan2020 - Public: Regulatory proposal 2021–26*, January 2020, p. 4–5.

AGL accepted it is reasonable to charge for failed or wasted visits where a field crew cannot undertake the requested task at the site due to customer fault.[28] However, AGL and Origin Energy noted there are instances where the failed field visit fee is higher than the fee for the requested service. They considered the failed field visit fee should be the same or less than the fee for the requested service because the time at the site is reduced and no materials are used.[29] AGL also requested CitiPower clarify when it would levy the failed field visit fee.[30]

CitiPower clarified that the failed field visit fee as included in the initial proposal applies only when the requested service includes the cost of two skilled field staff and a service truck. For CitiPower's fee-based services, these are:[31]

- Basic connections
- Meter/NMI/site investigation
- Meter accuracy test
- Isolation of supply or reconnection, excluding HV (single)
- Isolation of supply and reconnection after isolation, excluding HV (same day)
- Standard alteration, <60 minutes
- Complex alteration, >60 minutes.

The failed field visit fee is lower than the charge for completing any of these services.

CitiPower also clarified that the failed field visit fee is not restricted to requests for 'failed' fee-based services as listed above. The failed field visit fee would apply in all cases where the works are customer-initiated, when the requested service includes the cost of two skilled field staff and a service truck, and where CitiPower is unable to carry out the works due to customer fault − for example, this could include relevant quoted services.[32]

CitiPower further stated it does not propose to charge the failed field visit for services that would be at a lower cost than the cost of the failed field visit.[33] CitiPower offers several fee-based services whose fees are significantly lower than the failed field visit fee. Table 16.5 shows the proposed prices for these lower cost services.

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28 AGL, *Submission: Victorian electricity distribution determination 2021–26*, 3 June 2020, p. 5.

29 AGL, *Submission: Victorian electricity distribution determination 2021–26*, 3 June 2020, p. 5; Origin Energy, *Submission: RE: Submission to Victorian electricity distributors regulatory proposals*, 3 June 2020, p. 8.

30 AGL, *Submission: Victorian electricity distribution determination 2021–26*, 3 June 2020, p. 5.

31 CitiPower, *Response to information request #058 - Further questions on wasted visits*, 28 July 2020, p. 2.

32 CitiPower, *Response to information request #058 - Further questions on wasted visits*, 28 July 2020, p. 3.

33 CitiPower, *Response to information request #058 - Further questions on wasted visits*, 28 July 2020, p. 3.

Table 16.5 Proposed prices for lower cost ancillary network services for 2021–22 ($2020–21)

Service	Proposed price for 2021–22
Special reading	$32.07
Manual re-energisation (incl customer transfer)	$38.99
Manual re-energisation (same day)	$50.07
Manual de-energisation	$39.58

Source: CitiPower, *Alternative control services charges: CP APP09 - ACS charges - Jan2020 - Public: Regulatory proposal 2021–26*, January 2020, p. 4; CitiPower, *Model 12.01 - Fee Based*, 31 January 2020, 'Forecast charges BH'C17, C24:C26.

CitiPower stated these fee-based services require only one technician and a car (rather than two skilled field staff and a service truck).[34] CitiPower proposed to charge the full price of these fee-based services where CitiPower cannot perform the requested work due to customer fault. CitiPower stated the cost of these services "mainly reflect travel time, with a very short time on site."[35]

Based on this information, it would appear that the costs of a failed field visit for the services in Table 16.5 are the same. We therefore consider there is no reason to charge more than the failed visit fee for the lowest cost service ("Special reading").

We therefore require CitiPower to include a second failed field visit fee based on our draft decision price for the lowest cost service shown in Table 16.5. In Appendix A, we labelled this second fee "Failed field visit - simple tasks" (and re-labelled CitiPower's proposed "Failed field visit" service as "Failed field visit - complex tasks").

16.1.4.3 Consolidation of the "Meter accuracy test" service

In the 2016–20 regulatory control period, CitiPower provided three types of “Meter accuracy test” ancillary network services. These distinguished between single-phase, multi-phase and CT (in order of ascending pricing). CitiPower also offered a lower charge for additional meters tested (except for the CT service). CitiPower proposed to consolidate these into one “Meter accuracy test” charge for the 2021–26 regulatory control period. There is no lower charge for each additional meter tested. Table 16.6 summarises these prices.

[34] CitiPower, *Response to information request #058 - Further questions on wasted visits*, 28 July 2020, p. 3.
[35] CitiPower, *Response to information request #058 - Further questions on wasted visits*, 28 July 2020, p. 3.

Table 16.6 Metering accuracy test prices ($2020–21)

	2020 (previous AER decision)	2021–22 (proposal)
Meter accuracy test – Single phase	427.10	NA
Meter accuracy test – Single phase additional meter	197.88	NA
Meter accuracy test – Multi phase	478.66	NA
Meter accuracy test – Multi phase additional meter	367.41	NA
Meter accuracy test – CT	620.88	NA
Meter accuracy test	NA	459.59

Source: CitiPower, *Alternative control services charges: CP APP09 - ACS charges - Jan2020 - Public: Regulatory proposal 2021–26*, January 2020, p. 4; CitiPower, *Model 12.01 - Fee Based*, 31 January 2020, 'Forecast charges BH'B16:G16; CitiPower, *Approved pricing proposal 2020 - Attachment C - 2020 ACS Charges*, 'CP'!J8:J15, November 2019.

Origin Energy noted the Victorian distributors proposed to consolidate some services in the 2021–26 regulatory control period, citing CitiPower's consolidation of meter accuracy services. Origin Energy requested clarification of any proposed service consolidation between regulatory control periods and the associated rationale.[36]

CitiPower stated customers requested more simplified charges during customer engagement over the previous three years. Further, the number of metering accuracy services it conducts has decreased significantly due to the advanced metering infrastructure, with only around 50 of these conducted per year in total. For these reasons, CitiPower considers it is appropriate to consolidate its "Meter accuracy test" charges.[37]

CitiPower also confirmed it derived the proposed price for "Meter accuracy test" by taking a simple average of “Meter accuracy test—single phase” and “Meter accuracy test—multi phase”. CitiPower subsequently proposed to adjust its charge for "Meter accuracy test" to be calculated based on a weighted average of 2019 volumes of each charge.[38] This reduces CitiPower's proposed price for the "Meter accuracy test" for the 2021–22 regulatory year from $459.59 to $448.65 ($2020–21) for business hours. The after-hours price decreases from $594.79 to $514.45 ($2020–21).[39]

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36 Origin Enegy, *Submission: RE: Submission to Victorian electricity distributor’s regulatory proposals*, 3 June 2020, p. 8.

37 CitiPower, *Response to IR#061: Ancillary network services*, 12 August 2020, pp. 1–2.

38 CitiPower, *Response to IR#061: Ancillary network services*, 12 August 2020, pp. 1–2.

39 CitiPower, *Response to IR#061: Ancillary network services*, 12 August 2020, p. 1.

We consider consolidating the three "Meter accuracy test" services from the 2016–20 regulatory control period into one service is reasonable. We agree with CitiPower that it is consistent with customers' requests to simplify charges.

In addition, CitiPower's proposed price is heavily weighted towards price levels for "Meter accuracy test - single phase", which is the lowest priced of the three services from the 2016–20 regulatory control period. CitiPower's revised price of $448.65 ($2020–21) is a 5 per cent increase on the price for "Meter accuracy test - single phase" in 2020 in real terms. On the other hand, it represents a 6 per cent and 28 per cent decrease on the prices for "Meter accuracy test - multi phase" and "Meter accuracy test - CT", respectively, in 2020 in real terms. This reflects the fact that the majority (approximately 74 per cent) of meter accuracy tests historically relate to single-phase meters.[40]

However, it is not clear whether CitiPower proposed to apply the "Meter accuracy test" fee only once—even when testing multiple meters—or whether CitiPower would apply the fee for each meter tested.[41]

If it is the former, we consider this is reasonable and commend CitiPower for the initiative to simplify its charges. We only require CitiPower to make this more explicit in the revised proposal (and in its annual pricing proposals).

If it is the latter, we do not consider this is reasonable and require CitiPower to continue to offer a separate (and lower) price for testing additional meters. Table 16.6 shows the charge for testing additional meters in the 2016–20 regulatory control period is 54 per cent and 23 per cent lower than the full charge for testing single-phase and multi-phase meters, respectively. This points to costs associated with the first meter test that additional meters tests would not incur.

The fees for additional meter tests should not incorporate the costs of travel to and from the site, for example. We also expect any administration costs related to additional tests would be incremental to the administration costs of the first meter test. As alluded to above, CitiPower's price for the consolidated "Meter accuracy test" appears to be a weighted average of the prices for the first meter test for single-phase, multi-phase and CT meters. Hence, charging additional meter tests with the same price would appear to double count costs such as travel time and the principal administration costs.

For these reasons, we consider CitiPower should continue to offer a separate (and lower) price for testing additional meters if there is an additional charge. In this case, we require that CitiPower's revised proposal includes a proposed service relating to the

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40 CitiPower, *Response to IR#061: Ancillary network services*, 12 August 2020, p. 2.

41 In the former case, for example, CitiPower would charge $411.46 ($2020–21) if it receives a request to test three meters during business hours (see our draft decision price in Appendix A). In the latter case, CitiPower would charge $1,234.38 ($2020–21) if it receives a request to test three meters during business hours.

testing of additional meters and explains how it has calculated the quantum of the associated charge.

16.1.4.4 Mark-ups for after-hours rates

Regarding the Victorian distributors in general, AGL submitted there are differences in charges for services performed during business hours and after hours.[42]

The mark-up on CitiPower's after-hours fees for fee-based services ranges between 9 per cent and 29 per cent compared to its proposed prices for business hours. We consider this to be reasonable as labour rates would tend to be higher outside of normal working hours.

The exception to this is CitiPower's proposed after-hours rate of $181.81 ($2020–21) for the "Manual re-energisation (incl customer transfer)" service. This is 366 per cent higher than the business hours price of $38.99 ($2020–21).

CitiPower explained that the difference in the price between the business hours and the after-hours rates is the cost of contracting after-hours skilled labour to attend the site. CitiPower also noted these charges, including the difference in the cost between business hours and after hours, were approved by the AER in its final determination for 2016–2020.[43]

However, CitiPower stated it does not currently provide after-hours manual re-energisations, as reflected in zero volumes forecast for the 2021–26 regulatory control period.[44] As such, CitiPower proposed to remove the after-hours manual re-energisation (incl customer transfer) charge from its proposal.[45] We consider this is reasonable.

As we discussed in section 16.1.4.1, we adjusted CitiPower's proposed business-hours prices for fee-based services downward because CitiPower's business-hours labour rates exceed Marsden Jacob's recommended maximum labour rates.

Marsden Jacob advised that after-hours labour rates should not exceed 1.75 times business hours rates.[46] We consider this to be reasonable, consistent with previous distribution determinations.[47] Table 16.22 shows the mark-up on CitiPower's proposed after-hours labour rates are below 75 per cent when compared either CitiPower's

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42 AGL, *Submission: Victorian electricity distribution determination 2021–26*, 3 June 2020, p. 5.

43 CitiPower, *Response to IR#061: Ancillary network services*, 12 August 2020, p. 3.

44 CitiPower, *Model 12.01 - Fee Based*, 31 January 2020, 'Forecast charges AH'J24:N24.

45 CitiPower, *Response to IR#061: Ancillary network services*, 12 August 2020, p. 3.

46 Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet Services: Advice to the Australian Energy Regulator*, 30 June 2020, pp. 13–14.

47 AER, *Draft decision: SA Power Networks Distribution Determination 2020 to 2025; Attachment 15: Alternative control services*, October 2019, pp. 17–18; AER, *Draft decision: Energex Distribution Determination 2020 to 2025: Attachment 15: Alternative control services*, October 2019, p. 10; AER, *Draft decision: Ergon Energy Distribution Determination 2020 to 2025: Attachment 15: Alternative control services*, October 2019, p. 10.

proposed business hours labour rates or our draft decision labour rates (see Table 16.1).

We have therefore not adjusted CitiPower's proposed after-hours prices for fee-based services in this draft decision (except "Manual re-energisation (incl customer transfer)" as discussed above).

The mark-up on after-hours fees for fee-based services ranges between 11 per cent and 34 per cent compared to our draft decision prices for business hours. We consider this to be reasonable as labour rates would tend to be higher outside of normal working hours.

