DRAFT DECISION
Ausgrid
Distribution determination

2019 to 2024

Attachment 15 – Alternative control services

November 2018

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on the distribution determination that will apply to Ausgrid for the 2019–24 regulatory control period. It should be read with all other parts of the draft decision.

The draft decision includes the following attachments:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Efficiency benefit sharing scheme

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Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
capex	capital expenditure
CCP/CCP10	Consumer Challenge Panel (sub-panel 10)
CPI	consumer price index
distributor	distribution network service provider
EBSS	efficiency benefit sharing scheme
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RFM	roll forward model
RIN	regulatory information notice
WACC	weighted average cost of capital

15 Alternative control services

This attachment sets out the Australian Energy Regulator's draft decision on Ausgrid's alternative control services: ancillary network services, metering and public lighting.

Alternative control services are customer specific or customer requested services and so the full cost of the service is attributed to that particular customer. We set service specific prices to provide a reasonable opportunity to enable 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.

Alternative control services represent around 8.8 per cent of Ausgrid's total regulated revenue.[1]

15.1 Draft decision

Our draft decision is to classify ancillary network services, public lighting and metering as alternative control services, as set out in our final Framework and Approach. Our draft decision also maintains our position from our final Framework and Approach to apply caps on the prices of individual services in the next regulatory control period to all alternative control services. We consider capping individual services prices promotes cost reflective pricing which outweighs any detriment from increased administration costs.

Our draft decision is to not accept some elements of Ausgrid's proposed charges for ancillary network services, public lighting and metering where the proposed fees exceed the efficient cost of providing the services.

The detail of our draft decision is set out in the following sections:

- Section 15.4 - Ancillary Network Services
- Section 15.5 - Public Lighting
- Section 15.6 - Metering.

15.2 Ausgrid's Proposal

We received separate proposals from Ausgrid for ancillary network services, public lighting and metering.

Ausgrid adopted our final Framework and Approach service classifications, with Type 5 and 6 metering and ancillary network services proposed to be classified alternative control services. Ausgrid proposed specific prices for each of these services. Also consistent with our Final Framework and Approach, Ausgrid proposed to reclassify its

[1] Estimate drawn from Ausgrid's regulatory proposal.

Type 7 metering (for public lighting) as standard control—it is currently classified as alternative control. Ausgrid proposed to retain the current alternative control classification for its public lighting services.

Ausgrid also accepted our final Framework and Approach price cap control mechanism for alternative control services.

Ancillary network services

For ancillary network services Ausgrid proposed to adopt fees we approved for the current regulatory period and roll those forward by adjusting for actual CPI and labour cost changes.[2] For fee based services that are new or where we changed the fee for the current regulatory period, Ausgrid based charges on the raw labour rates we approved for the current period, rolled those forward using CPI and real labour cost adjustments, then applied benchmark efficient on-cost and overhead rates from our 2015 final decision.[3]

Ausgrid also proposed to consolidate services to reduce the number of its ancillary network services, impacting some charges.

Within fee-based services, Ausgrid proposed a security lighting model whereby new customers pay a one-off installation cost and a monthly charge covering operation, maintenance and replacement costs, plus electricity usage. These charges vary depending on the level of illumination the customer requests.[4]

Ausgrid proposed labour rates for quoted services which it considers are efficient as they are based on the labour rates we approved for the current regulatory period. These are the same as those used for its fee based services. However, Ausgrid proposed a new labour rate for an 'engineering manager'—applicable to only a small number of services.

Public lighting

For public lighting services, Ausgrid proposed:

- to rollout 125,000 LED[5] luminaires, of which 65,000 would be installed during the 2019–24 period
- public lighting price increases would be limited to CPI[6]
- to replace all mercury vapour lamps with LED technology
- a cost built up pricing approach for each of public lighting components such as lamp, luminaire, support structure, bracket and connection.

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2 Ausgrid, *Ausgrid's Regulatory Proposal - Attachment 8.05 - Ausgrid's ancillary network services*, April 2018, p. 4.

3 Ausgrid, *Ausgrid's Regulatory Proposal - Attachment 8.05 - Ausgrid's ancillary network services*, April 2018, p. 5.

4 Ausgrid, *Ausgrid's Regulatory Proposal - Attachment 8.05 - Ausgrid's ancillary network services*, April 2018, p. 10.

5 Light Emitting Diode

6 Ausgrid proposal Attachment 8.07, p.14

Ausgrid is currently undertaking ongoing trials of smart controls following which it aims to implement these on its public lighting network.

Metering

For metering, Ausgrid did not propose capex expenditure during the 2019–24 regulatory control period on new meters, due to no longer being responsible for meter provision. However Ausgrid did propose $21.03 million ($real 2018–19) for other metering assets. It also proposed that, while its meter operating costs will decrease during the 2019–24 regulatory control period, they will increase on a per customer basis due to diseconomies of scale.[7] In respect of metering charges, Ausgrid proposed a 14 per cent reduction in the first year of the 2019–24 regulatory control period.[8]

15.3 Assessment approach

The National Electricity Rules (NER) afford more discretion for determining the control mechanism for alternative control services than those set out for standard control services. For example, there is no requirement to establish a full building block model to set the revenue to be earned from the services as there is for standard control services. The control mechanism may be either a control on the price of the service, or the revenue to be earned from the service, or both. As a general principle we attempt to regulate alternative control services in a lighter handed manner than standard control services.

