Draft Decision

Endeavour Energy Electricity Distribution Determination 2024-29 1 July 2024 to 30 June 2029

Attachment 16 Alternative Control Services

September 2023

AUSTRALIAN ENERGY REGULATOR

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16 Alternative control services

This attachment sets out our draft decision on prices Endeavour Energy is allowed to charge customers for the provision of the following alternative control services: ancillary network services and public lighting. We also make a draft decision on metering, which we classify as an alternative control service, in Attachment 20.

Alternative control services are customer specific or customer requested services and so the full cost of the service is attributed to a particular customer, or group of customers, benefiting from the service.

We set service specific prices to provide a reasonable opportunity to the distributor to recover the efficient cost of each service from customers using that service. This is in contrast to standard control services where costs are spread across the general network customer base.

16.1 Ancillary network services

Ancillary network services are non-routine services provided to individual customers as requested. Our F&A paper outlines several types of services that meet this broad definition.[1]

Ancillary network services are charged to customers on a user-pays approach which are either charged on a fee or quotation basis, depending on the nature of the service.

We determine price caps for fee-based services for the 2024–29 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, such as disconnections and special meter reads.

By comparison, prices for quoted services are based on the quantities of labour and 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 quoted services.

16.1.1 Draft decision

16.1.1.1 Form of control for 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.

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[1] See AER, *Final framework and approach for Ausgrid, Endeavour Energy and Essential Energy for the 2024-29 regulatory control period*, July 2022, p. 5–6. Our F&A paper outlines several types of services that can be considered as meeting this broad definition such as network ancillary services, basic connection services and non-routine metering services.

Under a price cap form of control, we set a schedule of price caps for fee-based services and maximum labour rates for quoted services for the first year of the period, 2024–25. For each year thereafter, we adjust the price caps and maximum labour rates for inflation, the X factor,[2] and any relevant adjustments. This mechanism is set out in greater detail in section 14.5.2 of Attachment 14 – Control mechanisms.

As ancillary network services have a high share of labour and labour-related inputs, we use labour price growth forecasts as the ancillary network services X factor. Consistent with our previous decisions, we derived the X factor by averaging wage price index growth forecasts from KPMG (provided by the AER) and BIS Oxford Economics (provided by the distributor).[3] Our draft decision X factors for ancillary network services are set out in appendix A.

16.1.1.2 Fee-based and quoted services

Our draft decision does not accept Endeavour Energy's proposal as submitted. Based on our analysis and updated inputs, our draft decision is to:

- Substitute Endeavour Energy's proposed X factors for our draft decision labour price growth forecasts (see Table A.1 in appendix A).
- Accept the following proposed fee-based and quoted services labour rates as they are below the maximum labour rates which we consider are efficient:
  - Admin Support (business and after hours)
  - Technical Specialist (business and after hours)
  - Senior Engineer (business and after hours)
  - Engineering Manager (business and after hours)
  - Technical Specialists (Outdoor) (business and after hours)
- Not accept the following labour rates as they are above the maximum labour rates which we consider are efficient. As a result, we have substituted them with our maximum labour rate benchmarks:
  - Engineer (business and after hours)
  - Field Worker (business and after hours)
  - Field Worker (Outdoor) (business and after hours)
- Substitute Endeavour Energy's proposed year one (2024–25) fee-based service price caps, based on applying our draft decision on labour rates and revised assumptions sent by Endeavour Energy for the following services (see section 16.1.4.2 and Table A.2 in appendix A):
  - Non market site establishment
  - Site establishment – Per NMI
  - Site establishment assessment that does not result in the allocation of a NMI

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2 Under the CPI–X framework, the X factor can be a measure of the real rate of change in prices from one year to the next. For ancillary network services, the X factor is the change in wage prices given that labour is the primary cost input for providing these services.

3 For more detail on the reasons for this decision, see the discussion in section 6.4.2 of Attachment 6 – Operating expenditure.

- Error correction due to incorrect information received from Retailers or Metering Providers (site visit)
- NMI Extinction
- De-energising wires for safe approach e.g. tree pruning (Network safety service)
- Move in meter reads
- Move out meter reads
- Special meter reads
- Special meter reads – Site Visit
- Disconnection or reconnections (site visit)

16.1.2 Endeavour Energy's proposal

Endeavour Energy maintained many of its fee-based services from the 2019–24 period into the 2024–29 period. However, it simplified its service offering by refining service descriptions to combine previous services. This reduced the number of fee-based services it will offer from 237 to 168.

Endeavour Energy proposed to consolidate its 18 labour categories to 8 to be more consistent with other distributors. The reduction also meant that Endeavour Energy had to update its assumptions on how it mapped labour categories to its fee-based services.[4]

Endeavour Energy applied a bottom-up approach to develop prices for all its fee-based services. For year 1 of the 2024–29 period, Endeavour Energy used the AER's standardised ancillary network services model to derive prices.[5]

Endeavour Energy derived its 2024–29 labour rates from the Hays 2022–23 Salary guide with fixed on-cost factors and overheads to be consistent with AER's approach in previous decisions.[6] It also reviewed its labour and materials assumptions with its internal stakeholders including whether the services were an administrative function or required qualified staff.

Endeavour Energy proposed to not include a percentage for margin or tax recovery in its ancillary network services prices because the AER has previously decided that the benchmark overhead rate of 61% used in labour rates already includes a margin component. Endeavour Energy also did not apply a travel time component in its price build-up for fee-based services to keep downward pressure on prices.[7]

Table 16.1 and Table 16.2 in section 16.1.4.1 contain Endeavour Energy's proposed labour rates for business hours and after hours, respectively.[8]

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4 Endeavour Energy, *Endeavour Energy - 0.01 Regulatory Proposal,* January 2023, p. 269.

5 Endeavour Energy, *Endeavour Energy - 14.07 ANS Pricing Models,* January 2023.

6 Endeavour Energy, *Endeavour Energy - 0.01 Regulatory Proposal,* January 2023, p. 268.

7 Endeavour Energy, *Endeavour Energy - 0.01 Regulatory Proposal,* January 2023, p. 268.

8 The labour rates in table 16.1 are specifically for quoted services, though they are consistent with the labour rates for fee-based services. The difference is that "base" labour rates and on-costs are the explicit labour input for fee-based services, with overheads being calculated at a later stage based on total direct costs (labour, materials and so on).

For its fee-based services relating to nightwatchman lighting, Endeavour Energy used a separate annuity-based model to derive prices.[9]

Endeavour Energy's ancillary network services model proposed to continue the use of labour price growth forecasts as the X factor for ancillary network services.

16.1.3 Assessment approach

The regulatory framework for assessing alternative control services is less prescriptive than for standard control services. That is, there is no requirement to apply the building block model exactly as prescribed in Part C of the National Electricity Rules (NER).

On this basis, our approach involves an assessment of the efficient 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 Endeavour Energy's proposed labour rates against maximum total labour rates, which we consider efficient.

Where Endeavour Energy'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.

We also considered relevant stakeholder feedback raised throughout the consultation process and benchmarked Endeavour Energy's proposed ancillary network services prices against its prices for the 2019–24 period and other relevant distributors. We will also make further adjustments to Endeavour Energy's ancillary network services prices where we consider it appropriate to do so.

16.1.4 Reasons for draft decision

Section 16.1.4.1 discusses the maximum labour rates we consider are appropriate for Endeavour Energy.

Section 16.1.4.2 sets out how we assessed Endeavour Energy's proposed fee-based prices and, where appropriate, adjusted them to derive our draft decision prices for 2024–25. This includes substituting our draft decision labour rates (among other draft decision factors), where necessary, following our considerations as set out in section 16.1.4.1.

16.1.4.1 Proposed labour rates

For ancillary network services we typically review the key inputs in determining the price for the service. We focus on labour rates as these are the principal input.

Consistent with the 2019–24 period, we continue to categorise Endeavour Energy's proposed labour rates into six different categories. This is on the basis that although distributors use different labour categories and descriptions, the types of labour used to deliver ancillary network services broadly fall into the following categories: administration, technical specialists, field workers, engineers, and senior engineers. For the NSW networks,

[9] Endeavour Energy, *Nightwatch Model (Long term) - Public,* January 2023. Endeavour Energy, *Nightwatch Model (Short term) - Public,* January 2023.

we also benchmark a sixth category: engineering manager. This is consistent with our previous distribution determinations for the NSW distributors.[10]

This method is a continuation of Marsden Jacob's previous reports for the AER in relation to labour rates and ancillary network services.[11] In assessing the reasonableness of the proposed labour rates, we:

- derived salary ranges for our labour categories using NSW salary data for various electricity distribution-related occupations from the most recent, publicly available Hays Salary Guide (Hays)
- derived the raw hourly rate using the maximum salaries in each of the categories, dividing by number of weeks in a year and hours in a week
- escalated for on-costs (leave, superannuation, workers compensation, payroll tax)
- escalated for overheads – we continue to use a maximum overhead rate of 61%, based on Marsden Jacob's recommendation. We consider the profit margin allocation is already included within the overall overhead allowance.
- escalated for assumed inflation, labour rate escalators (reflecting the wage price index) and an allowance to account for salary stickiness in the Hays survey data
- added an hourly vehicle cost, where required.

In aggregate, these elements are referred to as the 'maximum reasonable benchmark rate', which is expressed as an hourly rate.

Compared to our 2019–24 period decision, we have made the following changes to the way we derive our maximum reasonable benchmark rate:

- using a 38-hour week, rather than a 40-hour week, consistent with the latest Hays report.
- excluding salary data from the 'Transmission line engineer' and 'Generator technician' occupations from our analysis
- uplift the engineer rate by 20% to obtain the senior engineer rate
- using Hays 2022–23 data (instead of the most recent 2023–24 data) for technical specialists, field workers and engineering managers
- use of real inflation (CPI) and X factors to convert labour rates and the vehicle allowance to $2024–25.

Excluding occupations and the uplift for engineers

In considering labour rate benchmarks in the lead-up to our issues paper, we benchmarked the distributors' proposed labour rates with the most recent (at the time) labour rates derived

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10 See, for example, AER, Final decision - Ausgrid distribution determination 2019-24, *Attachment 15 - Alternative control services*, April 2019, p. 9.

11 Recent reports include: Marsden Jacob Report, *Review of Alternative control services for SA Power Networks Energex and Ergon Energy – June 2019*; Marsden Jacob Associates, *Review of Victorian distributors Alternative Control Services – June 2020*.

from the Hays 2022–23 data. We found that, under our methodology, engineers and senior engineers would have the same hourly rate.

We applied several changes in deriving the raw labour rates. Upon consultation with our internal technical experts, we removed the roles of 'Transmission line engineer' (categorised as engineer) and 'Generator technician' (technical specialist) from their respective benchmarks as they are not typically employed by distributors.

Further, we consider it is not appropriate to assign occupations to the senior engineer category because senior engineer salaries reflect time in role, not particular occupations. Instead, we applied a 20% uplift from engineer salaries as a reasonable premium for time in role.

Changes to Hays Salary Guide

In July 2023, Hays released its 2023–24 salary data. There were some significant changes in its reporting with the report no longer including wage data for the technical specialist and field worker roles. It also did not update salaries for engineering managers. To derive our benchmarks for these labour categories, we instead use the latest data that we have, which is the Hays 2022–23 data.

For the administration and engineer labour categories, we used the Hays 2023–24 data as the relevant rates are still available.