Table 16.7 CitiPower proposed hourly labour rates for 2021–22 (incl. on-costs and overheads, $2020–21) - after hours

	CitiPower proposed total hourly rate	Mark up on BH rate[1]	Implied Marsden Jacob recommended maximum total labour rate
Administration	NA	NA	162.28
Field worker	223.60	18% (31%)	300.56
Technical	251.24	23% (47%)	300.56
Engineer	244.10	34% (62%)	263.71
Senior engineer	318.74	15% (62%)	344.84

Note: 1. The first number is the mark-up in percentage terms of CitiPower's proposed after-hours labour rate compared to CitiPower's proposed business-hours labour rate. The number is parentheses is the mark-up in percentage terms of CitiPower's proposed after-hours labour rate compared to our draft decision business hours labour rates (see Table 16.1).

Source: CitiPower, *Alternative control services charges: CP APP09 - ACS charges - Jan2020 - Public: Regulatory proposal 2021–26*, January 2020, p. 6; CitiPower, *Model 12.02 - Quoted Services Labour Rate*, January 2020; Marsden Jacob, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet: Advice to the Australian Energy Regulator*, 30 June 2020, pp. 13–14.

16.1.4.5 New services for the 2021–26 regulatory control period

CitiPower proposed four new fee-based services to replace the “Service truck visit” service offered in the 2016−20 regulatory control period: [48]

- Isolation of supply or reconnection, excluding HV
- Isolation of supply and reconnection after isolation, excluding HV (same day)
- Standard alteration (between 30 and 60 minutes)
- Complex alteration (> 60 minutes).

[48] CitiPower, *Regulatory proposal 2021–26*, January 2020, p. 141.

A key input to the calculation of the proposed prices for these new services is the "price ratio" between these services.[49]

CitiPower explained the price ratios demonstrate a difference in the cost of providing each service compared to the "Isolation of supply or reconnection, excluding HV" service. This ratio determines the difference in the charges based on cost, as a basis for the difference in the price of each service.[50]

The average time taken to perform the services appears to be the key determinant of these price ratios. For example, CitiPower stated the average duration of complex alterations is 65 minutes. Hence, the price of "Complex alteration (> 60 minutes)" is 2.1 times greater than the price of "Isolation of supply or reconnection, excluding HV", which generally requires less than 30 minutes.[51]

Another key input into the calculation of proposed prices is the forecast of relative volumes for each of the services. CitiPower stated these volume forecasts are based on actual volumes for 2018.[52] Based on our analysis, these volume forecasts influence the levels of the prices for these new services.[53]

We consider the logic behind CitiPower's method for calculating the price levels for these new services is broadly reasonable. However, we note that another key input into the price levels for these services is the price level for the "Service truck visits" service (which they are replacing).[54] We consider this suffers from the same problems discussed in section 16.1.4.1 of simply "rolling over" prices from the previous regulatory control period. This is because the costs of providing these services—particularly labour—may have changed since the 2016–20 regulatory control period.

Overall, we consider CitiPower's proposed new services for the 2021–26 regulatory control period are broadly reasonable. As we discussed in section 16.1.4.1, we adjusted the 2021–22 prices for these services during business hours to reflect our consultant's recommended maximum labour rates.

16.1.4.6 Abolishment of charges for the 2021–26 regulatory control period

CitiPower, along with other Victorian distributors, proposed to abolish fees for "Remote de-energisation", "Remote re-energisation" and "Access to meter data". CitiPower also proposed to create a separate quoted service for "Access to meter data" where requests are cumbersome.[55]

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49 CitiPower, *Model 12.01 - Fee Based*, 31 January 2020, 'New charges calc'J15:J18, J45:J48.

50 CitiPower, *Response to IR#061: Ancillary network services*, 12 August 2020, p. 3.

51 CitiPower, *Response to IR#061: Ancillary network services*, 12 August 2020, p. 3.

52 CitiPower, *Response to IR#061: Ancillary network services*, 12 August 2020, p. 3.

53 The relative volumes, not the absolute volumes, determine price levels. AER analysis; CitiPower, *Model 12.01 - Fee Based*, 31 January 2020, 'New charges calc'.

54 CitiPower, *Model 12.01 - Fee Based*, 31 January 2020, 'New charges calc'C5, C35.

55 CitiPower, *Regulatory proposal 2021–26*, 31 January 2020, p. 142.

AGL submitted the Victorian distributors are leading the NEM for the provision of remote services for meter reads, re-energisation and de-energisation as a result of the smart meter rollout.[56] AGL, along with Energy Consumers Australia (ECA) and the Victorian Department of the Environment, Land, Water and Planning (DELWP), welcomed the abolishment of remote re-energisation and remote de-energisation fees from 1 July 2021.[57]

We consider CitiPower's proposal to abolish the charges for remote re-energisations and remote de-energisations is reasonable. As CitiPower noted, it has the economies of scale to offer these services (among others) at almost no cost.[58] This has been facilitated by the rollout of smart meters and other technological advancements that reduce or eliminate the need for site visits.

We also consider CitiPower's proposal regarding the "Access to meter data" service is reasonable. That is, CitiPower proposed to offer the service free of charge, except for cumbersome requests which CitiPower proposed to provide as a quoted service.

However, it is unclear from the initial proposal what constitutes a "cumbersome" request. In the revised proposal, we require CitiPower to provide parameters and definitions to distinguish between "Access to meter data" services that are free and those that incur a quoted service charge.

Local Governments called on the AER to encourage the practice of abolishing charges across all distributors, where possible, because of system improvements such as the rollout of smart meters. Local Governments also recommended we assess whether these are being applied evenly across all distributors.[59] Similarly, DELWP encouraged us to "to ensure operational efficiencies delivered by AMI [advanced metering infrastructure] are resulting in sustained cost savings for consumers."[60] Meanwhile the ECA "look forward to see[ing] what other customer charges can be removed entirely" (as benefits resulting from smart meters).[61]

We consider CitiPower has chosen appropriate services to offer free of charge in the 2021–26 regulatory control period. As discussed above, the costs for these services have become immaterial due to the rollout of smart meters.

Nevertheless, we are interested in receiving further submissions pointing to other services whose costs may have similarly become immaterial due to the smart meter rollout and so can be offered free of charge. We will consider such submissions for our final decision.

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56 AGL, *Submission: Victorian electricity distribution determination 2021–26*, 3 June 2020, p. 5.

57 AGL, *Submission: Victorian electricity distribution determination 2021–26*, 3 June 2020, p. 5; DELWP, *Victorian Government submission on the Electricity Distribution Price Review 2021–26*, 29 May 2020, p. 5; ECA, *Victorian electricity distributors regulatory proposals 2021–26 submission: Attachment 1*, June 2020, p. 37.

58 CitiPower, *Regulatory proposal 2021–26*, January 2020, p. 142.

59 Local Government, *Local Government response to the Victorian Electricity Distribution Price Review (EDPR) 2021–26: Prepared by the Victorian Greenhouse Alliances*, May 2020, p. 23.

60 DELWP, *Victorian Government submission on the Electricity Distribution Price Review 2021–26*, May 2020, p. 5.

61 ECA, *Victorian electricity distributor's regulatory proposals 2021–26 submission: Attachment 1*, June 2020, p. 37.

16.2 Metering

We are responsible for the economic regulation of the regulated metering services provided by the Victorian distributors. These include:

- type 5 (interval) and type 6 (accumulation) metering services, including meters installed as part of the Advanced Metering Infrastructure (AMI) program in Victoria, which are classified as type 5-6 meters
- type 7 metering services, which relate to unmetered connections with predictable energy consumption patterns (such as public lighting connections), and
- auxiliary metering services (including metering exit fees).

Section 16.2 deals with type 5 and 6 (inc. smart metering) services and with metering exit fees.[62] Type 7 metering services and auxiliary metering services other than metering exit fees are considered as a part of the broader ancillary network services in section 16.1.

Unlike other jurisdictions in the NEM, the Victorian distributors are the monopoly providers of most metering services, including smart metering services. This approach differs from the Power of Choice reforms that apply across the rest of the NEM, arising from the Victorian Government's decision to implement a smart meter roll-out program.

- In 2006, the Victorian Government initiated a roll-out of smart meters to all households and small businesses with electricity use of up to 160 MWh per annum under the AMI program.[63] Through Orders in Council in 2008, the Victorian Government established obligations on distribution businesses to install meters with specified AMI functionality,[64] together with supporting communications infrastructure, IT systems and processes.
- In 2015 the Australian Energy Market Commission (AEMC) introduced metering contestability to residential and small business electricity consumers through the Power of Choice reforms.[65] These reforms, which apply in other jurisdictions, do not apply in Victoria due to the existing AMI program. Under these reforms, distributors in other jurisdictions in the NEM are no longer the monopoly providers of new meters, and type 5 and 6 meters no longer meet the minimum standards for new meters.
- In 2017, the Victorian Government deferred metering contestability in Victoria through an Order in Council. Consequently, Victorian distributors remain the monopoly providers of type 5 and 6 (inc. smart metering) services, and have the role of metering coordinator, metering provider, and metering data provider for AMI

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62 Metering exit services allow the distributor to recover the written-down value of, as well as the efficient costs of removing and disposing of, AMI meters. This currently occurs when brownfield sites become embedded networks, resulting in the removal of existing meters.

63 Victorian Government, *Order-In-Council, No. S 346*, October 2017, cl. 2(b).

64 Department of Primary Industries, *Minimum AMI Functionality Specification (Victoria)*, September 2008.

65 AEMC, *Competition in metering services information sheet*, November 2015.

meters for residential and business customers consuming up to 160 MWh of electricity per annum.

CitiPower currently has more than 341 000 smart meters across its network, covering 97.5 per cent of its residential customers.[66]

In this section, we explain our decision for CitiPower on the following metering services:

- Type 5 and 6 (inc. smart metering) services (regulated service only)
- Metering exit fees.

For our draft decision on other regulated metering services (for example, type 7 metering services and auxiliary metering services other than metering exit fees) see section 16.1 on ancillary network services.

16.2.1 Draft decision

Our draft decision is to:

- reject CitiPower's proposed approach to reallocate 88 per cent of communication infrastructure operating expenditure (opex) and communication devices annual program capex for revenue-capped type 5 and 6 (inc. smart metering) services to standard control services (SCS). Our draft decision substitutes an alternative cost reallocation of 25 per cent of this expenditure to SCS
- reject CitiPower's proposed revenues for type 5 and 6 (inc. smart metering) services and substitute alternative revenues for type 5 and 6 (inc. smart metering) services that have been calculated by:
    - updating forecast 2019 values for capital expenditure, operating expenditure, and meter volumes with actual results reported to the AER in regulatory information notices (RINs)
    - applying metering volume forecasts to operating and capital expenditure that incorporate adjustments for the COVID-19 pandemic
    - applying our alternative cost reallocation calculations
    - applying our draft decision rate of return, labour escalators, and inflation forecast consistent with standard control services.[67]
- reject CitiPower's proposed metering exit fees and substitute alternative charges.

16.2.1.1 Type 5 and 6 (inc. smart metering) services revenue

Our draft decision allows for a revenue requirement for type 5 and 6 (inc. smart metering) services for the 2021–26 regulatory control period of $104.71 million

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66 CitiPower, *Regulatory Proposal 2021–26*, January 2020, p.133.

67 For further information, see the overview, attachment 3 - rate of return and attachment 6 - operating expenditure of this draft decision.

($ nominal) compared to CitiPower's proposed $106.63 million ($ nominal). This is expected to lead to lower annual metering charges over the 2021–26 regulatory control period than those proposed by CitiPower. However, as our draft decision confirms our F&A position that metering services are subject to a revenue cap, we have not set prices in this draft decision.[68]

There are two key drivers affecting our draft decision on CitiPower's revenue requirement for type 5 and 6 (incl. smart metering) charges:

- The first key driver is the opening asset base. CitiPower's proposed opening asset base is consistent with our most recent decision on AMI metering. However, CitiPower did not take the opening asset base from 2016 (the first year of the current regulatory control period) and instead took the 2015 opening asset base. Correcting for this has a downward effect on CitiPower's revenue requirement.
- The other key driver is the re-allocation of a proportion of CitiPower's communication operating and capital expenditure. This has an upward effect on CitiPower's type 5 and 6 (incl. smart metering) services revenue from 2021 onwards, but a corresponding downward effect on standard control services revenue.

The re-allocation of costs between type 5 and 6 (inc. smart metering) services and SCS has no material impact on the total revenue that CitiPower can earn for the provision of direct control services. However, it does change how costs are recovered from customers. Under our draft decision, more of the costs will be recovered through metering services than through standard control network tariffs as proposed by CitiPower. As 97.5 per cent of CitiPower's residential customers have smart meters, this cost re-allocation results in little difference in the ultimate price outcomes for consumers.

Our draft decision revenue requirement includes the following building blocks as set out in Table 16.8 below.

Table 16.8 Draft decision – metering annual revenue requirement for the 2021–26 regulatory control period ($ nominal)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Depreciation	9.13	9.93	10.78	11.62	12.51	53.98
Return on capital	3.37	3.12	2.87	2.56	2.25	14.17
Opex[a]	5.85	6.05	6.27	6.51	6.78	31.47
Tax	1.04	0.98	1.00	1.07	1.12	5.23

[68] AER, *Final framework and approach: AusNet Services, CitiPower, Jemena, Powercor and United Energy - Regulatory control period commencing 1 January 2021*, January 2019. See also attachment 14 of this draft decision.

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Unsmoothed revenue	19.39	20.09	20.93	21.77	22.67	104.85
X-factor	n/a	0%	0%	0%	0%	n/a
Smoothed revenue	19.97	20.45	20.93	21.43	21.94	104.71

Note: (a) Operating expenditure includes debt raising costs.

Source: AER, Draft decision CitiPower - distribution determination 2021–26 - Metering PTRM - September 2020.

Once the total revenue requirement is determined from the final building block components, we are required to set a revenue profile for the 2021–26 regulatory control period. We do this by adjusting the annual revenues, but maintaining the same total revenue requirement by measuring the revenue in real 2020–21 dollars (known as the NPV or net present value). This allows us to set or 'smooth' the revenue over the regulatory control period to deliver a preferred revenue profile. For CitiPower, this NPV is $92.05 million ($real 2020–21).

For the 2021–26 regulatory control period, we have set a revenue profile for CitiPower that consists of a significant decrease in revenue in the first year, followed by flat expected revenue in real terms for the following years. This means that after the decrease in the first year, the expected revenue in following years will only increase by inflation, to give a total expected revenue of $92.05 million ($real 2020–21) to match the NPV based on the total building block components. The movements from year-to-year that create our revenue path are represented by P0 for the first year and X-factors for years 2–5 to easily demonstrate the movements.[69]

Table 16.9 provides the P0 and X-factors that CitiPower proposed, and those of our draft decision. Table 16.10 provides the resulting expected or 'smoothed' revenue for the 2021–26 regulatory control period as proposed by CitiPower, and set by our draft decision.

Table 16.9 Draft decision P0 and X-factors

	2021–22	2022–23	2023–24	2024–25	2025–26
Proposal	19.40%	0%	0%	0%	0%
Draft Decision	21.16%	0%	0%	0%	0%

Note: P0 movement for draft decision calculated from approved 2020 revenue, and indexed to $2020–21 for comparison.

Source: CitiPower, 2021–26 Regulatory Proposal - Supporting document - CP MOD 11.02 - Metering PTRM and exit fees 2021–26, January 2020 PUBLIC.

[69] X-factors to apply in years 2–5 of the regulatory control period are recalculated prior to use in the relevant annual pricing proposal to reflect updated return-on-debt portfolios.

Table 16.10 Draft decision smoothed revenue 2021–26 ($ million, nominal)

Smoothed revenue	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Proposal	20.33	20.81	21.31	21.82	22.35	106.63
Draft Decision	19.97	20.45	20.93	21.43	21.94	104.71

Source: CitiPower, 2021–26 Regulatory proposal - Supporting document - CP MOD 11.02 - Metering PTRM and exit fees 2021–26, January 2020 PUBLIC; AER, Draft decision CitiPower - distribution determination 2021–26 - Metering PTRM - September 2020.

Cost allocation

Our draft decision is to reject CitiPower's proposed reallocation of some AMI IT and communication systems expenditures (capital and expenditure (capex) and opex) currently allocated to type 5 and 6 (inc. smart metering) services to an allocation of 12 per cent to type 5 and 6 (inc. smart metering) services and 88 per cent to SCS. While we have generally accepted that the underlying causal allocator identified by CitiPower may be an appropriate allocator for shared services, we disagree with the way that allocator has been calculated. We have substituted a revised allocation where we consider that it is more appropriate to do so. For further explanation see section 16.2.4.1.

Our draft decision is to reallocate 25 per cent of these AMI IT and communication costs to SCS. Table 16.11 sets out CitiPower's proposed communications capex allocated to ACS and our draft decision communications capex allocated to ACS.

Table 16.11 Communications capex allocated to metering 2021–26 ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Proposed	0.04	0.04	0.04	0.05	0.09	0.26
Draft Decision	0.44	0.45	0.26	0.28	0.55	1.98

Source: AER, Draft decision - CitiPower - distribution determination 2021–26 - AMI comms - September 2020; CitiPower, 2021–26 Regulatory proposal - Supporting document - CP MOD 6.03 AMI Comms - January 2020 PUBLIC.

Table 16.12 sets out CitiPower's proposed reallocation of communications infrastructure opex from type 5 and 6 (inc. smart metering) services to SCS compared to our draft decision.

Table 16.12 AMI ICT opex re-allocated from metering ACS to SCS 2021–26 ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Proposed	0.62	0.62	0.62	0.62	0.62	3.12
Draft Decision	0.21	0.21	0.21	0.21	0.21	1.04

Source: AER, Draft decision - CitiPower - distribution determination 2021–26 - Metering cost model - September 2020; CitiPower, 20201–26 Regulatory proposal - Supporting document - CP MOD 11.04 Metering cost model - January 2020 PUBLIC.

16.2.1.2 Exit fees

Our draft decision sets metering exit fees that reflect adjustments made to the building block components for type 5 and 6 (inc. smart metering) revenue. These metering exit fees reflect:

- apportionment of the meter, IT, communications, and any other regulated asset base to reflect foregone revenue based on the average remainder of life of an asset
- administration costs of removing the meter
- tax allowances, and other relevant costs.

These cost components are sourced from the calculations of the building block components for type 5 and 6 (inc. smart metering) revenue, and are therefore subject to the same assessment and reasoning as for the type 5 and 6 (inc. smart metering) revenue.

The metering exit fees from our draft decision are lower than the metering exit fees proposed by CitiPower for each year of the 2021–26 regulatory control period.

Our draft decision metering exit fees for 2021−22 are set out in Appendix B. Prices for subsequent years will be determined by the control mechanism formula set out in attachment 14. Our draft decision on the X-factors for metering exit services is also set out in Appendix B.

16.2.2 CitiPower's proposal

16.2.2.1 Type 5 and 6 (inc. smart metering) services revenue

Metering systems cost reallocation

In their proposals for the 2021–26 regulatory control period, the Victorian distributors advised that metering and power quality data provided through AMI is increasingly used to support distribution network functions, providing information on the performance, safety and maintenance of distribution networks. Additional uses also include network planning, call centre operations and outage management.[70]

[70] AusNet Services, *Electricity Distribution Price Review 2022–26 Regulatory Proposal Part IV 310120 PUBLIC*, January 2020, pp. 11-14; CitiPower, *Regulatory Proposal 2021–26,* January 2020, pp. 133-135; Powercor, *Regulatory Proposal 2021–26*, January 2020, pp. 154-155; United Energy, *Regulatory Proposal 2021–26*, January 2020, p. 185; Jemena*, 2021–26 Regulatory Proposal*, January 2020, p.71.

The Victorian distributors have taken different approaches to how AMI IT and communication costs are allocated between ACS − specifically type 5 and 6 (inc. smart metering) services − and SCS to reflect these additional uses of metering and power quality data.

For the 2021–26 regulatory control period, Citipower proposed to reallocate some metering IT and communication expenditures between SCS and ACS, shifting a greater proportion of the expenditure to SCS. The rationale provided was that smart meter functionality is essential to provide full visibility of the low-voltage network and to manage the increasing penetration of rooftop solar (and other technologies).[71]

In particular, CitiPower proposed that costs related to communication infrastructure opex and communication devices annual program capex be reallocated from 100 per cent metering ACS to 88 per cent SCS and 12 per cent metering ACS.

Revenue

Consistent with the F&A and past regulatory determinations, CitiPower proposed a revenue cap as the form of control for type 5 and 6 (inc. smart metering) services in the 2021–26 regulatory control period.

CitiPower proposed to apply a building block approach to determine revenues for type 5 and 6 (inc. smart metering) services.

Using its forecast building block components, CitiPower calculated its proposed annual revenue requirement for the 2021–26 regulatory control period. This is set out in Table 16.13.

Table 16.13 Proposed metering annual revenue requirement ($ million, nominal)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Depreciation	9.53	10.31	11.14	11.96	12.53	55.46
Return on capital	3.55	3.32	3.06	2.72	2.40	15.05
Opex	5.54	5.83	6.14	6.44	6.75	30.70
Tax	1.10	1.06	1.11	1.14	1.14	5.54
Unsmoothed revenue requirement	19.72	20.51	21.44	22.26	22.82	106.75
X-factor	n/a	0%	0%	0%	0%	n/a
Smoothed revenue	20.33	20.81	21.31	21.82	22.35	106.63

Source: CitiPower, 2021–26 Regulatory proposal - Supporting document - CP MOD 11.02 Metering PTRM & exit fees 2021–26, January 2020.

[71] CitiPower, *2021–26 Regulatory Proposal - Jan 2020 Public*, January 2020 p.135.

CitiPower included indicative annual metering charges in its proposal. These indicative charges are based on its proposed revenue for the 2021−26 regulatory control period. CitiPower proposed to reduce its average metering charges by 21 per cent.[72]

Table 16.14 sets out CitiPower's indicative charges.

Table 16.14 Proposed Alternative Control Metering Service Charges ($ per meter, 2020–21)

Meter type	2021–22	2022–23	2023–24	2024–25	2025–26
Single phase	56.6	55.9	55.2	54.5	53.9
Three phase direct connected meter	70.0	69.1	68.2	67.4	66.6
Three phase (current transformer) connected meter	88.0	86.9	85.8	84.7	83.8

Source: Citipower, *2021–26 Regulatory Proposal Jan 2020 Public*, January 2020, p. 135, Table 11.1.

16.2.2.2 Metering exit fees

Metering exit services allow the distributor to recover the written down value, as well as the efficient costs of removing and disposing, of AMI meters. This currently occurs when brownfield sites become embedded networks, resulting in the removal of existing meters.[73]

CitiPower's proposed meter exit fees are set out in

Table 16.15 CitiPower proposed exit fees ($ nominal)

Meter type	2021–22	2022–23	2023–24	2024–25	2025–26
AMI single phase	306.48	297.26	280.32	261.84	246.21
AMI three phase	365.50	352.29	330.91	307.54	287.55
AMI three phase current transformer	719.14	682.00	633.92	581.28	535.09
Basic or MRIM	54.05	56.53	59.11	61.66	64.21

Source: CitiPower, 2021–26 Regulatory proposal - Supporting document - CP MOD 11.02 Metering PTRM and exit fees 2021–26 - Jan 2020-Public.xls.

16.2.3 Assessment approach

In our Final Framework and Approach, we classified type 5 and 6 (inc. smart metering) services and Metering exit services as alternative control services. Accordingly, we

[72] CitiPower, *Regulatory Proposal - Jan 2020, PUBLIC*, January 2020, p.133.

[73] AER, *Final Framework and Approach for Victorian Electricity Distributors*, October 2014, p. 101.

made our assessment with regard to the framework for regulating alternative control services in the NEL and NER.[74]

For our draft decision we also had regard, where relevant, to:

- the wider regulatory context in determining the allocation of metering service costs, including the possibility of Victoria adopting a competitive metering framework at some point in the future
- cost allocation principles, and particularly our Cost Allocation Methodology Guideline[75] and the approved Cost Allocation Methodology for each distributor[76]
- consistency of approach with other regulated services, including the weighted average cost of capital (WACC) and labour escalators used for SCS
- our decision for the 2016–20 regulatory control period
- comparisons between the Victorian distributors, and
- stakeholder feedback.

16.2.3.1 Type 5 and 6 (inc. smart metering) services revenue

As type 5 and 6 (inc. smart metering) services are classified as an alternative control service, the AER has a greater discretion under the NER in making our assessment compared to standard control services. We have chosen to apply a streamlined version of a building block approach. This is consistent with our approach adopted for the current regulatory control period.