In addition, we note that the Hays 2023–24 data is based on a 38-hour week.[12] We have therefore derived our maximum reasonable benchmark rates using a 38-hour week as we consider the Hays data captures the conditions of the broad labour pool from which Endeavour Energy draws its labour.

Determining labour rates in $2024–25

Finally, we applied one or two-year's worth of real inflation and X factors to convert the 2022–23 and 2023–24 labour rates (respectively, depending on which was applicable) to $2024–25. To convert $2022–23 nominal rates into $2023–24 nominal terms (where relevant), we used actual CPI consistent with the method we apply during annual pricing and consistent with our draft decision on control mechanisms.[13] To convert $2023–24 nominal rates into $2024–25 nominal terms, we have applied forecast CPI from the Reserve Bank of Australia as a placeholder for this draft decision. We will apply actual CPI consistent with our control mechanism in our final decision.

We also used this approach to escalate the $20 per hour vehicle allowance in our previous decisions for inflation only (i.e. no X factor) to $23.87.[14]

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12 Hays plc, *Hays Salary Guide FY23/24 Australia and New Zealand*, p. 2.

13 AER, *Draft decision – Endeavour Energy distribution determination 2024–29 - Attachment 14 - Control mechanisms,* September 2023.

14 See for example AER, *Draft decision - Powercor distribution determination 2021-26 - Attachment 16 - Alternative control services - September 2020*, p.6; *Marsden Jacob Associates - Review of Victorian distributors Alternative Control Services - June 2020*, p. 24.

To obtain the benchmark after hour rates, we continue to apply 1.75 times the business hourly rate, as recommended by Marsden Jacob.

Using this method, Table 16.1 includes our maximum hourly labour rate for the six labour benchmark categories and Endeavour Energy's proposed prices for business hours. Table 16.2 contains the same information for after hours.

Table 16.1 AER maximum benchmark and Endeavour Energy's proposed hourly labour rates for 2024–25 (business hours, including on-costs and overheads, $2024–25)

	AER maximum labour rate[15]	Endeavour Energy's proposed labour rate
Admin Support	$119.58	$117.97
Technical Specialist R2	$191.40	$180.34
EO 7/Engineer	$265.73	$271.19
Field Worker R4	$172.69	$180.34
Senior Engineer	$318.87	$244.07
Engineering Manager	$345.38	$325.43
Field Worker R4 (Outdoor)	$196.56	$204.85
Technical Specialist R2 (Outdoor)	$215.26	$204.85

Source: AER analysis. Endeavour Energy - IR038 - Revised ANS Pricing Model - Public - 20230815, 'Output|Quoted'!D12:D17.

Table 16.2 AER maximum benchmark and Endeavour Energy's proposed hourly labour rates for 2024–25 (after hours, including on-costs and overheads, $2024–25)

	AER maximum labour rate	Endeavour Energy's Proposed labour rate (after hours)
Admin Support	$209.27	$206.44
Technical Specialist R2	$334.95	$315.60
EO 7/Engineer	$465.03	$474.58
Field Worker R4	$302.21	$315.60
Senior Engineer	$558.02	$427.12
Engineering Manager	$604.42	$569.50

[15] We have included a vehicle allowance in our benchmark labour rate for Technical Specialists R2 (Outdoors) and removed the vehicle allowance for Field Worker R4 for both business hours and after hours.

	AER maximum labour rate	Endeavour Energy's Proposed labour rate (after hours)
Field Worker R4 (Outdoor)	$343.98	$340.10
Technical Specialist R2 (Outdoor)	$376.71	$340.10

Outcomes of our benchmarking

As a result of our benchmarking, we do not accept the following labour rates proposed by Endeavour Energy and have substituted in our maximum labour rates (for both business hours and after hours):

- EO 7/Engineer
- Field Worker R4
- Field Worker R4 (Outdoor)

Table A.4 and Table A.5 in appendix A sets out our draft decision on the labour rates Endeavour Energy can utilise in the provision of quoted services.

Section 16.1.4.2 discusses the effect of our draft decision on labour rates on Endeavour Energy's prices for fee-based services.

16.1.4.2 Proposed fee-based services and benchmarking

Our draft decision is to not accept Endeavour Energy's assumptions for its fee-based services. We adjust for labour inputs only (see section 16.1.4.1).

Appendix A sets out our draft decision prices for Endeavour Energy's fee based services incorporating these adjustments.

As we detailed in section 16.1.4.1, we have adjusted Endeavour Energy's proposed labour rates for EO 7/Engineer, Field worker R4 and Field Worker R4 (Outdoor) to reflect the outcome of our assessment of efficient labour rates. These adjustments have reduced Endeavour Energy's proposed prices by an average of 1.16% across all proposed fee-based services.[16]

In addition to our labour rates analysis, we benchmarked Endeavour Energy's fee-based services by comparing its prices and assumptions for its most commonly requested services with other distributor's proposals, as well as comparing the service prices we set in our previous decision to its current proposal.

We did not observe large increases in prices for most services when we compared Endeavour Energy's proposed 2024–25 fee-based service prices with their 2023–24 equivalents. Endeavour Energy proposed 168 fee-based services with an average nominal

[16] This average is unweighted and does not consider the quantity of services performed.

price increase of 5.95% compared to those approved in its 2023–24 pricing proposal. Of the 168 fee-based services, 107 have an average nominal price reduction of 6.21%.

However, we observed large nominal price increases between 2023–24 and 2024–25 for the following commonly requested services:

- Special meter reads from $45.33 to $84.59
- Disconnections or Reconnections (Site Visit) increased from $76.75 to $219.84

We also benchmarked Endeavour Energy's most commonly requested fee-based services against similar services provided by other electricity distributors. After adjusting for labour rates, we again found that its special meter reads and disconnection/reconnections site visit services did not benchmark well against other distributors' proposed prices.

We asked Endeavour Energy for further information about the drivers of these price increases. Endeavour Energy responded that the price increases are primarily driven by its consolidation of labour categories, revised service timings (because it had been underestimated in its 2019–24 proposal) and the introduction of a vehicle allowance.[17] Combined, these adjustments impacted the prices for these services differently depending on the combination of weighting of the adjustment on the price, with some prices for services increasing and some decreasing.

Endeavour Energy reduced its labour categories from 18 to 8 and consequently reassessed which of its consolidated labour categories were required for services. After its initial proposal, Endeavour Energy had identified the following services which had largely administrative functions that were more efficiently performed by administrative staff rather than engineers.[18] These were:

- Non market site establishment
- Site establishment – Per NMI
- Site establishment assessment that does not result in the allocation of a NMI
- Error correction due to incorrect information received from Retailers or Metering Providers (site visit)
- NMI Extinction

Endeavour Energy proposed to replace its engineers with administrative staff for these services. It also proposed to reduce engineer time for the 'De-energising wires for safe approach e.g. tree pruning' service from 3.34 hours to 2 hours and increasing field worker time from 0 hours to 1.34 hours in order to maintain the current assumptions from the 2019–24 proposal. This change would reduce prices for this service. We consider these changes to be reasonable and accept Endeavour Energy's revised assumptions for these services.

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17 Endeavour Energy, *Endeavour – information request END IR#025 – Engagement of ANS – 20230509*, Received 16 May 2023.

18 Endeavour Energy, *Endeavour – information request END IR#025 – Engagement of ANS – 20230509*, Received 16 May 2023.

In response to our information request addressing the services that did not benchmark well, Endeavour Energy revised its assumptions (and hence proposed prices) for the following services:

- Move in meter reads
- Move out meter reads
- Special Meter Reads
- Special Meter Reads – Site Visit
- Disconnections or Reconnections (Site Visit)

Table 16.3 shows Endeavour Energy's initial proposed prices for the above fee-based services and its revised prices in response to our information request.

Table 16.3 Endeavour Energy's revised fee-based services comparison for meter reads and disconnections/reconnections (including on-costs and overheads)

Service	Current price ($2023-24)	Initial proposed prices ($2024-25)	Revised prices following information request ($2024-25)
Move in meter reads	$45.27	$84.59	$58.12
Move out meter reads	$45.27	$84.59	$58.12
Special Meter Reads	$45.33	$84.59	$58.12
Special Meter Reads – Site Visit	$36.20	$75.57	$49.10
Disconnection or Reconnections (Site Visit)	$76.75	$219.84	$114.65

Endeavour Energy stated the decrease in proposed prices is driven by the AEMC's metering review into smart metering, which will significantly reduce demand for such services during the 2024–29 period. This is reflected in a reduction of the vehicle costs by 67% for metering related service to align prices to comparable networks. For 'Disconnection or Reconnection (Site Visit)' services, Endeavour Energy reduced the time to perform the service from 60 minutes to 25 minutes.[19] We consider Endeavour Energy's revised assumptions are reasonable and we incorporate them as part of our draft decision.

[19] Endeavour Energy, *Endeavour – information request END IR#038 – Ancillary network services – 20230808*, Received 15 August 2023.

16.2 Public lighting services

Public lighting services include the provision, construction and maintenance of public lighting assets.[20] This definition includes new technologies such as energy-efficient light emitting diode (LED) luminaires and emerging public lighting technologies such as smart-enabled luminaires.[21]

The main customers of public lighting services are local government councils and jurisdictional main roads departments.

There are a number of different tariff classes and prices for public lighting services. Factors influencing prices for a particular installation include which party funded the installation, and which party is responsible for maintaining and/or replacing installations.

In NSW, the date of installation also influences public lighting prices. Public lighting prices comprise of capital and operating expenditure (opex) prices for assets installed either pre or post 2009.

16.2.1 Draft decision

We do not accept Endeavour Energy's initial public lighting proposal. Stakeholders and our analysis raised concern with a few aspects of the initial proposal. In response, Endeavour Energy has openly and genuinely engaged on these aspects in order to seek resolution on them for our draft decision. We consider Endeavour Energy has adequately addressed stakeholder and our concerns. We commend Endeavour Energy in its engagement approach to deliver outcomes valued by its stakeholders.

As such, our draft decision is to amend the following inputs into Endeavour Energy's initial proposed public lighting pricing model:[22]

- the volume input for calculating streetlight patrol cost per lamp (see section 16.2.4.1)
- the overhead rate used to derive opex prices (see section 16.2.4.2)
- the hourly labour rates, WACC and CPI used to derive capital and opex prices (see section 16.2.4.3).

Updated public lighting prices for 2024–25 are set out in appendix B. Our draft decision prices are approximately 23% lower on average than Endeavour Energy's initial proposed prices. For subsequent years, the X factor is set at zero and the prices increase by CPI following the control mechanism formula.

16.2.2 Endeavour Energy's proposal

In response to feedback from stakeholders, Endeavour Energy simplified its network charging schedules and reduced its number of tariffs compared to the 2019–24 period.

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20 AER, *Final framework and approach for Ausgrid, Endeavour Energy and Essential Energy for the 2024-29 regulatory control period*, July 2022, p. 34.

21 AER, *Final framework and approach for Ausgrid, Endeavour Energy and Essential Energy for the 2024-29 regulatory control period,* July 2022, pp. 34–35.