16.2.3.2 Metering exit fees

Consistent with our approach for the current regulatory control period, the inputs we used to calculate metering exit fees are:

- our draft decision on CitiPower's opening metering asset base value for type 5 and 6 (inc. smart metering) services as of 1 July 2021, split into meter categories (meter, IT and communications) for the purpose of modelling the exit fee, as opposed to the broader category of 'remotely read interval meter'
- our draft decision on forecast metering capex and opex for type 5 and 6 (inc. smart metering) services for CitiPower's 2021–26 regulatory control period
- depreciation lives (meters 15 years, communications and IT 7 years), which we have accepted in this draft decision.

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74 NER, cl. 11.17.6(a).

75 AER, *Victorian electricity distribution network service providers - cost allocation guidelines*, June 2008.

76 CitiPower, *CitiPower Pty Ltd Cost Allocation Method*, August 2020, Version 10.

16.2.4 Reasons for draft decision

This section sets out in greater detail the reasons for our draft decision for each relevant service.

16.2.4.1 Type 5 and 6 (inc. smart metering) services revenue

Form of control

We maintain our final F&A position[77] to apply a revenue cap to type 5 and 6 (inc. smart metering) services as the form of control. This revenue cap sets a total annual revenue for each year of the regulatory control period.[78] CitiPower is then allowed to set prices that allow them to recover up to the total allowable revenue, calculated with proposed consumption forecasts, through the initial and annual pricing processes.

The revenue for the 2021–26 regulatory control period has been smoothed. The X-factor for each year of the 2021–26 regulatory control period is determined in the PTRM and is set out in Appendix B. The X-factor will be revised annually for the return on debt.

The control mechanism formula is set out in attachment 14 of this draft decision.

Metering systems cost reallocation

Overview

The distributors have taken different approaches to how AMI IT and communication costs are allocated between ACS and SCS. Our review has taken these different approaches into account and we have given consideration to the cost allocators and reasoning provided by each distributor.

Our draft decision rejects CitiPower's proposal to:

- Reallocate 88 per cent of its communication infrastructure opex, which is currently allocated 100 per cent to ACS, to SCS. Our draft decision provides for an allocation of 75:25 ACS:SCS.
- Reallocate 88 per cent of its communication devices – annual program capex, which is currently allocated 100 per cent to ACS, to SCS. Our draft decision provides for an allocation of 75:25 ACS:SCS.
- Allocate 100 per cent of its 3G shutdown capex to SCS. Our draft decision provides for an allocation 10.1:89.9 ACS:SCS for 3G shutdown capex.

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77 Final Framework and Approach – *AusNet Services, Jemena, CitiPower, Powercor and United Energy Regulatory control period commencing 1 January 2021*, January 2019, p 54.

78 The initial and annual pricing processes allow for adjustments to the revenue set in our determination to arrive at the total allowable revenue. These include adjustments for updated return on debt, actual inflation, incentive schemes, cost pass-throughs, and the true-up of actual revenues.

Background

There are three broad groups of activities that the AMI IT and communication systems support and across which costs can be allocated:

- The activities of the meter provider as a provider of metering services under the NER (alternative control services)
- The activities of the distributor in respect of market transactions and interactions under the NER (standard control services)
- The activities of the distributor in operating the network (standard control services).

2016−20 regulatory control period

This is not the first time we have considered the allocation of AMI IT and communication costs between ACS and SCS. In making our 2016–20 final decision we considered the allocation of AMI costs in the context of the expiry of the Advanced Metering Infrastructure Order in Council (AMI OIC), which required that all costs associated with AMI become regulated under the NER.[79] We engaged Energy Market Consulting Associates (EMCa) to help develop a cost allocation approach for our 2016–20 final decision.

EMCa considered that costs should be directly attributed (to distribution network SCS or metering ACS) only where the relevant systems are solely used to provide that service, or where use for the other services can be considered immaterial as defined by Australian accounting standards.

EMCa's recommended allocation of IT and communication opex costs is set out in Table 16.16. Where costs are shared and material, EMCa recommended the costs be allocated on a causal basis. However, EMCa did not identify any causal factors as the basis for the shared allocations. For capex, EMCa recommended that IT and communication related expenditures should be allocated solely to metering ACS.[80]

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[79] In our 2016–20 draft decision we did not allocate any AMI costs to SCS. At the time, metering services were not subject to competition but, following NER changes, competition was scheduled to begin from December 2017.[79] We considered that a different approach to allocating costs across each of the Victorian distributors would not help in promoting effective competition. We considered a consistent approach to be preferable and considered this could be dealt with through our Distribution Ring Fencing Guideline in accordance with a national framework, which was scheduled to be published by 1 December 2016. In the interim, we considered it was preferable to allocate all AMI costs to ACS.
In response to our 2016–20 draft decisions, the distributors disagreed with our decision to allocate all AMI costs to metering ACS. All of the Victorian distributors maintained that certain AMI costs should be allocated to SCS. We engaged Energy Market Consulting Associates (EMCa) to help develop a cost allocation approach for our 2016–20 final decision that could be applied across the Victorian distributors. We asked EMCa to focus on IT and communications costs as this was the main area where the service providers proposed to allocate costs to SCS.

[80] EMCa, *Advice on allocation of advanced metering infrastructure (AMI) IT and communications expenditure*, April 2016, p. iii.

Table 16.16 EMCa recommended allocation of AMI IT and communications costs for 2016–20 final decision

Allocation between alternative control services and standard control services	
Allocated solely to ACS metering	Communications infrastructure opex including Network Management Systems (NMS), Metering Management Systems (MMS), Network Operations and Control Centre (NOCC)
	Metering data management systems
Allocated solely to SCS	Field force mobility systems
	Network billing systems
	Customer information systems
	Outage management systems
Shared between ACS and SCS	B2B systems for managing AMI-related transactions with other market participants
	GIS
	Asset management systems
	Performance and reporting regulatory systems
	Middleware / integration bus technology
	Data analysis systems
	New / upgraded IT infrastructure to support the additional AMI functionality

Source: EMCa, *Advice on allocation of advanced metering infrastructure (AMI) IT and communications expenditure, April 2016*, p. iii.

Considerations

Implications for consumers and competitive landscape

A preliminary question in our assessment of this issue is the extent to which the proposed cost allocation warrants further analysis.

From one perspective, it can be argued that the immediate materiality of this issue for Victoria is small. The very high penetration of AMI across households and small businesses means that the customer grouping for type 5 and 6 (inc. smart metering) services is almost equivalent to the customers of SCS. We would therefore expect the allocation of costs between categories to result in little difference in the ultimate price outcomes for consumers.

Conversely, the appropriate allocation of costs can be seen as an important cornerstone in supporting not only the appropriate recovery of costs from relevant

customers, but also enabling efficient pricing signals to be sent regarding the costs of providing a given service. While the Victorian Government has decided not to introduce contestability at this time,[81] a key question is whether the proposed cost allocations preserve pricing structures that would be appropriate if the Victorian Government were to decide to introduce contestability to type 5 and 6 (inc. smart metering) services.

We are mindful that any allocation that shifts a significant portion of costs out of alternative control metering services to SCS, as proposed by CitiPower, could act as a barrier for any eventual move to metering contestability in Victoria.

In its submission, Vector has echoed this viewpoint:[82]

> In a competitive market, the price of metering is not bundled with the price of natural monopoly distribution services. Specific charges apply to metering services instead of 'common' network charges, more accurately reflecting the value of the service to customers. A competitive metering market therefore promotes pricing transparency, particularly for retailers and metering service providers, and reduces the risk of cross-subsidies from natural monopoly services.

Accordingly we consider it is important to identify an appropriate causal driver to assess the reallocation of costs between type 5 and 6 (inc. smart metering) services and SCS. This approach is also consistent with CitiPower's cost allocation methodology and our *Cost allocation methodology guideline*.[83]

Greater use of AMI infrastructure for SCS

We accept that AMI data is now used for broader purposes of network management and operation of the shared distribution network, including better understanding the effect of energy exported from rooftop solar on the low voltage network. We therefore accept that it is not unreasonable that a proportion of communication costs that were previously allocated to metering ACS could be appropriately shared across SCS and metering ACS.

DELWP and ECA have noted their support for additional network benefits being realised from AMI meters.[84] The AER's Consumer Challenge Panel, sub-panel 17 (CCP17) was supportive of the trend that metering expenses be reallocated to

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81 Department of Environment, Land, Water and Planning, *Victorian Government submission on the electricity distribution price review 2021–26*, June 2020, pp. 4-5.

82 Vector, *Submission on the AER's Issues Paper on Victorian Electricity Distribution Determination for 2021 to 26*, June 2020.

83 AER, *Victorian electricity distribution network service providers - cost allocation guidelines*, June 2008.

84 Department of Environment, Land, Water and Planning, *Victorian Government submission on the electricity distribution price review 2021–26*, June 2020, pp.4-5; Spencer & Co Business advisory services, *Report to Energy Consumers Australia - A review of Victorian Distribution Networks Regulatory Proposals 2021–26*, June 2020, p.37.

standard control in instances where the functions support the improvement of network operations and broader customer service improvements.[85]

Cost allocation principles

Section 2.2.4 of our *Cost allocation methodology guideline* states:

- In accordance with the requirements of clause 6.15.2(3)(ii) [of the NER], shared costs incurred in providing several categories of distribution services must be allocated between those categories using an appropriate causal allocator, except to the extent that:
    - The shared costs are immaterial; or
    - A causal relationship cannot be established without undue cost and effort.[86]

On the basis of the proposed reallocation put forward by CitiPower we consider that the costs involved are not immaterial. Further, there is no evidence that a causal relationship cannot be established without undue cost and effort. Accordingly we consider the allocation of these costs should be done on a causal basis.

Causal driver for cost allocation

In its proposal CitiPower did not provide a causal driver supporting its proposed reallocation of communication infrastructure opex and communication devices annual program capex from 100:0 for metering ACS:SCS to a 12:88 split. However, through further information provided we understand the reallocation is driven by meter data volumes (with the data volumes being 12 per cent to ACS and 88 per cent to SCS). CitiPower's reallocation assumes CitiPower requires power quality data from every AMI meter every 5 minutes and retrieves this data every 15 minutes.[87]

CitiPower's proposed allocation of 3G shutdown capex takes into consideration meter data volumes along with the number of 3G devices located on SCADA, which are directly attributable to standard control services (and already classified as standard control) and the number of 3G devices located on AMI access points.[88]

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85 AER Consumer Challenge Panel - Sub-Panel CCP17, Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26.

86 AER, *Victorian electricity distribution network service providers - cost allocation guidelines*, June 2008.

87 CitiPower, Powercor, United Energy, *AMI network utilisation model*, Email from 2 April 2020.

88 CitiPower, Response to Information Request IR#059 - Comms allocation - Public, 28 July 2020. This response sets out that:

- 87 per cent of 3G devices are located on SCADA, these are directly attributable to standard control and already classified as standard control
- 13 per cent of 3G devices are located on AMI access points and 88 per cent of these would be reallocated to standard control under CitiPower's proposed reallocation of shared AMI communications costs
- The proposed allocation for 3G devices located on AMI access points results in 98 per cent of 3G devices being allocated to standard control services. CitiPower proposed that, given the immateriality of the 3G to 5G upgrade costs allocated to metering, 100 per cent of these of costs be allocated to standard control services.

We consider CitiPower's proposal to use meter data volumes can be an appropriate causal driver to allocate costs. However, we disagree with the calculation of this driver. Namely, we consider CitiPower's proposed SCS meter data requirements are too high.

We accept that, in areas where there is a high penetration of distributed energy resources (DER) exporting into the network that is causing (or has the potential to cause) high and low voltage problems, networks may want to capture power quality data from a small number of sites per low voltage feeder. However, we consider that this would only represent a very small proportion of sites in those parts of the network. For other parts of the network we expect the proportion of sites that it would be useful to capture power quality data from is even lower.

More specifically, we consider it sufficient to collect power quality data from approximately one per cent of AMI meters. In arriving at the one per cent figure we have been guided by the knowledge and experience of our technical experts. For example, we have recently accepted SA Power Networks' proposed low voltage monitoring to address PV related power quality issues. This proposal involved implementing limited monitoring in targeted locations to sample the low voltage (LV) network, primarily through procurement of 'data as a service' from smart meter providers and other third parties.[89] We have determined that monitoring approximately one per cent of connection points should be sufficient to deliver the outcomes suggested by CitiPower.

Calculation of causal driver for cost allocation

Collecting power quality data from one per cent of meters instead of 100 per cent of meters would result in an allocation of 75 per cent of related costs to metering ACS and 25 per cent to SCS. We have used this as the basis for our draft decision to allocate 75 per cent of communication infrastructure opex and communication devices annual program capex to ACS metering and 25 per cent to standard control services.

Using our revised allocation of 75:25 ACS:SCS to allocate costs based on meter data volumes, we applied the same methodology as CitiPower (using meter data volumes and other inputs) to calculate our draft decision allocation of 3G capex. This results in an allocation of 10.1 per cent of 3G capex to metering alternative control services and 89.9 per cent to standard control services.

We encourage CitiPower in its revised proposal to provide more details on the volumes of data it is seeking to collect in regards to power quality management, to describe how it will use that data (the objectives), and to provide details on how it has determined the extent of data required to achieve the objectives stated.

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[89] SA Power Networks, *2020–25 Regulatory Proposal, Supporting document 5.18 LV Management Business Case*, January 2019.

Revenue

Forecast capex

Our draft decision allows for $30.82 million ($2020–21) in forecast capex for the 2012–26 regulatory control period as opposed to $30.58 million ($2020–21) proposed by CitiPower (see Table 16.17).

Table 16.17 Forecast capital expenditure ($2020–21)

Forecast Capex	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Proposal	6.33	6.23	5.15	5.65	7.22	30.58
Draft Decision	5.95	6.43	5.28	5.75	7.41	30.82

Source: CitiPower, 2021–26 Regulatory proposal - Supporting document - CP MOD 11.02 Metering PTRM and exit fees 2021–26; AER, Draft decision - CitiPower - distribution determination 2021–26 - Metering PTRM - September 2020.

The forecast capex consists of:

- capex for remotely read interval meters and transformers of $27.99 million ($2020–21)
- IT capex of $0.47 million ($2020–21)
- Communications capex of $1.98 million ($2020–21)
- Equity raising costs of $0.38 million ($2020–21).

Remotely read interval meters and transformers

This capex consists of meter hardware and installation for new connections and replacements.

Meter hardware unit costs

Our draft decision accepts CitiPower's proposed meter hardware unit costs. CitiPower submitted that it procures smart meters and communication devices from competitive service providers. We have reviewed CitiPower's meter hardware unit costs against those approved in the current period and benchmarked against other Victorian distributors. We consider CitiPower's meter hardware unit costs to be efficient.

Meter installation unit costs

We accept CitiPower's proposed meter installation costs. CitiPower's meter installation costs are calculated based on an hourly labour rate and the time taken to install the

different meter types.[90] The metering installation labour rates proposed by CitiPower are lower than those recommended by Marsden Jacob Associates (Marsden Jacob) as reasonable maximum total (all-in) rates for all labour categories, including field worker, technical specialist, engineer and senior engineer (with the exception of admin worker).[91] On this basis we accept the labour rates proposed by CitiPower.

In our 2016–20 final decision we considered that, given the tasks involved in meter replacement, the time taken to install a new connection is sufficient to cover a meter replacement.[92] While we are not able to specifically benchmark installation times as Marsden Jacob did not assess installation rates for new connections, CitiPower's proposed meter installation costs compare well to the connection charges we have accepted in this decision (see Appendix A).[93] Accordingly, our draft decision accepts CitiPower's proposed meter installation times.

Meter volumes

Our draft decision does not accept CitiPower's metering volume forecasts. Our draft decision incorporates revised base volumes, and a revised growth rate for the 2020 year, the 2021 six month extension period, and the 2021–22 year to reflect the impact of COVID-19.

To set its base 2019 opening meter population, CitiPower forecast 2018 meter volumes by trending forward the 2017 closing meter volumes, as reported to the AER in its 2017 annual RINs, by 1.2 per cent. Subsequent to CitiPower submitting its proposal in January 2020 the best available information is now the 2019 annual RINs.

We have incorporated the actual 2019 closing meter volumes into the draft decision model. This adjustment has reduced the 2020 opening meter population by 1.61 per cent. In updating the base metering volumes, we have also updated the forecast replacement volumes of legacy meters to replicate the revised remaining legacy meter volumes.

Reflecting the COVID-19 pandemic, our draft decision incorporates a downward adjustment to customer number forecasts in relation to elements of the building blocks to calculate standard control services. We consider the same reasoning for a downward adjustment to customer number forecasts also applies to meter volume forecasts. We have therefore applied the same adjustments used to revise the customer growth rates in revising the growth rates used to calculate new connections that increase the meter population. This adjustment reduces the growth rates for 2020, the 2021 six-month extension period, and the 2021–22 year, and, along with our other

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90 CitiPower, *2021–26 Regulatory Proposal - Supporting document - CP MOD 11.04, Metering cost model PUBLIC*, January 20.

91 Marsden Jacob Report, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet, Advice to the Australian Energy Regulator*, June 2020, p.11.

92 AER, *Final decision CitiPower determination Attachment 16 Alternative control services*, May 2016, p.30.

93 Marsden Jacob Associates, *Review of ancillary network services: CitiPower, Powercor, United Energy, Jemena and AusNet - Advice to the Australian Energy Regulator*, June 2020, p17.

revisions, reduces CitiPower's proposed closing meter population for the 2021–26 regulatory control period by 3.03 per cent.

AMI IT and communication costs

For our draft decision we allow for forecast IT capex of $0.47 million ($2020–21) compared to CitiPower's proposed capex of $0.52 million ($2020–21). IT capex includes an adjustment for labour contracts escalation. The downward adjustment to IT capex is driven by our decision on labour cost escalation (see attachment 6).

We allow for communications capex of $1.98 million ($2020–21). This is higher than CitiPower's proposed communications capex of 0.26 million ($2020–21). The driver of the increase in communications capex is our decision on cost allocation as discussed above.

3G shutdown capex

CitiPower proposed to allocate 100 per cent of its 3G shutdown network communications program to standard control services. We consider that the 3G communication system can be used for both metering data and distribution data and that the costs of replacing this system can therefore be shared on a causal basis. As discussed above, we consider 10.1 per cent of CitiPower's proposed 3G shutdown capex should be allocated to metering alternative control services.

Forecast opex

Our draft decision allows for $29.30 million ($2020–21) in forecast opex for CitiPower's 2021–26 regulatory control period. This is slightly higher than CitiPower's proposed opex of $28.54 million ($2020–21) and is driven by our decision on cost allocation as set out above.

We considered CitiPower's proposed metering opex by developing our own alternative forecast. To do this we used a top-down 'base–step–trend' approach. In particular, we:

- used the "revealed costs" approach as the starting point
- adjusted for any step changes if we were satisfied that a prudent and efficient service provider would require them
- trended forward the base opex (plus any step changes) by considering the forecast changes in output, price and productivity.

Each of these components to our assessment is discussed in more detail below.

Using the revealed costs approach, we take CitiPower's proposal to use 2019 as our starting point. However, we corrected CitiPower's estimated 2019 opex values with audited actual 2019 opex as per CitiPower's 2019 RIN.[94] Accordingly we use a draft decision metering opex in 2019 of $5.78 million instead of CitiPower's proposed

[94] This information can be found on the AER's website at: https://www.aer.gov.au/site-search/CitiPower%20RIN%202019.

(estimated) opex of $5.60 million ($ nominal) as our starting point. We consider revealed opex in the base year is generally a good indicator of opex requirements over the next regulatory control period because the level of total opex is relatively stable from year to year. This reflects the broadly predictable and recurrent nature of opex.

Next we considered step changes to the base opex. These are adjustments which increase or decrease a distributor's efficient expenditure. Our starting position is that only circumstances that would change a distributor's fundamental opex requirements warrant the inclusion of a step change in the opex forecast.[95] Two typical examples are:

- a material change in the business's regulatory obligations
- a prudent and efficient capex/opex substitution opportunity.[96]

CitiPower proposed two step changes to its base opex. These include:

- service classification adjustment communications of –$3.12 million ($2020–21)
- legacy meter opex of –$0.85m ($2021–22).

We do not accept CitiPower's proposed step change for service classification adjustment. This is an adjustment made in line with CitiPower's proposed re-allocation of 88 per cent of its communications infrastructure opex to standard control services. Consistent with our decision on cost allocation, we have calculated a step change for service classification adjustment communications of –$1.04 million ($2020–21).

We accept CitiPower's proposed step change for legacy meter opex but have adjusted it to reflect our calculation of inflation (from –$0.85 million over the period as proposed by CitiPower to –$0.80 million ($2020–21)). This is a negative step change to reflect the reduction in the cost of manual meter reads resulting from the expected replacement of legacy meters.[97]

Once adjusted for our decision on step changes and trended forwarded, we calculated an alternative metering opex of $29.30 million ($2020–21).

Table 16.18 provides the draft decision forecast operating expenditure for the 2021–26 regulatory control period.

Table 16.18 Forecast operating expenditure ($2020–21)

Forecast Opex	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Proposal	5.41	5.56	5.72	5.86	5.99	28.54
Draft Decision	5.71	5.78	5.85	5.93	6.03	29.30

95 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 24.
96 NER, cl. 6.5.6(e)(7).
97 Citipower, *2021–26 Regulatory Proposal 2021–26 - Jan 2020 - Public*, January 2020, p. 138.

Sources: AER, Draft decision - CitiPower - distribution determination 2021–26 - PTRM & Exit fees - September 2020; CitiPower, 2021–26 Regulatory proposal - Supporting document - CP MOD 11.02, Metering PTRM and exit fees model.

Depreciation

We accept CitiPower's proposed standard asset life of:

- 15 years for remotely read interval meters and transformers
- 7 years for IT, communications, and other metering related assets.

Our draft decision is to accept the proposed asset lives because, in each instance, they reflect the likely technical life of the assets. We consider this to arrive at an efficient outcome whereby the economic and technical lives of the assets are likely to coincide.

Opening metering asset base

We do not accept CitiPower's proposed opening metering asset base. Our draft decision accepts a metering asset base as at 1 July 2021 of $73.33 million ($ nominal) rather than CitiPower's proposed $74.28 million ($ nominal).

CitiPower's proposed metering asset base is calculated based on rolling forward the 2015 metering asset base consistent with our December 2016 Final Decision on advanced metering infrastructure transition charges applications.[98] This decision is the most recent decision with regards to Victorian AMI metering and is the correct decision from which to roll forward the asset base.[99]

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[98] Available at https://www.aer.gov.au/system/files/AER%20-%20Final%20decision%20-%20AMI%20transition%20charges%20applications%20-%20December%202016_6.pdf.

[99] In 2006, the Victorian Government mandated the roll–out of AMI for all customers consuming less than 160 MWh per annum. This involved the replacement of manually read meters with 'smart meter' technology that allows for the remote communication of a customer's half–hourly consumption data to an electricity distributor. The regulatory arrangements relating to the AMI roll-out in Victoria were initially set out in an August 2007 Order made under the Electricity Industry Act 2000 (Vic).
Under this Order, the recovery of costs incurred in relation to the AMI roll-out involved the following three processes:

- Setting AMI budgets at the beginning of the period
- Making determinations on revised charges that update for actual expenditure
- The approval of a transition charge that corrects for the difference between costs and revenues over the entirety of the 2009–15 period and which includes an assessment of any excess expenditure for the last two years of the roll-out, 2014 and 2015.

In our 2016–20 final decision we calculated an opening metering asset base value for each of the Victorian distributors based on actual capex from 2011–2013. However, we used forecast capex for 2014 and 2015, being the information available at the time.
In December 2016 we made a Final Decision on advanced metering infrastructure – transition charges applications. This represented the final step to transition the metering services previously managed under the Victorian Government's AMI Cost Recovery Order in Council (Order) into the AER's ACS Metering service classification. This decision corrected for the difference between costs and revenues over the 2009–2015

While CitiPower used our most recent decision to roll forward the asset base, CitiPower did not use the 2016 opening asset base (the first year of the current regulatory control period) and instead used the last year (2015) opening asset base from the previous regulatory control period to roll forward.

As CitiPower used the 2015 opening regulatory asset base (RAB) from our AMI transition charges final decision and not the 2016 opening RAB, CitiPower adjusted for actual capex. While this approach can be adopted, CitiPower did not include an inflation adjustment for actual capex or depreciation. If we make these corrections this results in the same 2021 opening asset base as if the 2016 opening RAB from the AMI transitional charges decision is used.