22 Endeavour Energy, *14.06 Public Lighting Pricing Model,* January 2023 - Public.

For the 2024–29 period, Endeavour Energy proposed to determine capital prices using an annuity approach for both pre and post 2009 assets.[23] In previous periods, Endeavour Energy developed capital prices for the pre 2009 asset base using a building block approach (Tariff Class 1), and an annuity approach for post 2009 assets (Tariff Class 3).[24]

Endeavour Energy also merged the Tariff Class 2 and Tariff Class 4 opex tariffs,[25] reducing the price points of LED opex tariffs to two.[26]

We observe that the number of distinct price points will decrease from approximately 200 in 2023–24 to approximately 120 in 2024–25.[27]

Endeavour Energy adopted a new public lighting pricing model, incorporating the annuity approach for all capital prices, stating it improves transparency and reduces complexity.[28]

Endeavour Energy stated it developed differential LED public lighting prices to improve the cost reflectivity of public lighting prices and incentivise adoption of LED lighting technology. Key assumptions underpinning this differential is an LED useful life of 16 years and a cleaning cycle of 6 years. Endeavour Energy stated the 6-year cleaning cycle better aligns with the revised NSW Public Lighting Code (Lighting Code) due to commence 1 July 2023.[29]

Endeavour Energy proposed price increases for approximately 66% of all of their public lighting services, with an average price increase of 2.9% compared to 2024–25 prices in nominal terms.[30] For comparison, Endeavour Energy proposed price increases for 53% for LED-related public lighting services, with an average price decrease of 0.9% compared to 2024–25 prices.

Endeavour Energy stated the number of public lights on its network is increasing due to growth areas in its network and expects to fully transition to LED technology before June 2024.[31]

16.2.3 Assessment approach

To determine prices for public lighting services we assessed Endeavour Energy'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

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23 Endeavour Energy, *0_01 Regulatory Proposal,* January 2023, p. 262.

24 AER, *Endeavour Energy 2019-24 - Draft decision - Attachment 15 - Alternative control services*, November 2018, p. 15.

25 Tariff class 2 prices recover the costs of maintaining assets constructed prior to 2009 where Endeavour did not fund construction. Tariff class 4 prices are the same as tariff class 4, but for assets constructed after 2009, plus a tax recovery charge. For more detail, see Endeavour Energy - 0_01 Regulatory Proposal - January 2023, pp. 262–263.

26 Endeavour Energy, *0_01 Regulatory Proposal,* January 2023, pp. 260 and 262–263.

27 AER analysis.

28 Endeavour Energy, *0_01 Regulatory Proposal*, January 2023, pp. 260–262.

29 Endeavour Energy, *0_01 Regulatory Proposal*, January 2023, p. 261.

30 AER analysis.

31 Endeavour Energy, *0_01 Regulatory Proposal,* January 2023, p. 260.

assessed proposed labour price growth rates, other input assumptions and stakeholder submissions to derive proposed public lighting charges.

We consulted with Endeavour Energy and council representatives through information requests and meetings to clarify and potentially resolve outstanding issues.

We also engaged Marsden Jacob to quality-assure public lighting models to ensure they are internally consistent, accurate and fit-for-purpose.

We updated model parameters where appropriate after taking the factors described above into consideration.

16.2.4 Reasons for draft decision

16.2.4.1 Amendment to streetlight patrol costs

Our draft decision amended an input for streetlight patrol costs due to an oversight in Endeavour Energy's public lighting model. This results in a slight decrease to capital and opex prices for luminaires (traditional and LED).

Our consultant, Marsden Jacob, noted Endeavour Energy's public lighting model calculates streetlight patrol cost per lamp as the total annual cost of streetlight patrols divided by the number of street patrols multiplied by 2.[32] However, it appears Endeavour Energy intended the denominator to represent the number of lamps.[33]

As Marsden Jacob suggested, we requested that Endeavour Energy amend this calculation in the public lighting model so the denominator reflects the total number of lamps.[34] Endeavour Energy agreed with the amendment,[35] resulting in a decrease of $0.89, or 1.2% on average, to Endeavour Energy's capital and opex prices for luminaires.[36, 37]

16.2.4.2 Opex overhead rates

Our draft decision reduced the overhead rate Endeavour Energy used to derive opex prices from 135.1%[38] to 70.7%. This decreases Endeavour Energy's opex prices by approximately 23% to 29%, and capital prices by approximately 3% to 28%.[39]

Western Sydney Regional Organisation of Councils (WSROC) submitted overheads comprise between 49% and 130% of Endeavour Energy's total costs for public lighting.

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32 Endeavour Energy, *14.06 Public Lighting Pricing Model*, January 2023 - Public, 'C_Opex Calc'!AF10:AF141 and 'I_OPEX Input!D73:D75.

33 Endeavour Energy, *14.06 Public Lighting Pricing Model*, January 2023 - Public, 'I_OPEX Input!C73.

34 AER, *Information request END#026 – Overhead rates and pricing model for public lighting – 20230510 – PUBLIC*, 10 May 2021, p. 2.

35 Endeavour Energy, *IR026 - Public Lighting overheads and pricing model – Public – 20230525*, 25 May 2023, p. 5.

36 The exceptions are the capital charges for several traditional luminaires—2x250W Mercury, 4x600W Sodium, 2x250W Metal Halide, 2x400W Metal Halide and 1000W Metal Halide—which saw decreases between $1.06 and $1.68.

37 Endeavour Energy, *(Revised) 14.06 Public Lighting Pricing Model*, January 2023 - Public – 20230524.

38 Endeavour Energy, *14.06 Public Lighting Pricing Model*, January 2023 - Public, 'C_OPEX Calc!F6.

39 Endeavour's capital prices captures both capital costs and maintenance costs.

WSROC stated these appear high compared to other jurisdictions. For example, overheads for Ausgrid's public lighting are between 6% an 14%.[40]

Relatedly, the submission from Campbelltown and Wollondilly councils (Campbelltown and Wollondilly) noted Endeavour Energy's LED opex prices are significantly higher than corresponding prices for Ausgrid as Table 16.4 shows. For completeness, we also included the corresponding opex prices for Essential Energy in Table 16.4.

Table 16.4 Comparison of proposed LED opex prices in NSW for 2024–25

	Residential Road LED Opex ($/year)	Main Road LED opex ($/year)
Endeavour Energy	$47.74	$53.84
Ausgrid	$23.25	$31.69
Essential Energy	$39.12	$49.29

Source: Wollondilly Shire Council, *Submission - 2024-29 Electricity Determination - Endeavour Energy*, May 2023, p. 1; Essential Energy, *13.03.02 Public Lighting Model,* Jan23, 'O_OPEX Tariff Summary'!AC10 & AC18.

Our analysis indicated overheads were a significant driver for these price differences between Ausgrid and Endeavour Energy's proposed public lighting prices. Endeavour Energy overheads were also higher than Essential Energy's despite lower base costs.[41]

Endeavour Energy stated its proposed overhead rates reflect the application of its AER-approved cost allocation methodology and is consistent with historical rates. Endeavour Energy further stated overhead rates are not comparable between distributors as accounting practices differ in the treatment of direct costs and overheads. In making its proposal, Endeavour Energy stated it focused on the overall cost to customers (which reduced its proposal) rather than accounting practices consistent with its cost allocation methodology.[42]

However, Endeavour Energy reflected on the benchmarking above to understand whether its overhead rate contributed to an outcome that is efficient and reasonable. Endeavour Energy proposed to revise its divisional and corporate overhead rate from 129.43% to 65.0%. Endeavour Energy proposed to maintain its proposed non-system overhead rate of 5.68%, resulting in a revised total overhead rate of 70.68% for opex prices.[43]

Endeavour Energy noted its revised overhead rate is approximately 10.0% higher than the Marsden Jacob overhead rate for ancillary network services (61.0%) but significantly below the original rate of 135.11%. Endeavour Energy stated this is required to account for additional responsibilities associated with public lighting relative to ancillary network services, such as:[44]

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40 WSROC, *Submission - 2024-29 Electricity Determination – Endeavour*, May 2023, p. 10.

41 AER analysis; Essential Energy, *13.03.02 Public Lighting Model*, Jan23, 'I_Global Inputs'!F43

42 Endeavour Energy, *IR032 - Streetlighting - Public - 20230619*, 19 June 2023, p. 6.

43 Endeavour Energy, IR032 - *Streetlighting - Public - 20230619*, 19 June 2023, p. 6.

44 Endeavour Energy, *IR032 - Streetlighting - Public - 20230619*, 19 June 2023, p. 6.

- additional procurement and logistics cost due to sourcing and managing more materials for the street-light maintenance as well as the multiple LED upgrades
- increasing cost contribution related to council upgrade programs, including financial analysis, regulatory and legal (drawing up multiple new contracts for each council)
- significant and ongoing increase in council engagements and partnering to achieve mutual interests.

We consider Endeavour Energy revised overhead rate is reasonable in the overall context of this distribution determination. While it is still significantly higher than Ausgrid's and Essential Energy's overhead rates, we accept that different accounting practices explain at least some of this variation, as would different network conditions and associated practices.

Table 16.5 LED opex prices in NSW for 2024–25 with revised Endeavour prices

	Residential Road LED opex ($/year)	Main Road LED opex ($/year)
Endeavour Energy (revised)	$34.01*	$38.45*
Ausgrid	$23.25	$31.69
Essential Energy	$39.12	$49.29

Source: Endeavour Energy, *IR032 - Revised Public Lighting Pricing model*, Public - 20230619, 19 June 2023; Wollondilly Shire Council, *Submission - 2024-29 Electricity Determination - Endeavour Energy*,- May 2023, p. 1; Essential Energy, *13.03.02 Public Lighting Model*, Jan23, 'O_OPEX Tariff Summary'!AC10 & AC18.

Note: *These revised prices for Endeavour incorporate the $0.89 price reduction described in section 16.2.4.1.

Importantly, Table 16.5 shows Endeavour Energy's revised overhead rates has significantly reduced its LED opex prices by approximately $13.73 (28.6%) for residential roads and by $15.39 (28.6%) for main roads. Overall, the revised overhead rate for opex means 94% of Endeavour Energy's prices for public lighting services will decrease compared to 2024–25 prices, with an average price decrease of 21.05%.[45]

We consider these are good outcomes overall for Endeavour Energy public lighting customers.

To avoid doubt, this does not imply Endeavour Energy's revised overhead rate for opex sets a precedent for future distribution determinations. Such considerations will occur in the overall context of each determination.

16.2.4.3 LED cleaning

Our draft decision is to accept Endeavour Energy's proposed 6-yearly cleaning cycle for LEDs for the 2024–29 period. However, we encourage Endeavour Energy, other distributors and other stakeholders to collaborate on updating the Australian standards in the coming years. We will have regard to such updated standards in future distribution determinations.

[45] AER analysis. This analysis incorporates the $0.89 price reduction in Endeavour's public lighting prices due to revised streetlight patrol costs (see section 16.2.4.1).

Endeavour Energy stated it reduced its LED cleaning maintenance cycle from 10 years to 6 years to align with the new Lighting Code in effect from 1 July 2023.[46]

WSROC considered the latest version of the Lighting Code does not contain specific requirements around cleaning schedules for LEDs (or any light types). WSROC further stated many councils in Endeavour Energy's area installed LEDs designed for a 10-year cleaning cycle. A clean after 6 years is therefore not required in these areas.[47]

WSROC noted the cleaning cycle in other jurisdictions such as Victoria and South Australia is 10 years. WSROC considered a 10 year cleaning cycle is appropriate for several reasons including to align maintenance practices and to align with design approaches. WSROC provided analysis further supporting a 10-year cleaning cycle[48] and so recommended that Endeavour Energy not include cleaning in the public lighting model for the 2024–29 period except for lights replaced with LEDs before 2019.[49]

By contrast, Campbelltown and Wollondilly appeared to suggest a 10-year maintenance cycle is too long as it raises compliance and safety issues.[50]

In reviewing the 6-year cleaning cycle, Endeavour Energy stated it consulted AS/NZS 1158 guidance on dirt depreciation (as the Lighting Code required). Endeavour Energy also consulted its Public Lighting Management Plan[51] and Lighting Maintenance Instruction.[52]

Endeavour Energy stated that Ironbark, on behalf of WSROC, expressed doubt about the validity of the Australian standard as it is based on old research undertaken in the United Kingdom. Ironbark noted the lack of current local research to validate the Australian standard, stating "the jury is still out" on an appropriate cleaning cycle for Australian conditions.[53]

Endeavour Energy considered its proposed cleaning cycle reflects the 6-year design level in accordance with the Australian Standard. Importantly, information from the manufacturer and the Australian standard does not support a 10-year cleaning cycle as providing a light output compliant with the current Australian Standard.

In their consultations, Ironbark further advised Endeavour Energy that they were 'not tied to the 10-year cycle' as much as they were committed to 'a collaborative and transparent discussion across the industry' about the need for local data to inform a more up-to-date

46 Endeavour Energy, *0_01 Regulatory Proposal*, January 2023, p. 260.

47 WSROC, *Submission - 2024-29 Electricity Determination – Endeavour*, May 2023, p. 7.

48 WSROC, *Submission - 2024-29 Electricity Determination – Endeavour,* May 2023, pp. 7–9.

49 WSROC*, Submission - 2024-29 Electricity Determination – Endeavour,* May 2023, p. 10.

50 Wollondilly Shire Council*, Submission - 2024-29 Electricity Determination – Endeavour,* May 2023, p. 2.

51 Endeavour Energy, *14.08 Public Lighting Management Plan*, July 2021.

52 Endeavour Energy, *IR032 - Streetlighting - Public - 20230619,* 19 June 2023, p. 3.

53 Endeavour Energy, *IR032 - Streetlighting - Public - 20230619,* 19 June 2023, p. 3.

Standard.[54] This sentiment is consistent with our own discussions with WSROC and Ironbark.[55]

Given these considerations, we are satisfied with Endeavour Energy's proposed 6-year cleaning cycle. We observe all NSW distributors will apply a 6 year cycle for the 2024-29 period.

We encourage Endeavour Energy, other distributors and other stakeholders to collaborate on updating the Australian standards in the coming years, informed by timely and Australia-relevant data. We will revisit Endeavour's cleaning cycles in future periods having regard to developments in the Australian standards.

16.2.4.4 LED asset life

Our draft decision is to apply a 20-year life to calculate Endeavour Energy's capital prices for LED luminaires for the 2024–29 period. As we discuss below, Endeavour Energy's initial intentions was to calculate these prices using a 16-year life. However, in developing its prices it applied a 20-year cycle which we note reduces prices during a period of economic strain and is supported by many stakeholders.

Campbelltown and Wollondilly stated Endeavour Energy "wishes to move to a 16-year basis of LED capital from the current 12 years."[56] The joint submission considered this has the appearance of lowering capital charges, but increases total costs over time. It is possible that LED's installed today will have shorter asset lives as more advanced lighting could emerge, leaving councils with large residuals to pay.[57, 58]

After considering Campbelltown and Wollondilly, Endeavour Energy proposed to maintain its approach of assuming 16-year LED asset lives to calculate capital prices.

Endeavour Energy highlighted that shortening the life cycle would be NPV neutral to Endeavour Energy, but would change the balance for councils between annual and residual costs. The decision therefore needs to balance customer preferences between annual and residual charges. Except for Campbelltown and Wollondilly, Endeavour Energy stated it did not receive strong or widespread feedback from councils that this approach lacks the necessary balance between annual charges and residual charges.[59]

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54 Endeavour Energy, *IR032 - Streetlighting - Public - 20230619,* 19 June 2023, p. 3.

55 AER, *File note – WSROC - Submission on Endeavour Energy public lighting proposal for 2024-29 regulatory control period*, 13 July 2023. (Ref: #15,521,175).

56 Wollondilly Shire Council, *Submission - 2024-29 Electricity Determination - Endeavour Energy*, May 2023, p. 2.

57 Wollondilly Shire Council, *Submission - 2024-29 Electricity Determination - Endeavour Energy,* May 2023, p. 2.

58 Our previous final decision agreed with Endeavour's proposal to use 16 years to derive the public lighting capital charges for the 2019–24 period. See AER, *Final decision - Endeavour Energy distribution determination 2019-24 - Attachment 15 - Alternative control services*, April 2019, p. 8.

59 Endeavour Energy, *IR032 - Streetlighting - Public - 20230619*, 19 June 2023, pp. 4–5.

In their discussions, Endeavour Energy stated WSROC reiterated their preference to lengthen, rather than shorten, the current 16-year life.[60] WSROC expressed to us a preference for a 20 year life as it considers many councils prefer to have lower prices now.[61]

Despite this, we found during our analysis that Endeavour Energy's public lighting model incorrectly calculates LED capital prices using 20 year asset lives.[62] Applying a 16-year asset life to the model would increase Endeavour Energy's proposed LED capital prices by 1% to 9%.

Endeavour Energy acknowledged the modelling oversight but proposed not to correct it. Endeavour stated it engaged on these pricing outcomes and, to their knowledge, gained stakeholder support following revisions to its overheads assumptions (see section 16.2.4.2).[63] Endeavour Energy also noted this outcome better aligns with the preferences of WSROC as noted above.

We consider this is a reasonable outcome as it results in lower prices for the 2024–29 period.

To avoid doubt, this does not imply a precedent for future distribution determinations regarding LED asset lives. Such considerations will occur in the overall context of each determination, particularly as more data becomes available regarding such technologies.

16.2.4.5 LED failure rates

Our draft decision is to accept Endeavour Energy's proposed failure rates for LED luminaires (and other public lighting assets) for the 2024–29 period. We consider they appropriately capture the conditions on Endeavour's network and form a reasonable basis for forecasting.

WSROC submitted that Endeavour Energy assumed a failure rate for LED luminaires of 3.79%. WSROC stated this is not in line with failure rates in other jurisdictions or rates advised by manufacturers. WSROC submitted councils experience common LED failure rates of below 1% for most distributors.[64]

In their consultations, Endeavour Energy expressed to WSROC that the comparison with other distributors may not be like-for-like. Endeavour Energy stated its failure rate relates to the entire installation (i.e. LED, fuse, cabling), and not simply the luminaire.[65] Endeavour Energy highlighted that even on a like-for-like basis, failure rates between networks will differ based on network characteristics and environmental factors.[66]

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60 Endeavour Energy, *IR032 - Streetlighting - Public - 20230619*, 19 June 2023, p. 5.

61 AER, *File note - WSROC - Submission on Endeavour Energy public lighting proposal for 2024-29 regulatory control period,* 13 July 2023. (Ref: #15,521,175).

62 Endeavour Energy, *14.06 Public Lighting Pricing Model*, January 2023 - Public, 'C_CAPEX Tariff Summary'!T53:T145; Endeavour Energy, *IRO032 - Revised Public Lighting Pricing Model*, Jun 23 - Public - 20230619,'C_CAPEX Tariff Summary'!T53:T145.

63 Endeavour Energy, *information request END IR#037 – LED asset lives and PE cell failure rates in public lighting pricing model – 20230724 – PUBLIC*, 2 August 2023.

64 WSROC, *Submission - 2024-29 Electricity Determination - Endeavour*, May 2023, pp. 6–7.

65 Endeavour Energy*, IR032 - Streetlighting - Public - 20230619*, 19 June 2023, p. 1.

66 Endeavour Energy, *IR032 - Streetlighting - Public - 20230619,*, 19 June 2023, p. 2.

Endeavour Energy further advised that its failure rate is based on current data and reflects the positive impact of LEDs compared to old technologies. The proposed failure rate represents a 30% reduction in lighting failures and maintenance callouts due to the introduction of LED technologies. Endeavour Energy considered several years of data to determine the failure rate, but only the most recent several months were utilised given this reduction.[67]

Relatedly, WSROC considered the failure rate of PE cells should be comparable across distributors. WSROC suggested Endeavour Energy's PE cell failure rates are higher than Ausgrid and Essential because of past replacement practices. Still, WSROC considered Endeavour Energy's PE cell failure rate should be lower in the 2024–29 period because of its LED rollout.[68]

Endeavour Energy maintained that the failure rates in its public lighting model are appropriate. Endeavour Energy stated these failure rates were developed based on actual data from its network area and therefore more applicable than comparisons with differing network conditions.[69]

We consider failure rates based on actual data provides a reasonable basis for modelling assumptions as they capture the performance of assets under the conditions in which the network operates.

We encourage Endeavour Energy to continue seeking ways to run public lighting assets more efficiently and to continue collecting data on its assets particularly for new technologies such as LED luminaires.

16.2.4.6 Labour rates, WACC and CPI

We have also amended the following inputs into Endeavour Energy's public lighting model. These amendments are consistent with our draft decision on other relevant aspects of Endeavour Energy's regulatory proposal.

Labour rates

We substituted the labour rates in Endeavour Energy's public lighting model with our maximum benchmark rates for field workers (R4).[70]

This reflects our draft decision not to accept Endeavour Energy's proposed hourly rate for field workers during business hours as part of our assessment of Endeavour Energy's ancillary network services proposal (see section 16.1.4.1). Endeavour Energy stated it used the rates for engineers, field workers and technical specialists—consistent with its proposal for ancillary network services—as inputs in its public lighting model.[71]

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67 Endeavour Energy, *IR032 - Streetlighting - Public - 20230619,*, 19 June 2023, p. 2.

68 AER, *File note – WSROC - Submission on Endeavour Energy public lighting proposal for 2024-29 regulatory control period*, 13 July 2023. (Ref: #15,521,175).

69 Endeavour Energy, *information request END IR#037 – LED asset lives and PE cell failure rates in public lighting pricing model*, 20230724 – PUBLIC, 2 August 2023.

70 Specifically, the base rate with no on-costs and overheads, and no vehicles.

71 Endeavour Energy, *14.06 Public Lighting Pricing Model*, January 2023 – Public, 'I_Global Inputs'!C9:C11.

We note our draft decision on ancillary network services also did not accept Endeavour Energy's proposed hourly rate for engineers (EO 7) (see section 16.1.4.1). Endeavour Energy's public lighting model proposed an hourly rate of $90.59 ($2021–22) excluding oncosts and overheads for this labour category. Our corresponding benchmark labour rate for engineers $95.79 ($2021–22) excluding oncosts and overheads. We therefore accept the proposed labour rates Endeavour Energy included in its public lighting model for the EO 7 engineer labour category.

Consistent with our draft decision on ancillary network services, we accept Endeavour Energy's proposed labour rate for technical specialists (R2) (see section 16.1.4.1).

Rate of return

We substituted the pre-tax real WACC inputs in Endeavour Energy's public lighting model to be consistent with our draft decision on Endeavour Energy's rate of return (see attachment 3).

Inflation

We have substituted the forecast inflation input for the 2024–25 year in Endeavour Energy's public lighting model with the RBA forecast inflation for December 2023 as a placeholder in this draft decision.[72] We will update this for actual inflation in our final decision consistent with our final decision on Endeavour Energy's control mechanisms.