For this draft decision we have adopted the revised opening metering asset base values for 2016 as per our December 2016 AMI transition charges application decision.

Other stakeholder feedback

Table 16.19 contains a summary of additional stakeholder commentary in relation to type 5 and 6 (inc. smart metering) services, along with our responses.

Table 16.19 Summary of additional stakeholder commentary and AER response

Stakeholder submission	AER Response
Energy Consumers Australia (ECA)	
It is positive that the cost of metering for consumers in all networks will fall significantly in the 2021–26 period.	With the exception of AusNet Services, our draft decision allows for revenues lower than those proposed by each of the distributors. For these distributors this decision will therefore be expected to result in lower metering charges than those proposed for each distributor. Our draft decision for AusNet Services allows for a revenue requirement that is 1.4 per cent higher than proposed. As discussed in section 16.3.4 of attachment 16 of our Draft Decision for AusNet Services, this reflects our decision to reject AusNet Services' proposal to reallocate 50 per cent of its AMI-related IT and communications costs out of metering ACS to SCS. We also reiterate that our decision sets revenues

regulatory control period and updated the forecast 2014 and 2015 capex values (used to make our 2016–20 determination) with actual values. This decision had the effect of increasing or decreasing the revenue that could be recovered by the distributors from their customers. It also acted as an adjustment to our 2016–20 distribution determinations on the distributors' revenues for the metering (AMI) services for the 2016–2020 regulatory control period.

	for type 5 and 6 (inc. smart metering) services; it does not set specific charges. This occurs as part of the annual pricing process. Charges for a given year may be affected by adjustments to revenue provided for as part of this pricing process, and the structure of charges proposed by the distributor to recover these revenues.
We are slightly concerned about the absence of planning for metering replacement in the future. When questioned, all networks responded saying that wide spread replacement of meters would not be required for another 10 years (circa 2030). We are satisfied that a 10 year timeframe provides sufficient time to develop a replacement strategy.	We note the ECA's comments, and suggest the distributors give consideration to this during the 2021−26 regulatory control period.
AusNet Services explicitly refers to the costs of upgrading its meter fleet from 3G to 4G in its metering revenue proposal. The other networks who face the same issue only refer to the 3G upgrade in their costs for distribution business. Given that all networks have allocated meter costs to the distributors it is important that all networks attribute the telecommunication upgrade in a manner consistent with their cost allocation methodologies. This will ensure that metering costs between networks remain more comparable.	AusNet Services proposed a 50:50 shared allocation of 3G upgrade capex between metering ACS and SCS, which we have accepted in our draft decision.[100] Jemena proposed to allocate 100 per cent of the capex for the upgrade of the 3G elements of its AMI communications network to ACS, which we have accepted in our draft decision.[101] CitiPower, Powercor and United Energy allocated 100 per cent of their 3G upgrade capex to SCS.[102] As set out in our draft decisions for CitiPower, Powercor and United Energy our decision is to allocate some of CitiPower's, Powercor's and United Energy's 3G capex to metering alternative control services In arriving at our draft decisions we have had regard to the allocations and any supporting justifications provided by each distributor, with consideration given to each distributor's cost allocation methodology where required. While the allocations may differ between distributors, our approach has focussed on satisfying ourselves that any allocations away from ACS are in accordance with the distributor's cost allocation methodology.

[100] AusNet Services, *Electricity Distribution Price Review 2021–25 Appendix 9D*, January 2020, p.4–6.

[101] Jemena, *Information Request 45 – Q1*, 17 July 2020, p. iv.

[102] CitiPower, *2021–26 Regulatory proposal - Supporting document - CP MOD 6.03 - AMI comms - PUBLIC*, January 2020; Powercor, *2021–26 Regulatory proposal - Supporting document - PAL MOD 6.03 - AMI comms - PUBLIC*, January 2020; United Energy, *2021–26 Regulatory proposal - Supporting document - UE MOD 6.03 - AMI comms - PUBLIC*, January 2020.

United Energy is unusual in its metering cost outcomes. It is unclear why United is able to provide the same service for considerably less cost than its peers. We note the allocation of metering data cost between the distributor and the metering business is the same as Citipower and Powercor (88%:12%). We would welcome more information on this matter to understand whether other companies can also provide services for this lower price.	We agree that it is important to consider the efficiency with which distributors can offer similar services. Our assessment approach includes an assessment of the inputs proposed by the various distributors. We note that this does not always result in the selection of a single rate - for example, for labour rates (as discussed in detail in section 16.1) we may accept a range of labour rates provided they fall below the maximum efficient labour rates identified by our consultant. In benchmarking the cost inputs and performance of different distributors, we also take into consideration factors such as the concentration or dispersion of customers on the distributor's network (which may affect service times). Our assessment has resulted in lower revenues for each distributor than those proposed - with the exception of AusNet Services, where the driver of the increase in revenues is our rejection of the proposed reallocation of costs from ACS to SCS. More detail on our assessments (including benchmarking of inputs) of type 5 and 6 (inc. smart metering) revenues for each distributor is set out in the draft decision documents for each distributor.
Vector	
The Final Framework & Approach Paper for electricity distributors in Victoria for the 2021–26 regulatory control period (dated January 2019), which informed the Issues Paper, noted the Consumer Challenge Panel's suggestion that analysis be undertaken to determine whether net benefits arise from harmonising Victorian metering arrangements with the rest of the NEM (page 111). While recognising that this is a matter of jurisdictional prerogative (as noted by the AER), we strongly share the Panel's perspective and encourage the Victorian Government and the relevant regulators to actively consider this suggestion so it can inform this ongoing distribution determination process and related decision-making processes.	We note Vector's recommendation. However, we also note that the Victorian government has decided not to introduce metering contestability in Victoria at this stage.[103]

[103] Department of Environment, Land, Water and Planning, *Victorian Government Submission on the electricity Distribution Price Review*, June 2020, p.4.

We would find it useful if the Draft Determination the AER will issue following this consultation would provide some guidance for stakeholders on potential changes to the regulatory framework for metering in Victoria that could be triggered by the above reviews/consultations. The Draft Determination could, for example, outline the initial steps the AER will undertake should the Victorian Government or any future state government decide to facilitate the introduction of competition in metering in the state.	As noted in our response above, the Victorian government has decided not to introduce metering contestability in Victoria at this stage. It considers the primary value of AMI has been as a network device and substantial operational and safety benefits have been realised to date. In its review the Victorian government found that introducing contestability at this time may not unlock unrealised benefits to consumers and may potentially diminish some of the current benefits that have been realised.[104] Our draft decision recognises that AMI meters can have wider network benefits and that some IT and communication costs could be shared between ACS and SCS. In making our decision we have been mindful to seek an appropriate allocator to ensure prices reflect underlying costs, should there be a move to contestability in the future. In regards to the steps the AER would undertake should there be a future decision to introduce metering contestability in Victoria, it is difficult to provide guidance in the absence of a specific proposal to introduce contestability. Interested stakeholders may wish to review the approach the AER took in other jurisdictions where metering contestability has already been introduced.

Sources: Department of Environment, Land, Water and Planning, *Victorian Government Submission on the electricity Distribution Price Review*, June 2020; Spencer & Co Business advisory services, *Report to Energy Consumers Australia, A review of Victorian Distribution Networks Regulatory Proposals 2021–26*, June 2020, p.37; Vector, *Submission on the AER's Issues Paper on Victorian Electricity Distribution Determination for 2021 to 2026*.

16.2.4.2 Metering exit fees

Form of control

We maintain our final F&A position[105] to apply price caps to auxiliary metering services (such as metering exit fees) as the form of control. This allows CitiPower to charge according to a schedule of prices, approved by the AER, in the first year of the regulatory control period, with these prices being escalated by CPI and an X-factor for subsequent years.

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[104] ibid.

[105] AER, *Final Framework and Approach – AusNet Services, CitiPower, Jemena, Powercor and United Energy Regulatory control period commencing 1 January 2021*, Section 2.1, p 54.

The control mechanism formula is set out in attachment 14 of this draft decision. The prices for the first year, and X-factors for subsequent years, are set out in Appendix B of this attachment.

Charges

Our draft decision is to reject CitiPower's proposed exit fees. Our draft decision exit fees have been revised to reflect the revisions we made for this draft decision to the following inputs used to calculate exit fees:

- CitiPower's opening metering asset base value as of 1 July 2021 (as per our draft decision as discussed in section 16.2.4.1)
- the forecast metering capex and opex (as per our draft decision discussed in section 16.2.4.1)
- real labour cost escalators (as per our draft decision discussed in Attachment 6 section 6.4.4).

As a result of these changes, our draft decision metering exit fees are lower than those proposed by CitiPower. Our draft decision metering exit fees for 2021−22 are set out in Appendix B. Prices for subsequent years will be determined by the control mechanism formula set out in attachment 14. Our draft decision on the X-factors for metering exit services is also set out in Appendix B.

16.3 Public lighting services

16.3.1 Draft decision

For public lighting, our draft decision is to largely accept CitiPower's proposal with updates to the WACC, CPI and wage growth assumptions, adjustments to the proposed light-emitting diode (LED) luminaire costs and minor corrections to the public lighting model.

Our draft decision prices for the first year of the regulatory control period are set out in Appendix C. Prices for subsequent years of the regulatory control period will be escalated by CPI growth and X-factors. A summary of the X-factors is provided in Appendix C; further explanation is provided in section 16.3.4.

16.3.2 CitiPower's proposal

For public lighting services, Citipower proposed:[106]

- Continuing to deploy more energy-efficient lights across its network, including minor and major roads. Citipower has proposed to increase its LED deployment from

[106] Citipower, *2021– 26 Regulatory proposal*, 31 January 2021, p 166.

47 per cent in 2021 to 78 per cent by end of 2021–26 regulatory control period.[107] While customers can choose to opt for bulk replacements, Citipower has not proposed a distributor-led bulk replacement program. It has proposed spot replacement to LED lights for any failed lights across its network to minimise costs for customers.

- Total revenues for the 2021–26 regulatory control period remain broadly stable in real terms when compared to the current regulatory control period.[108]
- Small nominal price increases (2−7 per cent) for LED lights in the first year of the regulatory control period, but more significant price increases for non-LED lights (26−60 per cent). For subsequent years, Citipower proposed increasing the prices of all light types by CPI growth.

16.3.3 Assessment approach

To determine prices for public lighting services we assessed CitiPower's public lighting model, considered historical data and benchmarked proposed costs against other NEM distributors and against independent data and information as relevant. Specifically, we assessed proposed labour rates, luminaire prices, other input assumptions and stakeholder submissions to derive proposed public lighting charges. We also updated model parameters where appropriate.

16.3.4 Reasons for draft decision

Form of control

We maintain our final F&A position[109] to apply price caps to individual public lighting services as the form of control. This allows Citipower to charge according to a schedule of prices, approved by the AER, in the first year of the regulatory control period, with these prices being escalated by CPI and an X-factor for subsequent years.

The control mechanism formula is set out in attachment 14 of this draft decision. The control mechanism is implemented through a public lighting model. Compliance with the control mechanism is to be demonstrated through the annual pricing proposal by updating the forecast CPI for the actual CPI each year. This approach is consistent with the arrangements for Citipower in the currently regulatory control period, and with other Victorian distributors.

A summary of our draft decision X-factors is provided in Appendix C. For full details, see our draft decision public lighting model for Citipower.

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[107] Citipower, *CP MOD 13.01 – Public lighting Model – Jan2020 – Public*, 31 January 2020, "DNSP Inputs General" Tab, O41:T76.

[108] Citipower, *CP MOD 13.01 – Public lighting Model – Jan2020 – Public*, 31 January 2020, "Cashflow Summary" Tab; Annual RINs - Economic benchmarking template 3.1 for the period 2016−2019.

[109] AER, *Final Framework and Approach – AusNet Services, CitiPower, Jemena, Powercor and United Energy: Regulatory control period commencing 1 January 2021*, Section 2.1, p 54.

Modelling

For the draft decision we have amended CitiPower's public lighting model to incorporate updated CPI growth, WACC and wage growth figures, consistent with those used for standard control services.

For a discussion of the WACC used in our draft decision see Attachment 3 − Rate of return. Our draft decision substitutes the wage growth forecasts provided by Citipower with those provided by the AER's consultant. For a discussion of the reasons behind this decision see Attachment 6 − Operating expenditure.

We also reviewed the models provided by Citipower and made the following adjustments:

- Introducing 2021 six-month extension period columns for calculating the RAB, depreciation and capital expenditure. This is because CitiPower's public lighting model had not accounted for expenditure for the initial six months of 2021.
- Correcting inconsistencies between the proposed operating and maintenance (O&M) data and annual RIN data. This annual RIN data is submitted after the regulatory proposals and is provided on a standardised basis and subject to various levels of assurance. We therefore generally give preference to data from the annual RINs where available.
- Correcting the unitisation codes used to apportion the RAB and regulatory depreciation to different light types. This correction has had minimal impact on price movements.

In addition, we note that Citipower has proposed to introduce three new Category V LED lights.[110] These lights are currently part of United Energy – General Service Charge Pricing Schedule 2020 and are offered as negotiated services.[111] While these prices are for reference and comparison (and not used to derive any prices in the forthcoming regulatory control period) we have adjusted the model to show the prices provided in Citipower – General Service Charge Pricing Schedule 2020.

LED luminaire unit costs

The increasing use of LED lighting reflects the efficiencies offered relative to older-style lighting. LED lights are both typically more energy efficient and have lower maintenance costs than their earlier counterparts. These twin efficiencies create benefits for customers that tend to offset the typically higher cost of the LED luminaire.

The discussion of stakeholder submissions in the section below sets out feedback supporting transition to LED lighting where it is efficient to do so. Given the increasing use of LED luminaires in public lighting networks, we have paid close attention to the unit cost of the inputs and the resulting LED public lighting charges. We benchmarked

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[110] Category V lights are typically installed on highways and major roads.

[111] *Citipower 2020* – Schedule of charges, available on Citipower's website.

the unit cost of LED luminaires proposed by Citipower against those for other distributors (as shown in their proposals or as updates via information requests).

Citipower performed favourably relative to the other distributors for its proposed Category P[112] luminaire unit costs. However, updated information from Jemena indicated that lower unit costs could be obtained for Category V L1 and L2 LED luminaires, and we found Powercor's Category V L4 luminaire unit cost to be lower. For our draft decision, we have amended CitiPower's LED luminaire unit costs to reflect these benchmarked prices, as shown in Table 16.20.

Table 16.20: LED Luminaire unit costs

LED Category	Proposed	Draft Decision
Category P	$205	$205
Category V L1	$565	$402
Category V L2	$621.50	$427
Category V L4	$706.25	$650.88

Sources: Citipower, CP MOD 13.01 – Public lighting Model, 31 January 2020; Powercor, 2021–26 Regulatory proposal – PAL MOD 13.01 - Public lighting, 31 January 2020; Jemena Information Request 56, Q4, 18 August 2020, p. 8.

We consider it is important that we benchmark against the lowest available LED luminaire unit costs. This reflects the expectations for increasing use of LED lights (and therefore that these will reflect a greater proportion of additions to the regulatory asset base) and our observation that LED luminaire unit costs have tended to decrease since the initial introduction of this technology in the public lighting sector. In setting prices for a 5-year period, we therefore consider it is important that our decision reflect the most competitive input costs available.

Unit cost of PE Cell for Category V lights

A submission from Local Government Response (LGR) supported Citipower and other distributors who have included smart PE cells for Category V lights in their public lighting models. The LGR submission stated that these smart PE cells, along with Control Management systems (CMS), together have the potential to reduce overall costs and energy consumptions for public lighting customers.[113]

We note that the unit cost of a Category V PE cell was around $22.37 in CitiPower's approved public lighting cost models for the 2016–20 regulatory determination. On

[112] Category P lights are typically installed on minor roads and streets.

[113] Victorian Greenhouse Alliances, *Local Government Response to Victorian Electricity Distribution Price Review (EDPR) 2021–26*, 25 May 2020, p 11.

CitiPower's proposed public lighting model for the 2021–26 regulatory control period, the cost of a Category V PE cell has increased to $87.71.

While we acknowledge that the LGR submission cites the benefits of rolling out smart PE cells, we also note that CitiPower's proposal does not clearly specify that it has switched to smart PE cells for Category V lights or provide any justification on how it has arrived at the proposed unit price. While we have accepted the proposed Category V PE cell cost in our draft decision on the basis of the support provided by the LGR submission, we recommend that CitiPower's revised proposal address this issue and provide an explanation for the increase in the Category V PE cell unit price.

Stakeholder submissions

Victorian Department of Environment, Land, Water and Planning

DELWP submitted that the replacement of inefficient mercury vapour street lights is consistent with their commitment of reducing demand and energy costs for public lighting customers and end users. It further adds that it supports public lighting customers reducing their greenhouse gas emissions and energy costs through bulk LED replacement programs. DELWP considers that there is scope for the electricity distribution businesses to support competitive costs for these bulk upgrades.[114]

We acknowledge DELWP's support for the deployment of LED luminaires and the many benefits they offer. Given the increasing uptake of LED offerings, we have paid particular attention to the LED offerings in our assessment of the Victorian distributors' proposals.

The Victorian distributors have proposed various approaches to the replacement of mercury vapour lighting. In addition to other efficiency benefits, this has been prompted by the Australian Government signing the "Minamata Convention on Mercury" in October 2013, which became effective in August 2017. Under the Convention, the import, export and manufacture of mercury vapour public lights will be banned from 1 January 2021.[115]

Citipower has proposed to replace any failed mercury luminaires with an equivalent LED light alternative. Interested Citipower customers would also be able to consider bulk replacements.[116]

More generally, with the combination of spot replacement and customer-initiated bulk replacements, Citipower expects the deployment of LEDs to increase from 47 per cent in 2021 to 78 per cent (including major and minor roads).[117]

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[114] Department of Environment, Land, Water and Planning (DELWP), *Victorian Government submission on the electricity distribution price review 2021–26*, 29 May 2020, p 5.

[115] Australian government, Department of Agriculture, Water and Environment website, Minamata Convention on Mercury, as accessed on 7th September 2020.

[116] Citipower, *2021–26 Regulatory proposal,* 31 January 2020, p 166.

[117] See Section 16.3.2.

Local Government Response

The LGR, a group comprising Victorian greenhouse alliances, public lighting group and member councils, provided a detailed submission.[118] In relation to public lighting, the LGR made a number of recommendations. A summary of the relevant recommendations and our response is contained in Table 16.21, with more detail on benchmarking set out below.

Table 16.21 - Summary of LGR recommendations and AER Response

LGR recommendation	AER response
All distributors should replace current streetlights with LEDs when assets fail. This should be built into all relevant cost models for this coming period	As noted above, Citipower has proposed that any failed non-LED lights will be replaced by efficient lights. CitiPower's model incorporates a projected increase in LED use throughout the next regulatory control period.
Customers should determine the approach to bulk replacements to LEDs	We note the LGR's position. Citipower states in its proposal that customers will have the choice to make decisions for bulk replacement.
All old lights should be fully recycled	We note the LGR's position and encourage public lighting customers to discuss this issue with Citipower.
Distributors should be required to invest in a smart lighting Control Management System (CMS) to enable customers to effectively manage any smart lighting assets they install	The LGR stated that Citipower has included smart PE cells for all Category V lights (see section above on unit costs of PE cells for Category V lights). We encourage customers to work with Citipower for any future asset enhancements such as CMS.
The AER should request that a review of the Victorian Public Lighting Code be implemented by the Victorian Essential Services Commission (ESC) in time to influence (where relevant) the next Victorian EDPR	We note the extensive work done by the LGR and the survey results presented that indicate stakeholder support for a review of the Public Lighting Code. We encourage the LGR, public lighting customers and the Victorian distributors to discuss their preferences for a review of the Public Lighting Code with the Essential Services Commission of Victoria.

[118] Victorian Greenhouse Alliances, *Local Government Response to Victorian Electricity Distribution Price Review (EDPR) 2021–26*, 25 May 2020, pp 11-23.

LGR recommendation	AER response
Ensure all costs models utilise efficient pricing and assumptions.	See discussion relevant to Citipower below.

Source: Victorian Greenhouse Alliances, *Local Government Response to Victorian Electricity Distribution Price Review (EDPR) 2021–26*, 25 May 2020, pp 11-23.

One of the issues raised in the LGR submission was a concern about the efficiency of various inputs and assumptions used by distribution businesses in deriving public lighting charges. The LGR submission requested we consider benchmarking and/or standardising the following inputs:

- Labour rates
- Elevated platform and patrol vehicle rates
- Pole inspection rates
- Replacement and repair rates
- Hours per day
- LED luminaire failure rates
- LED luminaire unit costs (and specifically reliance on market tested prices).

We have assessed CitiPower's public lighting proposal and the corresponding models with a view to considering the LGR's suggested benchmarking of inputs. We consider that CitiPower benchmarks well with respect to labour rates, elevated platform and patrol vehicle rates, pole inspection rates, repair and replacement rates and LED luminaire failure rates.

As noted above, we consider that CitiPower's proposed LED luminaire unit costs do not represent the most efficient pricing available for Category V LED luminaires. We found that revised prices provided by Jemena were lower for Category V L1 and L2 light types, while Powercor's prices for Category V L4 luminaires were lower. We have accordingly adjusted the prices for these lights.

In considering the standardisation of hours per day, we note that all Victorian distribution businesses have previously used 8 hours per day in their public lighting models for the previous regulatory determination. For the 2021–26, all distribution businesses except AusNet Services have continued to propose 8 hours per day in their public lighting models.

The LGR submission references a 2010 Impaq Consulting report stating that 7.5 hours should be used by all distribution businesses as a standard for the input of available hours per day for public lighting services.[119] The Impaq Consulting report recommends

[119] Impaq Consulting Report – *Review of rates for the proposed ACS – 25 May 2010*. The AER used this report in assessing of ACS charges for the 2011–15 regulatory determination.

7.5 hours on the basis that distributors operate on 9-day-per-fortnight basis, but noted that 8.33 hours was equivalent for a 10-day fortnight. The total hours per fortnight with either of the above approaches lead to approximately similar hours. We therefore consider that 8 hours per day is reasonable and have accepted this assumption in our draft decision for Citipower.

Victorian Community Organisations

A joint submission from Victorian community organisations stated that, while in principle they support the transition to more efficient lighting, they note that more efficient lighting is often more expensive to supply and install than the existing approaches. They requested the AER to create a guideline to provide a consistent approach for distributors to apply when assessing whether to change public lighting to more efficient lighting, including explicit consideration of how cost of electricity calculations would feed into this decision.[120]

Through our recent regulatory determinations we have observed that many stakeholders and distributors support the adoption of LED lights. The reduction in energy consumption and reduced maintenance costs, coupled with declining LED unit costs, are continuing to make these lights more attractive and affordable.

We acknowledge that public lighting customers may have differing views about the merits of replacing non-LED lights with LED lights upon failure, or of the benefits of bulk replacement programs. We consider that the regulatory process, with its consideration of stakeholder feedback on distributors' proposals and revised proposals (in addition to any distributor-led consultation carried out prior to or during the regulatory process), provides an appropriate avenue to consider whether public lighting customers and other stakeholders consider that the appropriate balance has been reached in the distributors' proposed approach to the rollout of LED lighting. We encourage public lighting customers to provide their views through these consultation processes, which help to inform our decisions on public lighting pricing.

We consider that active dialogue between public lighting customers and distributors, supported by the framework of the regulatory process, is more likely to deliver outcomes sought by public lighting customers in each relevant distribution zone than a general guideline.

Price movements

Overall, CitiPower's proposed revenue for the 2021–26 regulatory control period is relatively stable when compared with the estimated revenues for the current regulatory control period.[121]

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[120] Victorian community organisations, *2021–26 Victorian EDPR – Joint submission from Victorian community of organisations - summary document*, Section 11 – Public lighting, May 2020, p 79.

[121] AER analysis; compares CitiPower's Economic Benchmarking RINs for 2016 to 2019 and estimated 2020 revenues with the revenue projections proposed for the 2021─26 regulatory control period in CitiPower's proposed public lighting model.

The amendments we have made in our draft proposal have resulted in a small decrease in revenues for the five year regulatory control period from $18.16 million to $17.69 million (nominal), which has the average effect of reducing the first-year movements in public lighting prices relative to CitiPower's proposal.