In addition, we substituted the inflation figures in the public lighting model for the 2021–22, 2022–23 and 2023–24 regulatory years. We included the actual inflation for those years as defined in the control mechanism that applied to Endeavour Energy in the 2019–24 period.[73] This appeared to have been Endeavour Energy's intention, though the years were not aligned.[74]

16.2.4.7 Service classification of smart lighting

According to Campbelltown and Wollondilly, Endeavour Energy indicated in deliberations on the Lighting Code that it wished to move some aspects of smart lighting into an unregulated category. This is of significant concern as Campbelltown and Wollondilly view smart street lighting controls as integral to the future of public lighting. Campbelltown and Wollondilly considered it is essential the AER maintains pricing oversight of what will become an essential component of public lighting.[75]

Endeavour Energy clarified it engaged on smart lighting technology as part of its early engagement with broad stakeholders on service classification. Endeavour Energy also confirmed it intends to offer all smart lighting services as alternative control services should they be introduced in the 2024-29 period.[76]

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72 https://www.rba.gov.au/publications/smp/2023/aug/forecasts.html

73 AER, *Final decision - Endeavour Energy distribution determination 2019-24 - Attachment 13 - Control mechanisms,* March 2021, p. 12.

74 For example, the actual CPI figure of 3.5% for 2022–23 was inputted in Endeavour's model for 2021–22.

75 Wollondilly Shire Council, *Submission - 2024-29 Electricity Determination - Endeavour Energy*, May 2023, p. 2.

76 Endeavour Energy, *IR032 - Streetlighting - Public - 20230619*, 19 June 2023, p. 7.

This is consistent with our final framework and approach, where we included emerging public lighting technology (including smart lighting) as part of the public lighting services group. In turn, we classified as public lighting services as alternative control services.[77]

16.2.4.8 Introducing new services during a regulatory control period

Our draft decision is that Endeavour Energy must price any new smart lighting services it introduces during the 2024–29 period according to the control mechanism for quoted services. Endeavour should only introduce new services because customers want them (customer driven). In proposing new services, we require that Endeavour Energy be able to demonstrate customer support for such prices and services.

Campbelltown and Wollondilly are concerned there is not already a clear price for smart controls on Endeavour Energy's price list (as there is in Ausgrid's). They suggested the AER should request clear pricing from Endeavour Energy for smart controls as part of its pricing proposal.[78]

We acknowledge smart technologies have potential to bring significant efficiencies to public lighting services. We therefore encourage distributors to deploy such technologies—with associated pricing—where they can provide benefits to customers.

"Smart" lighting" or "smart technologies" are catch-all terms for technologies with a variety of applications. These include metering individual lights, as well as dimming and trimming based on ambient lighting levels or pedestrian/vehicle activity. Distributors and public lighting customers need to engage on the smart lighting solutions appropriate to their needs.

Given its status as an emerging technology, the industry is also deliberating regulatory issues on aspects of these applications such as individually metering lighting installations.

We understand distributors are at different stages in their deployment of smart technologies. Endeavour Energy informed us it is running several trials with smart lighting. Endeavour Energy stated they have communicated to councils they could introduce regulated pricing for smart technologies in the 2024–29 period, pending the outcome of these trials.[79]

Given Endeavour Energy is still trialling smart lighting, there is likely not enough time for Endeavour Energy to propose specific prices for smart lighting for inclusion into its regulatory proposal (see attachment 14 section 14.5.3).

However, Endeavour Energy can introduce smart lighting during the 2024–29 period and price it in accordance with the control mechanism formula for quoted services (see attachment 14 section 14.5.3).

We consider this is consistent with our previous distribution determinations. We stated new alternative control services introduced during a regulatory control period with characteristics

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77 AER, *Final framework and approach for Ausgrid, Endeavour Energy and Essential Energy for the 2024-29 regulatory control period*, July 2022, pp. 34–35.

78 Wollondilly Shire Council, *Submission - 2024-29 Electricity Determination - Endeavour Energy*, May 2023, p. 2.

79 AER, *File note – Endeavour Energy - Public lighting proposal for 2024-29 regulatory control period*, 12 April 2023. (Ref: #15,157,131).

that are the same or essentially the same as other alternative control services should be priced as a quoted service until the next regulatory control period (see attachment 14 section 14.5.3).

As smart lighting is an emerging technology, there may be no other alternative control services "with characteristics that are the same or essentially the same." Customer support is therefore vital to introducing such new technologies during the 2024–29 period.

In addition, Endeavour Energy must be able to demonstrate that the price it charges a customer for smart lighting services reflects the efficient costs of those services, in accordance with the control mechanism formula (see attachment 14 section 14.5.3).

It is also worth considering that quoted services generally apply to one-off services. So the control mechanism poses no administrative issues where, for example, a council agrees to pay for smart lighting assets up-front.

However, some councils may prefer to pay for these assets over its economic or useful life. We consider this is possible under the control mechanism for quoted services.

This could involve determining the up-front costs based on the control mechanism formula as a first step. The distributor would then calculate an annual fee using a method appropriate to the service. We consider an annuity approach using Endeavour Energy's public lighting model—with modifications only as required—is reasonable for this purpose.

Further information about quoted services and introducing new prices within the 2024-29 period are set out in attachment 14 section 14.5.2.

A Ancillary network services prices

Table A.1 AER draft decision on X factors for each year of the 2024–29 period for ancillary network services (per cent)

	2025–26	2026–27	2027–28	2028–29
X factor	-1.3219%	-0.9254%	-0.9214%	-1.0650%

Note: We do not apply an X factor for 2024–25 because we set 2024–25 ancillary network services 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. X factors in this table are rounded to 4 decimal places but distributors should use the raw X factors in the draft decision model.

Table A.2 Fee-based ancillary network services (excluding security lighting) prices for 2024–25 ($2024–25), draft decision

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
All Other - Per access authorisation (AA) or authority to work (ATW)	Access permits, oversight and facilitation	$2,715.35	$2,715.33
Subdivision - URD - Per Lot	Access permits, oversight and facilitation	$63.12	$63.12
Clearance to Work	Access permits, oversight and facilitation	$2,924.96	$2,792.35
Break & remake HV bonds - Each additional set	Access permits, oversight and facilitation	$2,321.46	$2,221.83
Break & remake HV bonds - One set	Access permits, oversight and facilitation	$4,097.18	$3,947.99
Break & remake LV bonds - Each additional set	Access permits, oversight and facilitation	$1,278.70	$1,228.73
Break & remake LV bonds - One set	Access permits, oversight and facilitation	$2,631.26	$2,548.15
Connect & disconnect generator to a padmount / indoor substation - Each additional gen	Access permits, oversight and facilitation	$1,121.55	$1,071.79
Connect & disconnect generator to a padmount / indoor substation - One generator	Access permits, oversight and facilitation	$2,474.11	$2,391.20
Connect & disconnect generator to LV OH mains - Each additional generator	Access permits, oversight and facilitation	$1,121.55	$1,071.79
Connect & disconnect generator to LV OH mains - One generator	Access permits, oversight and facilitation	$2,474.11	$2,391.20

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
Install & remove HV live line links - Each additional set	Access permits, oversight and facilitation	$3,435.11	$3,285.73
Install & remove HV live line links - One set	Access permits, oversight and facilitation	$5,328.69	$5,129.60
Install & remove LV live line links - Each additional set	Access permits, oversight and facilitation	$1,224.59	$1,174.69
Install & remove LV live line links - One set	Access permits, oversight and facilitation	$2,577.15	$2,494.10
Normal Time - 1 x Visit - Open / Close - 1 hour - Per Job	Access permits, oversight and facilitation	$180.34	$180.34
Normal Time - Open / Isolate & CSO to close, Open / Close & no isolation - Per Job	Access permits, oversight and facilitation	$360.68	$360.68
Normal Time - 2 x Visit - Open / Isolate / Close - 2 hours - Per Job	Access permits, oversight and facilitation	$721.36	$721.36
Overtime - 1 x Visit - Open / Close - 1 hour - Per Job - after hours	Access permits, oversight and facilitation	$315.60	$315.60
Overtime - Visit - Open / Isolate & CSO to close, Open / Close & no isolation - Per Job - after hours	Access permits, oversight and facilitation	$631.19	$631.20
Overtime - 2 x Visit - Open / Isolate / Close - 2 hours - Per Job - after hours	Access permits, oversight and facilitation	$1,262.39	$1,262.40
Authorisation - New	Authorisation of ASPs	$582.50	$564.22
Authorisation - Renewal	Authorisation of ASPs	$528.40	$512.60
Connection of Load - Non Urban - Overhead - 11+ poles	Connection application related services	$943.74	$943.76
Connection of Load - Non Urban - Overhead - 1-5 poles	Connection application related services	$471.87	$471.88
Connection of Load - Non Urban - Overhead - 6-10 poles	Connection application related services	$707.81	$707.82
Subdivision - Non Urban - Overhead - 11+ poles	Connection application related services	$1,061.71	$1,061.73
Subdivision - Non Urban - Overhead - 1-5 poles	Connection application related services	$471.87	$471.88
Subdivision - Non Urban - Overhead / Underground	Connection application related services	$589.84	$589.85

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
Subdivision - Non Urban - Underground - 1-5 lots	Connection application related services	$353.90	$353.91
Subdivision - Non Urban - Underground - 41+ lots	Connection application related services	$707.81	$707.82
Subdivision - Non Urban - Underground - 6-10 lots	Connection application related services	$471.87	$471.88
Subdivision - URD - Underground - 11-40 lots	Connection application related services	$825.77	$825.79
Subdivision - URD - Underground - 1-5 lots	Connection application related services	$471.87	$471.88
Subdivision - URD - Underground - 41+ lots	Connection application related services	$943.74	$943.76
Subdivision - URD - Underground - 6-10 lots	Connection application related services	$589.84	$589.85
All Other - Asset Relocation, Industrial & Commercial, Non Urban, Public Lighting, URD - Per Substation	Contestable network commissioning and decommissioning	$2,272.66	$2,211.58
Subdivision - URD - Per Lot	Contestable network commissioning and decommissioning	$114.81	$112.66
Connection of Load - Indoor Substation, Industrial & Commercial - Per Hour, Phase HV Customer and Transmission	Design related services	$180.34	$180.34
Connection of Load - Non Urban - Overhead - 11+ poles	Design related services	$901.71	$901.70
Connection of Load - Non Urban - Overhead - 1-5 poles	Design related services	$360.68	$360.68
Connection of Load - Non Urban - Overhead - 6-10 poles	Design related services	$541.02	$541.02
Subdivision - Industrial & Commercial - Overhead - 11+ poles	Design related services	$901.71	$901.70
Subdivision - Industrial & Commercial - Overhead - 1-5 poles	Design related services	$360.68	$360.68
Subdivision - Industrial & Commercial - Overhead - 6-10 poles	Design related services	$541.02	$541.02
Subdivision - Industrial & Commercial - Underground - 1-10 lots	Design related services	$541.02	$541.02

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
Subdivision - Industrial & Commercial - Underground - 11-40 lots	Design related services	$721.36	$721.36
Subdivision - Industrial & Commercial - Underground - 41 + lots	Design related services	$1,082.05	$1,082.04
Subdivision - Non Urban - Overhead - 11+ poles	Design related services	$901.71	$901.70
Subdivision - Non Urban - Overhead - 1-5 poles	Design related services	$360.68	$360.68
Subdivision - Non Urban - Overhead - 6-10 poles	Design related services	$541.02	$541.02
Subdivision - Non Urban - Underground - 11-40 lots	Design related services	$721.36	$721.36
Subdivision - Non Urban - Underground - 1-5 lots	Design related services	$180.34	$180.34
Subdivision - Non Urban - Underground - 41+ lots	Design related services	$721.36	$721.36
Subdivision - Non Urban - Underground - 6-10 lots	Design related services	$541.02	$541.02
Subdivision - URD - Underground - 11-40 lots	Design related services	$901.71	$901.70
Subdivision - URD - Underground - 1-5 lots	Design related services	$360.68	$360.68
Subdivision - URD - Underground - 41+ lots	Design related services	$1,082.05	$1,082.04
Subdivision - URD - Underground - 6-10 lots	Design related services	$541.02	$541.02
Subdivision - URD - Underground - 11-40 lots	Design related services	$1,262.39	$1,262.38
Subdivision - URD - Underground - 1-5 lots	Design related services	$541.02	$541.02
Subdivision - URD - Underground - 41+ lots	Design related services	$1,623.07	$1,623.06
Subdivision - URD - Underground - 6-10 lots	Design related services	$721.36	$721.36

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
Connection of Load - Industrial & Commercial - Overhead - Per Pole (1 - 5)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$108.20	$108.20
Connection of Load - Industrial & Commercial - Overhead - Per Pole (11+)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$72.14	$72.14
Connection of Load - Industrial & Commercial - Overhead - Per Pole (6 - 10)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$90.17	$90.17
Connection of Load - Industrial & Commercial - Overhead - Per Pole Sub	Inspection services − Private electrical installations and accredited service providers (ASPs)	$631.19	$631.19
Connection of Load - Non Urban - Overhead - Per Pole (1 - 5)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$108.20	$108.20
Connection of Load - Non Urban - Overhead - Per Pole (11 +)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$72.14	$72.14
Connection of Load - Non Urban - Overhead - Per Pole (6 - 10)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$90.17	$90.17
Connection of Load - Non Urban - Overhead - Per Pole Sub	Inspection services − Private electrical installations and accredited service providers (ASPs)	$613.16	$613.16

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
Subdivision - Industrial & Commercial - Overhead - Per Pole (1 - 5)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$108.20	$108.20
Subdivision - Industrial & Commercial - Overhead - Per Pole (11 +)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$72.14	$72.14
Subdivision - Industrial & Commercial - Overhead - Per Pole (6 - 10)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$90.17	$90.17
Subdivision - Industrial & Commercial - Overhead - Per Pole Sub	Inspection services − Private electrical installations and accredited service providers (ASPs)	$631.19	$631.19
Subdivision - Industrial & Commercial - Underground - Per Lot (1 - 10)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$90.17	$90.17
Subdivision - Industrial & Commercial - Underground - Per Lot (11 - 50)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$90.17	$90.17
Subdivision - Industrial & Commercial - Underground - Per Lot (51+)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$90.17	$90.17
Subdivision - Non Urban - Overhead - Per Pole (1 - 5)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$108.20	$108.20

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
Subdivision - Non Urban - Overhead - Per Pole (11 +)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$72.14	$72.14
Subdivision - Non Urban - Overhead - Per Pole (6 - 10)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$90.17	$90.17
Subdivision - Non Urban - Overhead - Per Pole Sub	Inspection services − Private electrical installations and accredited service providers (ASPs)	$613.16	$613.16
Subdivision - Non Urban - Underground - Per Lot (1 - 10)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$90.17	$90.17
Subdivision - Non Urban - Underground - Per Lot (11 - 50)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$54.10	$54.10
Subdivision - Non Urban - Underground - Per Lot (51+)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$18.03	$18.03
Subdivision - URD - Underground - Per Lot (1 - 10)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$90.17	$90.17
Subdivision - URD - Underground - Per Lot (11 - 50)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$54.10	$54.10

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
Subdivision - URD - Underground - Per Lot (51 +)	Inspection services − Private electrical installations and accredited service providers (ASPs)	$18.03	$18.03
Per NOSW - A Grade	Inspection services − Private electrical installations and accredited service providers (ASPs)	$63.12	$63.12
Per NOSW - B Grade	Inspection services − Private electrical installations and accredited service providers (ASPs)	$108.20	$108.20
Per NOSW - C Grade	Inspection services − Private electrical installations and accredited service providers (ASPs)	$360.68	$360.68
Access Permits	Inspection services − Private electrical installations and accredited service providers (ASPs)	$2,705.12	$2,705.10
Administration Fee	Inspection services − Private electrical installations and accredited service providers (ASPs)	$58.98	$58.99
Supply of conveyancing information - Per Desk Inquiry	Network related property services	$58.98	$58.99
de-energising wires for safe approach (e.g. for tree pruning)	Network safety services	$782.83	$760.87
Traffic Management to install & remove, break & remake, connect & disconnect excluded distribution services	Network safety services	$8,593.06	$8,259.85
Traffic Management to test, terminate and joint excluded distribution services	Network safety services	$7,871.69	$7,571.63
Rectification of illegal connections - Per Job	Network safety services	$760.87	$727.68

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
Network tariff change request	Network tariff change request	$58.98	$58.99
Connection of Load - Industrial & Commercial, Non Urban, URD - Per Compliance Cert	Notices of arrangement and completion notices	$235.94	$235.94
Subdivision - Industrial & Commercial, Non Urban, URD - Per NOA	Notices of arrangement and completion notices	$235.94	$235.94
Off Peak Conversion site visit (no access)	Off-peak conversion	$135.26	$135.26
Off Peak Conversions	Off-peak conversion	$150.28	$143.38
Vegetation defect management	Rectification works to maintain network safety	$219.84	$211.51
Error correction due to incorrect information received from Retailers or Metering Providers (no Site Visit)	Site establishment services	$122.04	$122.04
Non market Site Establishment	Site establishment services	$11.80	$11.80
Site Establishment - Per NMI	Site establishment services	$39.32	$39.32
Site Establishment assessment that does not result in the allocation of a NMI.	Site establishment services	$9.83	$9.83
11kV Padmount/Indoor substation cable termination	Termination of cable at zone substation – distributor required performance	$5,685.22	$5,564.04
11kV Pole top termination (UGOH) and bonding to OH	Termination of cable at zone substation – distributor required performance	$7,042.13	$6,897.07
11kV Straight through joint	Termination of cable at zone substation – distributor required performance	$5,478.24	$5,335.22
11kV Zone substation circuit breaker cable termination	Termination of cable at zone substation – distributor required performance	$4,993.12	$4,850.73

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
22kV Padmount/Indoor substation cable termination	Termination of cable at zone substation – distributor required performance	$7,260.85	$7,115.50
22kV Pole top termination (UGOH) and bonding to OH	Termination of cable at zone substation – distributor required performance	$8,151.96	$8,005.45
22kV Straight through joint	Termination of cable at zone substation – distributor required performance	$5,816.96	$5,673.49
22kV Zone substation circuit breaker cable termination	Termination of cable at zone substation – distributor required performance	$5,260.05	$5,117.31
Protection setting	Termination of cable at zone substation – distributor required performance	$4,899.72	$4,877.86
Testing cable prior to commissioning	Termination of cable at zone substation – distributor required performance	$5,347.86	$5,347.83
Zone substation access and supervision for installation of cable(s) for one feeder	Termination of cable at zone substation – distributor required performance	$3,916.84	$3,775.93
Connection Offer Service (Basic)	Connection Offer Service	$29.49	$29.49
Connection Offer Service (Standard)	Connection Offer Service	$406.78	$398.60
Disconnections or Reconnections (Meter Box)	Reconnections/Disconnections	$129.67	$125.48
Disconnections (Meter Load Tail)	Reconnections/Disconnections	$380.34	$364.63
Disconnections or Reconnections (Pole Top / Pillar Box)	Reconnections/Disconnections	$602.84	$576.91
Disconnections or Reconnections (Site Visit)	Reconnections/Disconnections	$114.65	$111.14
Disconnections or Reconnections at Pole Top / Pillar Box - Site Visit	Reconnections/Disconnections	$281.16	$270.01

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
Reconnection outside Normal business hours - after hours	Reconnections/Disconnections	$315.60	$315.60
Rectification of illegal connections	Reconnections/Disconnections	$760.87	$727.68
Customer Data Request	Customer requested provision of additional metering/consumption data	$19.66	$19.66
No access	Distributor arranged outage for purposes of replacing meter	$249.34	$241.00
Other party fails to arrive	Distributor arranged outage for purposes of replacing meter	$519.85	$499.08
Outage Arrangements	Distributor arranged outage for purposes of replacing meter	$745.27	$714.15
CT Meter Removal & Disposal	Meter recovery and disposal − type 5 and 6 (legacy meters)	$258.14	$249.76
WC Meter Disposal	Meter recovery and disposal − type 5 and 6 (legacy meters)	$258.14	$249.76
Meter Test Fee - Per Request	Special meter reading and testing (legacy meters)	$541.02	$541.02
Meter Test Fee - Site Visit	Special meter reading and testing (legacy meters)	$135.26	$135.26
Move in meter reads	Special meter reading and testing (legacy meters)	$58.12	$56.03
Move out meter reads	Special meter reading and testing (legacy meters)	$58.12	$56.03

Service (business hours unless otherwise noted)	Service category	Initial proposal	Draft decision
Special Meter Reads	Special meter reading and testing (legacy meters)	$58.12	$56.03
Special Meter Reads - Site Visit	Special meter reading and testing (legacy meters)	$49.10	$47.43
Type 5-7 Non Standard Meter data Services	Special meter reading and testing (legacy meters)	$19.66	$19.66
Notification Only	Distributor arranged outage for purposes of replacing meter	$384.59	$370.04
Error correction due to incorrect information received from Retailers or Metering Providers (Site Visit)	Site establishment services	$117.97	$117.97
NMI Extinction	Site establishment services	$29.49	$29.49
Metering Investigation services	Emergency maintenance of failed metering equipment not owned by the distributor (contestable meters)	$274.44	$274.44
Reconnection of already connected site	Reconnections/Disconnections	$102.07	$102.02
Disconnections (Meter Load Tail) -Site Visit ONLY	Reconnections/Disconnections	$180.34	$180.34
Cable ID & Spike	Cable spike	$721.36	$721.36

Table A.3 Fee-based ancillary network services (security lighting/nightwatch) prices for 2024–25 ($2024–25), draft decision

Service (business hours unless otherwise noted)	Charging basis	Initial proposal and draft decision
Security Lighting Short Term Monthly Charge - Minor	per month	$43.34
Security Lighting Short Term Monthly Charge - Small	per month	$58.14

Service (business hours unless otherwise noted)	Charging basis	Initial proposal and draft decision
Security Lighting Short Term Monthly Charge - Medium	per month	$72.00
Security Lighting Short Term Monthly Charge - Large	per month	$105.82
Security Lighting Short Term Monthly Charge - X Large	per month	$155.57
Security Lighting Long Term Monthly Charge - Minor	per month	$45.37
Security Lighting Long Term Monthly Charge - Small	per month	$60.32
Security Lighting Long Term Monthly Charge - Medium	per month	$74.21
Security Lighting Long Term Monthly Charge - Large	per month	$98.04
Security Lighting Long Term Monthly Charge - X Large	per month	$157.80
Security Lighting Short Term Installation Charge - Minor	per fitting	$1,032.42
Security Lighting Short Term Installation Charge - Small	per fitting	$1,482.97
Security Lighting Short Term Installation Charge - Medium	per fitting	$1,678.82
Security Lighting Short Term Installation Charge - Large	per fitting	$1,704.64
Security Lighting Short Term Installation Charge - X Large	per fitting	$1,564.49
Security Lighting Long Term Installation Charge - Minor	per fitting	$372.59
Security Lighting Long Term Installation Charge - Small	per fitting	$372.59
Security Lighting Long Term Installation Charge - Medium	per fitting	$372.59
Security Lighting Long Term Installation Charge - Large	per fitting	$372.59
Security Lighting Long Term Installation Charge - X Large	per fitting	$372.59

Note: We expect Endeavour Energy to update these prices for revised CPI in its revised proposal for use in our final decision.