Our amendments have also led to some further adjustments to prices relativities. For example:

- We corrected the unitisation codes used to apportion RAB values and depreciation to various light types based on their unit costs. The unitisation codes applied in CitiPower's public lighting model were incorrect.
- We substituted LED luminaire costs with lower prices by comparing with other distributors and the most recent market rates.

Taking these adjustments into account, our draft decision prices for selected public lights as compared to prices proposed by Citipower are:

- $146.87 for Mercury Vapour (MV) 125 watt lights compared to $159.68 proposed by Citipower (8 per cent lower)
- $31.80 for Category P 18W LED lights compared to $30.38 proposed by Citipower (5 per cent higher)
- $61.80 for Category V L1 LED lights compared to $60.98 proposed by Citipower (1 per cent higher).

Origin Energy submitted that Citipower is proposing significant increases in public lighting charges in the first year of the regulatory control period, highlighting a 55 per cent increase in Mercury Vapour (MV) 125 watt prices. Origin Energy requested further information on the proposed price increases.[122]

We have observed that the price movement for MV 125 watt lights is significant for Citipower in the first year of the regulatory control period. This can be seen as reflecting the transition from non-LED to LED luminaires. As the volumes of traditional older technology light types decrease across the public lighting network, the recovery of RAB (regulatory asset base) occurs through the remaining non LED lights. This capex recovery creates higher price movements for non-LED traditional lights compared to the previous regulatory control period. As stated, our draft decision with the above listed changes has reduced the price movement relative to CitiPower's proposal.

On the basis of our analysis of CitiPower's models and consideration of stakeholder feedback, we consider that these draft decision prices will provide Citipower with an opportunity to recover the efficient costs of providing its public lighting services and will

[122] Origin Energy, *Submission to Victorian electricity distributors' regulatory proposals*, 2 June 2020, p 8.

assist in supporting the transition to more energy-efficient forms of lighting with the associated benefits for customers.

The draft decision prices are set out in Appendix C.

A Ancillary network services prices

Prices in this Appendix A are in $2020–21. We will incorporate actual inflation in our final decision to derive 2021–22 prices in nominal terms.

Table 16.22 Fee based ancillary network services prices for 2021–22 ($2020–21), draft decision – business hours

Service description	CitiPower proposal	AER draft decision
Basic connection services		
New connection where CitiPower is the metering coordinator		
Single phase	$549.08	$503.57
Multi-phase DC	$656.26	$601.87
Multi-phase CT	$2,744.50	$2,517.02
New connection where CitiPower is not the metering coordinator		
Single phase	$528.11	$484.34
Multi-phase DC	$635.29	$582.63
Multi-phase CT	$2,342.96	$2,148.76
Metering and network ancillary services		
Meter/NMI /site investigation	$388.84	$356.61
Meter accuracy test	$448.65[1]	$411.46
Meter accuracy test - additional meters	NA	To be proposed by CitiPower[2]
Special reading	$32.07	$29.41
Remote meter reconfiguration	$59.59	$54.65
Manual re-energisation (incl customer transfer)	$38.99	$35.76
Manual re-energisation (same day)	$50.07	$45.92
Manual de-energisation	$39.58	$36.30
Failed field visit (simple tasks)	NA	$29.41[3]
Isolation of supply or reconnection, excluding HV (single)	$345.53	$316.89
Isolation of supply and reconnection after isolation, excluding HV (same day)	$635.71	$583.01
Standard alteration, <60 minutes	$597.09	$547.60
Complex alteration, > 60 minutes	$742.13	$680.62
Failed field visit (complex tasks)	$372.03	$341.20

Notes: 1. Adjusted downwards as discussed in section 16.1.4.3.

2. We require CitiPower to continue offering this charge as discussed in section 16.1.4.3.
3. We require CitiPower to include this new fee as discussed in section 0.

Table 16.23 Fee based ancillary network services prices for 2021–22 ($2020–21), draft decision – after hours

Service description	CitiPower proposal	AER draft decision
Basic connection services		
New connection where CitiPower is the metering coordinator		
Single phase	$608.08	$608.08
Multi-phase DC	$715.27	$715.27
Multi-phase CT	$3,378.51	$3,378.51
New connection where CitiPower is not the metering coordinator		
Single phase	$583.46	$583.46
Multi-phase DC	$690.64	$690.64
Multi-phase CT	$2,660.58	$2,660.58
Metering and network ancillary services		
Meter/NMI/site investigation	$444.17	$444.17
Meter accuracy test	$514.45[1]	$514.45
Manual re-energisation (incl customer transfer)	N/A[2]	N/A
Isolation of supply or reconnection, excluding HV (single)	$441.26	$441.26
Standard alteration, <60 minutes	$762.52	$762.52
Complex alteration, > 60 minutes	$947.74	$947.74
Failed field visit (unable to perform customer requested task)	$429.79	$429.79

Notes: 1. Adjusted downwards as discussed in section 16.1.4.3.
2. Removed as discussed in section 16.1.4.4.

Table 16.24 Non-exhaustive list of ancillary network services provided on a quotation basis

Description of service
Complex supply abolishment
Rearrangement of network assets at customer request, excluding public lighting assets
Audit design and construction
Specification and design enquiry
Elective undergrounding

Description of service
High load escorts—surveying and lifting overhead lines
High profile antenna installation
No-go zone safety-related services
Reserve feeder maintenance
Alteration and relocation of public lighting assets
New public lighting services including greenfield sites and new light types
Access to network data
Complex isolations and alterations, including HV
Alterations to the shared network distribution assets

Source: CitiPower, Regulatory proposal 2021–26, January 2020, pp. 145–146.

Table 16.25 Quoted service hourly labour rates for 2020–21, draft decision ($2020–21)

	AER draft decision maximum total hourly rate - Business hours	AER draft decision maximum total hourly rate - After hours
Administration	92.73	NA
Field worker	171.75	223.60
Technical	171.75	251.24
Engineer	150.69	244.10
Senior engineer	197.05	318.74

Table 16.26 AER draft decision on X-factors for each year of the 2021–26 regulatory control period for ancillary network services (per cent)

	2022–23	2023–24	2024–25	2025–26
X-factor	0.2498	0.0726	−0.3673	–0.9966

Source: AER analysis.

Note: We do not apply an X-factor for 2020–21 because we set the 2020–21 ancillary network service prices in this determination.

To be clear, the labour escalators in this table are operating as de facto X-factors. Therefore, positive labour escalators are represented as negative in this table and vice versa.

B Type 5 and 6 (incl. smart metering) metering exit fees

Table 16.27 AER draft decision exit fees ($ nominal)

Meter type	2021–22
AMI single phase	303.95
AMI three phase	362.09
AMI three phase current transformer	710.65
Basic or MRIM	53.12

Source: AER, Draft decision - CitiPower - distribution determination 2021–26 - PTRM & Exit fees - September 2020.

Table 16.28 AER draft decision on X-factors for each year of the 2020–25 regulatory control period for metering exit fees (per cent)

X-factor	2022–23	2023–24	2024–25	2025–26
AMI single phase	5.66	8.11	8.95	8.29
AMI three phase	6.23	8.41	9.33	8.76
AMI three phase current transformer	7.71	9.19	10.35	10.03
Basic or MRIM	0.24	0.07	-0.36	-0.98

Source: AER, Draft decision - CitiPower - distribution determination 2021–26 - PTRM & Exit fees - September 2020.

Note: We do not apply an X-factor for 2020–21 because we set the 2020–21 metering exit fees in this determination.

C Public lighting prices

Table 16.29: Public Lighting Prices - Draft Decision (nominal)

Citipower Lights	Proposed for 2021–22	Draft Decision for 2021–22
Mercury Vapour 80 watt	104.87	92.95
Sodium High Pressure 150 watt	149.07	137.85
Sodium High Pressure 250 watt	151.06	140.20
Fluorescent 20 watt	196.65	184.98
Fluorescent 40 watt	192.24	185.91
Mercury vapour 50 watt	135.96	131.99
Mercury vapour 125 watt	159.68	146.87
Mercury vapour 250 watt	120.91	117.77
Mercury vapour 400 watt	122.13	119.17
Sodium high pressure 70 watt	218.22	197.06
Sodium high pressure 100 watt	146.99	140.61
Sodium high pressure 220 watt	146.97	140.48
Sodium high pressure 360 watt	146.81	143.01
Sodium high pressure 400 watt	163.90	154.22
Metal halide 70 watt	215.41	197.06
Metal halide 100 watt	226.25	216.43
Metal halide 150 watt	231.80	217.80
Metal halide 250 watt	176.02	168.24
Metal halide 400 watt	176.02	168.24
Metal halide 1000 watt	277.62	250.96
T5 2X14W	58.61	58.78
T5 2X24W	57.79	57.96
CF32	56.77	56.94
CF42	56.78	56.94
Category P LED Standard Output	30.38	31.80
Category P LED High Output	30.34	31.80
Category V LED L1 Standard Output	60.98	61.87
Category V LED L2 Medium Output	67.10	68.06
Category V LED L4 High Output	76.27	77.34

Table 16.30: Public lighting - X factors

Citipower Lights	2022–23	2023–24	2024–25	2025–26
Mercury Vapour 80 watt	3.3632%	0.2406%	-0.5887%	-1.3244%
Sodium High Pressure 150 watt	3.2974%	5.3177%	1.3263%	1.1456%
Sodium High Pressure 250 watt	3.3165%	6.0667%	1.2887%	1.0996%
Fluorescent 20 watt	3.3632%	0.2406%	-0.5887%	-1.3244%
Fluorescent 40 watt	3.3632%	0.2406%	-0.5887%	-1.3244%
Mercury vapour 50 watt	3.3632%	0.2406%	-0.5887%	-1.3244%
Mercury vapour 125 watt	3.3632%	0.2406%	-0.5887%	-1.3244%
Mercury vapour 250 watt	3.3165%	6.0667%	1.2887%	1.0996%
Mercury vapour 400 watt	3.3165%	6.0667%	1.2887%	1.0996%
Sodium high pressure 70 watt	3.3632%	0.2406%	-0.5887%	-1.3244%
Sodium high pressure 100 watt	3.2974%	5.3177%	1.3263%	1.1456%
Sodium high pressure 220 watt	3.3165%	6.0667%	1.2887%	1.0996%
Sodium high pressure 360 watt	3.3165%	6.0667%	1.2887%	1.0996%
Sodium high pressure 400 watt	3.3165%	6.0667%	1.2887%	1.0996%
Metal halide 70 watt	3.3632%	0.2406%	-0.5887%	-1.3244%
Metal halide 100 watt	3.2974%	5.3177%	1.3263%	1.1456%
Metal halide 150 watt	3.2974%	5.3177%	1.3263%	1.1456%
Metal halide 250 watt	3.3165%	6.0667%	1.2887%	1.0996%
Metal halide 400 watt	3.3165%	6.0667%	1.2887%	1.0996%
Metal halide 1000 watt	3.3165%	6.0667%	1.2887%	1.0996%
T5 2X14W	3.2033%	5.3185%	7.2666%	9.1105%
T5 2X24W	3.2033%	5.3185%	7.2666%	9.1105%
CF32	3.2033%	5.3185%	7.2666%	9.1105%
CF42	3.2033%	5.3185%	7.2666%	9.1105%
Category P LED Standard Output	3.8897%	6.0076%	7.9202%	9.7440%
Category P LED High Output	3.8897%	6.0076%	7.9202%	9.7440%
Category V LED L1 Standard Output	3.5371%	5.7000%	7.5965%	9.4138%
Category V LED L2 Medium Output	3.5371%	5.7000%	7.5965%	9.4138%
Category V LED L4 High Output	3.5371%	5.7000%	7.5965%	9.4138%

Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
ACS	alternative control services
AER	Australian Energy Regulator
AMI	advanced metering infrastructure
CAM	cost allocation method
capex	capital expenditure
CCP17	Consumer Challenge Panel, sub-panel 17
CMS	control management system
CESS	capital expenditure sharing scheme
CPI	consumer price index
distributor	distribution network service provider
DSO	distribution system operator
DELWP	Department of the Environment, Land, Water and Planning (Victoria)
ECA	Energy Consumers Australia
EMCa	Energy Market Consulting Associates
ESC	Essential Services Commission (Victoria)
F&A	framework and approach
LED	Light Emitting Diode
LGR	Local Government Response
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
NPV	net present value
NSP	network service provider

Shortened form	Extended form
opex	operating expenditure
PTRM	post-tax revenue model
RAB	regulatory asset base
RIN	regulatory information notice
SCS	standard control services
WACC	weighted average cost of capital