Table A.4 Quoted service hourly labour rates (business hours) for 2024–25, draft decision ($2024–25)

	Initial proposal	Draft decision
Admin Support	$117.97	$117.97
Technical Specialist R2	$180.34	$180.34
EO 7/Engineer	$271.19	$265.73
Field Worker R4	$180.34	$172.69
Senior Engineer	$244.07	$244.07
Engineering Manager	$325.43	$325.43
Field Worker R4 (Outdoor)	$204.85	$196.56
Technical Specialist R2 (Outdoor)	$204.85	$204.85

Table A.5 Quoted service hourly labour rates (after hours) for 2024–25, draft decision ($2024–25)

	Initial proposal	Draft decision
Admin Support	$206.44	$206.44
Technical Specialist R2	$315.60	$315.60
EO 7/Engineer	$474.58	$465.02
Field Worker R4	$315.60	$302.21
Senior Engineer	$427.12	$427.12
Engineering Manager	$569.50	$569.50

	Initial proposal	Draft decision
Field Worker R4 (Outdoor)	$340.10	$326.07
Technical Specialist R2 (Outdoor)	$340.10	$340.10

Table A.6 Non-exhaustive list of ancillary network service provided on a quotation basis

Description of service	Description of service
Customer Interface co-ordination for contestable works	Design Re-certification - Connection of Load - Industrial & Commercial
Administration - Connection of Load - Industrial & Commercial	Design Re-certification - Connection of Load - Non Urban
Administration - Connection of Load - Non Urban - Underground	Design Re-certification - Connection of Load - URD
Administration - Connection of Load - URD	Design Re-certification - Public Lighting - Designer
Administration - Other - Asset Relocation	Design Re-certification - Public Lighting - Engineer
Administration - Other - Public Lighting	Design Re-certification - Subdivision - Industrial & Commercial
Administration - Subdivision - Industrial & Commercial	Design Re-certification - Subdivision - Non Urban
Customer initiated Asset Relocations - network safety	Design Re-certification - Subdivision - URD
Design Certification - Asset Relocation - Designer	Inspection of Service Work (Level 1) - Asset Relocation - Asset Relocation - Underground - (Engineer) + travel time
Design Certification - Asset Relocation - Engineer	Inspection of Service Work (Level 1) - Asset Relocation - Asset Relocation - Underground - (Inspector) + travel time
Design Certification - Connection of Load - Industrial & Commercial - <= 200A/Phase (LV)	Inspection of Service Work (Level 1) - Connection of Load - Industrial & Commercial - Underground - (Engineer) + travel time

Description of service	Description of service
Design Certification - Connection of Load - Industrial & Commercial - <= 700A/Phase (LV)	Inspection of Service Work (Level 1) - Connection of Load - Industrial & Commercial - Underground - (Inspector) + travel time
Design Certification - Connection of Load - Industrial & Commercial - > 700A/Phase (LV)	Inspection of Service Work (Level 1) - Connection of Load - Non Urban - Underground - (Engineer) + travel time
Design Certification - Connection of Load - Industrial & Commercial - HV Customer	Inspection of Service Work (Level 1) - Connection of Load - Non Urban - Underground - (Inspector) + travel time
Design Certification - Connection of Load - Industrial & Commercial - Transmission	Inspection of Service Work (Level 1) - Connection of Load - URD - Underground - (Engineer) + travel time
Design Certification - Connection of Load - Multi-Dwelling - <= 20 units	Inspection of Service Work (Level 1) - Connection of Load - URD - Underground - (Inspector) + travel time
Design Certification - Connection of Load - Multi-Dwelling - <= 40 units	Inspection of Service Work (Level 1) - Public Lighting - Public Lighting - Underground - (Engineer) + travel time
Design Certification - Connection of Load - Multi-Dwelling - <= 5 units	Inspection of Service Work (Level 1) - Public Lighting - Public Lighting - Underground - (Inspector) + travel time
Design Certification - Connection of Load - Multi-Dwelling - > 40 units	Inspection of Service Work (Level 1) - Subdivision - URD - Underground + travel time
Design Certification - Connection of Load - Non Urban - Underground	Inspection of works outside normal working hours
Design Certification - Public Lighting - Designer	Investigation, review & implementation of remedial actions associated with ASP's connection work.
Design Certification - Public Lighting - Engineer	Private inspection of privately owned low voltage or high voltage network infrastructure (i.e. privately owned distribution infrastructure before the meter).
Design Information - Asset Relocation - Designer	Reinspection Fee (Level 1 & Level 2 work)

Description of service	Description of service
Design Information - Asset Relocation - Engineer	Services involved in obtaining deeds of agreement in relation to property rights associated with contestable connections work
Design Information - Connection of Load - Industrial & Commercial - <= 200A/Phase (LV)	Fitting of tiger tails (Labour)
Design Information - Connection of Load - Industrial & Commercial - <= 700A/Phase (LV)	Fitting of tiger tails (Material) - Weekly Hire
Design Information - Connection of Load - Industrial & Commercial - > 700A/Phase (LV)	High load escorts
Design Information - Connection of Load - Industrial & Commercial - HV Customer	High load escorts - Preliminary study
Design Information - Connection of Load - Industrial & Commercial - Transmission	Provision of service crew / additional crew
Design Information - Connection of Load - Multi-Dwelling - <= 20 units	Compliance Certificate - Connection of Load - Industrial & Commercial - Per hour for early cert
Design Information - Connection of Load - Multi-Dwelling - <= 40 units	Compliance Certificate - Connection of Load - Non Urban - Per hour for early cert
Design Information - Connection of Load - Multi-Dwelling - <= 5 units	Compliance Certificate - Connection of Load - URD - Per hour for early cert
Design Information - Connection of Load - Multi-Dwelling - > 40 units	Notification of Arrangement - Subdivision - Industrial & Commercial - Per hour for early notification
Design Information - Connection of Load - Non Urban - I&C - <= 200A/Phase (LV)	Notification of Arrangement - Subdivision - Non Urban - Per hour for early notification
Design Information - Connection of Load - Non Urban - I&C - <= 700A/Phase (LV)	Notification of Arrangement - Subdivision - URD - Per hour for early notification
Design Information - Connection of Load - Non Urban - I&C - > 700A/Phase (LV)	Planned interruption - customer requested

Description of service	Description of service
Design Information - Connection of Load - Non Urban - I&C - HV Customer	Training services to ASPs
Design Information - Connection of Load - Non Urban - I&C - Transmission	Services provided in relation to a Retailer of Last Resort (ROLR) event
Design Information - Connection of Load - Non Urban - Multi-Dwelling - <= 20 units	Carrying out planning studies and analysis relating to distribution (including subtransmission and dual function assets) connection applications - COMPLEX JOBS
Design Information - Connection of Load - Non Urban - Multi-Dwelling - <= 40 units	Carrying out planning studies and analysis relating to distribution (including subtransmission and dual function assets) connection applications - SIMPLE JOBS
Design Information - Connection of Load - Non Urban - Multi-Dwelling - <= 5 units	Preliminary Enquiry Service - COMPLEX JOBS
Design Information - Connection of Load - Non Urban - Multi-Dwelling - > 40 units	Preliminary Enquiry Service - SIMPLE JOBS
Design Information - Connection of Load - Non Urban - Single Residential	Augmentations - Design and build costs (of shared network) beyond distributor standards
Design Information - Public Lighting - Designer	Premise connection assets - Part design and build costs beyond distributor standards
Design Information - Public Lighting - Engineer	Emergency meter maintenance - In hours
Design Information - Subdivision - Industrial & Commercial	Emergency meter maintenance - After hours
Design Information - Subdivision - Non Urban	Security Escort
Design Re-certification - Asset Relocation - Designer	Pole Holds
Design Re-certification - Asset Relocation - Engineer	Customer Data Request - Other

B Public lighting prices

Table B.1 Vertical support

	Proposed NEW TC1 & TC3 (Capex + Opex)	Proposed NEW TC2 & TC4 (Opex)	Draft decision NEW TC1 & TC3 (Capex + Opex)	Draft decision NEW TC2 & TC4 (Opex)
Minor Column (<=9)	$32.32	$24.60	$21.96	$17.70
Major Column (>=9)	$124.81	$38.50	$101.68	$29.09
Pole (Wood) - Minor - DEDICATED SL <=11m	$175.80	$30.25	$171.34	$21.78
Pole (Wood) - Major - DEDICATED SL >11m	$263.89	$44.34	$257.31	$32.01
Column (Steel) - Minor <=9m	$182.47	$24.60	$179.92	$17.70
Column (Steel) - Major >9m	$275.14	$30.29	$274.42	$23.14
Pole (Wood) - Minor<=11m	$0.00	$0.00	$0.00	$0.00
Pole (Wood) - Major >11m	$0.00	$0.00	$0.00	$0.00

Table B.2 Horizontal support

	Proposed NEW TC1 & TC3 (Capex + Opex)	Proposed NEW TC2 & TC4 (Opex)	Draft decision NEW TC1 & TC3 (Capex + Opex)	Draft decision NEW TC2 & TC4 (Opex)
Pole mounting bracket minor (<=3m)	$12.96	$12.96	$9.33	$9.33
Pole mounting bracket major (>3m)	$17.28	$17.28	$12.44	$12.44
Outreach Minor (<=2m)	$16.40	$16.40	$11.80	$11.80
Outreach Major (>2m)	$18.45	$18.45	$13.27	$13.27

	Proposed NEW TC1 & TC3 (Capex + Opex)	Proposed NEW TC2 & TC4 (Opex)	Draft decision NEW TC1 & TC3 (Capex + Opex)	Draft decision NEW TC2 & TC4 (Opex)
Bracket - Minor <=3m	$24.52	$12.96	$21.20	$9.33
Bracket - Major >3m	$70.09	$17.28	$66.59	$12.44
Outreach - Minor <=2m	$29.63	$16.40	$25.38	$11.80
Outreach - Major >2m	$46.89	$18.45	$42.39	$13.27

Table B.3 Traditional luminaire type

	Proposed NEW TC1 & TC3 (Capex + Opex)	Proposed NEW TC2 & TC4 (Opex)	Draft decision NEW TC1 & TC3 (Capex + Opex)	Draft decision NEW TC2 & TC4 (Opex)
1 x 20 W Fluorescent	$67.97	$67.97	$48.35	$48.35
2 x 20 W Fluorescent	$67.97		$48.35	
2 x 14 W Fluorescent	$67.19	$67.19	$47.79	$47.79
2 x 24 W Fluorescent	$67.19	$67.19	$47.79	$47.79
1 x 40 W Fluorescent	$67.97	$67.97	$48.35	$48.35
2 x 40 W Fluorescent	$70.19	$70.19	$49.96	$49.96
1 x 42 W Fluorescent	$67.97	$67.97	$48.35	$48.35
50W Mercury	$68.54	$68.54	$48.77	$48.77
80W Mercury	$67.40	$67.40	$47.94	$47.94
125W Mercury	$71.33	$71.33	$50.79	$50.79

	Proposed NEW TC1 & TC3 (Capex + Opex)	Proposed NEW TC2 & TC4 (Opex)	Draft decision NEW TC1 & TC3 (Capex + Opex)	Draft decision NEW TC2 & TC4 (Opex)
250W Mercury	$71.33	$71.33	$50.79	$50.79
2 x 250W Mercury	$92.73		$66.02	
400 W Mercury	$71.33	$71.33	$50.79	$50.79
50W Sodium	$71.16	$71.16	$50.66	$50.66
70W Sodium	$69.52	$69.52	$49.48	$49.48
90W Sodium	$71.16		$50.66	
100W Sodium	$71.16	$71.16	$50.66	$50.66
120W Sodium	$69.45		$49.42	
150W Sodium	$69.45	$69.45	$49.42	$49.42
250W Sodium	$73.35	$73.35	$52.25	$52.25
2 x 250W Sodium	$80.94	$80.94	$57.75	$57.75
310W Sodium	$70.36		$50.08	
400 W Sodium	$70.36	$70.36	$50.08	$50.08
2 x 400 W Sodium	$74.96	$74.96	$53.42	$53.42
4 x 600W Sodium	$89.95		$64.10	
100 W Metal Halide	$79.32	$79.32	$56.58	$56.58
150 W Metal Halide	$75.05	$75.05	$53.48	$53.48
250 W Metal Halide	$73.94	$73.94	$52.68	$52.68

	Proposed NEW TC1 & TC3 (Capex + Opex)	Proposed NEW TC2 & TC4 (Opex)	Draft decision NEW TC1 & TC3 (Capex + Opex)	Draft decision NEW TC2 & TC4 (Opex)
2 x 250 W Metal Halide	$123.18	$82.12	$87.91	$58.61
400 W Metal Halide	$73.36	$73.36	$52.25	$52.25
2 x 400 W Metal Halide	$153.82	$80.96	$109.75	$57.76
1000 W Metal Halide	$89.95		$64.10	
2x14W Energy Efficient Fluro - STD	$105.91	$67.19	$87.16	$47.79
2x24W Energy Efficient Fluro - STD	$109.08	$67.19	$90.37	$47.79
1x42W Compact Fluorescent - STD	$101.55	$67.97	$82.49	$48.35
50W Mercury - STANDARD	$97.82	$68.54	$78.53	$48.77
80W Mercury - STANDARD	$100.06	$67.40	$81.15	$47.94
70W Sodium - STANDARD	$102.54	$69.52	$83.05	$49.48
100W Sodium - STANDARD	$111.42	$71.16	$91.60	$50.66
100W Metal Halide - STANDARD	$121.29	$79.32	$99.25	$56.58
Suburban 70W HPS c/w D2 PECB - STD	$102.54	$69.52	$83.05	$49.48
150W Sodium - STANDARD	$120.07	$78.97	$98.03	$56.27
150W Metal Halide - STANDARD	$126.83	$84.56	$103.28	$60.32
250W Sodium - STANDARD	$126.22	$82.87	$103.16	$59.09
250W Metal Halide - STANDARD	$126.94	$83.46	$103.71	$59.52
400W Sodium - STANDARD	$130.22	$79.88	$108.09	$56.92

	Proposed NEW TC1 & TC3 (Capex + Opex)	Proposed NEW TC2 & TC4 (Opex)	Draft decision NEW TC1 & TC3 (Capex + Opex)	Draft decision NEW TC2 & TC4 (Opex)
80W Mercury - AEROSCREEN	$111.47	$78.80	$89.41	$56.20
Urban A/Screen 42W CFL c/w D2 PECB	$110.40	$67.97	$91.49	$48.35
150W Sodium - AEROSCREEN	$124.25	$78.97	$102.29	$56.27
150W Metal Halide - AEROSCREEN	$131.02	$84.56	$107.54	$60.32
250W Sodium (w/o PECB) - AEROSCREEN	$128.01	$82.87	$104.97	$59.09
250W Metal Halide - AEROSCREEN	$128.73	$83.46	$105.53	$59.52
400W Sodium - AEROSCREEN	$129.07	$79.88	$106.92	$56.92
400W Metal Halide - AEROSCREEN	$132.69	$82.87	$109.73	$59.10
Roadster A/Screen 100W HPS c/w PECB	$123.22	$80.68	$100.75	$57.51
80W Mercury - POST TOP	$126.43	$67.40	$107.95	$47.94
B2001 42WCFL c/w D2 PECB green - PT	$132.17	$67.97	$113.63	$48.35
250W Sodium - FLOODLIGHT	$136.41	$73.35	$116.34	$52.25
250W Metal Halide - FLOODLIGHT	$137.12	$73.94	$116.90	$52.68
400W Sodium - FLOODLIGHT	$135.14	$70.36	$115.93	$50.08
400W Metal Halide - FLOODLIGHT	$138.76	$73.36	$118.74	$52.25
150W Sodium - FLOODLIGHT	$131.18	$69.45	$112.17	$49.42
150W Metal Halide - FLOODLIGHT	$137.95	$75.05	$117.42	$53.48

Table B.4 LED luminaire type

	Proposed NEW TC3 (Capex + Opex)	Proposed NEW TC4 (Opex)	Draft decision NEW TC3 (Capex + Opex)	Draft decision NEW TC4 (Opex)
17W LED Cat P Luminaire	$79.20	$47.74	$65.78	$33.79
18W LED P4 Gerard	$84.51	$47.74	$71.17	$33.79
25W LED P4 Gerard	$84.51	$47.74	$71.17	$33.79
25W LED	$84.51	$47.74	$71.17	$33.79
33W LED	$84.75	$47.74	$71.42	$33.79
42W LED P3 Gerard	$94.21	$53.84	$79.22	$38.18
82W LED Gerard V5 Cat Luminaire	$119.25	$53.84	$104.67	$38.18
100W LED Gerard V4 Cat Luminaire	$119.25	$53.84	$104.67	$38.18
198W LED Gerard V2/V3 Cat Luminaire	$130.75	$53.84	$116.37	$38.18
33W LED P3 Gerard	$88.10	$47.74	$74.83	$33.79
60W LED RoadLED Midi Optic Tuner	$109.51	$53.84	$94.78	$38.18
80W LED RoadLED Midi Optic Tuner	$116.43	$53.84	$101.81	$38.18
70W LED RoadLED Midi	$101.71	$53.84	$86.84	$38.18
80W LED RoadLED Midi	$102.34	$53.84	$87.48	$38.18
165W LED RoadLED Midi	$104.82	$53.84	$90.01	$38.18
17W LED B2001 NUWE Post Top	$113.75	$47.74	$100.91	$33.79
75W LED Aglo Nilum Plus FLOODLIGHT	$101.86	$47.74	$88.81	$33.79

	Proposed NEW TC3 (Capex + Opex)	Proposed NEW TC4 (Opex)	Draft decision NEW TC3 (Capex + Opex)	Draft decision NEW TC4 (Opex)
100W LED Aglo Nilum Plus FLOODLIGHT	$104.06	$47.74	$91.05	$33.79
150W LED Aglo Nilum Plus FLOODLIGHT	$110.74	$47.74	$97.82	$33.79
300W LED Aglo Nilum Plus FLOODLIGHT	$138.30	$47.74	$125.85	$33.79
33W LED P4 Pecan	$84.75	$47.74	$71.42	$33.79
13W LED STREETLED3 STD Visor S-S	$78.60	$47.74	$65.16	$33.79
24W LED STREETLED3 STD Visor S-S	$81.39	$47.74	$68.00	$33.79
18W LED Bourke Hill S-S	$123.34	$47.74	$110.66	$33.79
24W LED Bourke Hill S-S	$125.34	$47.74	$112.69	$33.79
30W LED ATS PLED MKII	$83.39	$47.74	$70.04	$33.79
20W LED ATS PLED MKII	$78.21	$47.74	$64.77	$33.79
13W LED ATS PLED MKII	$76.99	$47.74	$63.53	$33.79
37W LED 4K ROADLED MIDI STD Visor S-S	$104.00	$53.84	$89.15	$38.18
40W LED 3K ROADLED MIDI STD Visor S-S	$104.00	$53.84	$89.15	$38.18
55W LED 4K ROADLED MIDI STD Visor S-S	$104.62	$53.84	$89.79	$38.18
61W LED 3K ROADLED MIDI STD Visor S-S	$104.62	$53.84	$89.79	$38.18
113W LED ROADLED MIDI STD Visor S-S	$107.11	$53.84	$92.31	$38.18
275W LED ROADLED S-S	$135.73	$53.84	$121.41	$38.18
230W LED Avento S-S	$108.70	$53.84	$93.93	$38.18

	Proposed NEW TC3 (Capex + Opex)	Proposed NEW TC4 (Opex)	Draft decision NEW TC3 (Capex + Opex)	Draft decision NEW TC4 (Opex)
74W LED ATS VLED	$94.98	$53.84	$79.98	$38.18
155W LED ATS VLED	$100.57	$53.84	$85.67	$38.18
254W LED 3K ROADLED MIDI STD Visor S-S	$135.73	$53.84	$121.41	$38.18
290W LED ATS VLED	$116.31	$53.84	$101.67	$38.18
120W LED 4K ROADLED MIDI Aeroscreen S-S	$107.11	$53.84	$92.31	$38.18
121W LED 3K ROADLED MIDI Aeroscreen S-S	$107.11	$53.84	$92.31	$38.18
205W LED 3K ROADLED MIDI Aeroscreen S-S	$135.73	$53.84	$121.41	$38.18
9W LED STREETLED Aeroscreen S-S	$78.60	$47.74	$65.16	$33.79
17W LED STREETLED3 Aeroscreen S-S	$79.00	$47.74	$65.57	$33.79
36W LED 4K ROADLED MIDI Aeroscreen S-S	$101.71	$53.84	$86.84	$38.18
39W LED 3K ROADLED MIDI Aeroscreen S-S	$101.71	$53.84	$86.84	$38.18
57W LED 4K ROADLED MIDI Aeroscreen S-S	$102.34	$53.84	$87.48	$38.18
63W LED 3K ROADLED MIDI Aerosreen S-S	$102.34	$53.84	$87.48	$38.18
17W LED Post Top B2001 S-S	$112.04	$47.74	$99.15	$33.79
28W LED Post Top B2001 S-S	$114.84	$47.74	$101.99	$33.79
150W LED SLED Maximus Pedestrian	$119.40	$47.74	$106.65	$33.79
175W LED SLED Maximus Pedestrian	$129.34	$47.74	$116.75	$33.79

Shortened forms

Term	Definition
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
capex	capital expenditure
CCP26	Consumer Challenge Panel, sub-panel 26
CPI	consumer price index
F&A	framework and approach
LED	light-emitting diode
NEM	national electricity market
NER	national electricity rules
NMI	national meter identifier
opex	operating expenditure
PE cell	photoelectric cell
RBA	Reserve Bank of Australia
RIN	regulatory information notice
WACC	weighted average cost of capital