Our determination must state the basis of the control mechanism to apply to alternative control services.[9] Our decision on the form of control mechanism for alternative control services must be in accordance with our Framework and Approach. The formulae that give effect to the form of control must be as set out in the Framework and Approach unless we consider that unforeseen circumstances justify a departure.

In deciding on a control mechanism for alternative control services, we must have regard to potential competition in the relevant market, administrative costs, applicable regulatory arrangements, consistency between regulatory arrangements, and any other relevant factor.[10] The control mechanism for alternative control services may use elements of the building block model for standard control services but there is no requirement to apply the building block model exactly as it is set out in Part C of the NER.

The different regulatory requirements for alternative control services compared to standard control services recognise their different characteristics. Standard control services are central to electricity supply and are relied on by all customers. In contrast,

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7 Ausgrid, *Attachment 8.01 – Ausgrid's Metering Services*, April 2018, p. 7-8

8 Ausgrid, *Response to AER Information Request #040* , 26 August 2018, Ausgrid - IR040 - Metering pricing model - Price analysis - 20180824 - PUBLIC.xlsm

9 NER, cl. 6.2.6(b).

10 NER, cl. 6.2.5(d).

alternative control services tend to be customer specific. Accordingly our approach to assessing alternative control services is different to that of standard control services.

For ancillary network services we undertook a bottom up cost assessment. Labour costs are the major input in the cost build-up of prices for ancillary network services. Therefore, our assessment focusses on comparing Ausgrid's proposed labour rates against maximum total labour rates which we consider efficient.

Where Ausgrid's proposed labour rates exceed our maximum efficient labour rates we apply our maximum efficient labour rates to determine prices. We undertook this for both fee-based and quoted services as the labour rates proposed by Ausgrid are the same for both sets of ancillary network services. Section 15.4.2 discusses our maximum total labour rates.

We also assess the proposed times taken to perform the service as well as the escalators applied by Ausgrid as these are also cost inputs which determine the final price for some services. Our assessment of these inputs is informed by benchmarking against inputs applied by other distributors and based on the recommendations of our consultant Marsden Jacob Associates (Marsden Jacob).

For public lighting, we assessed Ausgrid's proposal by analysing its public lighting model, studying historical data, and by benchmarking proposed costs against other NEM distributors and against independent data and information. In particular we assessed proposed labour rates, luminaire failure rates, overheads and input assumptions used to derive charges. We also relied on recommendations of Marsden Jacob. We have considered issues raised by stakeholders in their submissions and incorporated them into our determination.

For metering, we maintain our final Framework and Approach position to apply price caps for individual public lighting services as the form of control.

We assessed Ausgrid's metering proposal by analysing the metering Post-tax Revenue Model, studying historic data and benchmarking costs against other NEM distributors. In particular we assessed the opex costs on a category basis and how these costs have trended over time. We have also relied on the recommendations of Marsden Jacob for labour rates when assessing metering.

15.4 Ancillary network services

Ancillary network services are provided to individual customers on an 'as needs' basis (e.g. relocating poles or temporary supply at a customer's request.). Ancillary network services involve work on, or in relation to, parts of Ausgrid's distribution network.

For the purposes of this draft decision, we refer to the service groups 'fee based services' and 'quoted services' collectively as a single group called 'ancillary network services'.

Prices for fee based services are predetermined based on the cost of providing the service and the average time taken to perform it. These services tend to be homogenous in nature and scope and can be costed in advance of supply with reasonable certainty.

By comparison, prices for quoted services are based on quantities of labour and materials 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 and service requested.

15.4.1 Ancillary network services—Draft decision

Service classification - Ancillary network services

Our draft decision is to classify ancillary network services as alternative control services. This is consistent with our final Framework and Approach and Ausgrid's proposed classification of ancillary network services.[11]

Form of control - Ancillary network services

Our draft decision is to apply a price cap form of control for fee based and quoted services. This is consistent with our final Framework and Approach and Ausgrid's proposed form of control for fee based services.[12] Under a price cap form of control, we set a schedule of prices for the first year of the regulatory period, 2019–20. For 2020–21 and subsequent years the prices for fee based services are determined by adjusting the previous year's prices by the formula set out in Attachment 13 – Control mechanism.

Consistent with previous decisions, we have also applied a labour escalator as the X Factor. Our proposed X Factors in this draft decision are set out in Appendix A.

Fee based and quoted services - Ancillary network services

Our draft decision is to accept some elements of Ausgrid's proposal for ancillary network services. This includes the proposed new services, consolidation and rationalisation of services, introduction of an engineering manager labour rate and the pricing approach to security lights. We also accept Ausgrid's proposed overtime charge of 175 per cent.

We do not accept most of the labour rates in Ausgrid's ancillary network services proposal (which are used for both quoted and fee based services) and instead apply the maximum recommended by our consultant which we consider to be efficient (see Table 15-1 below). While we accept Ausgrid's rationale for its proposed 'engineering manager' labour category, our draft decision is to substitute our labour rate based on Marsden Jacob's methodology.

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[11] AER, *Framework and approach Ausgrid, Endeavour and Essential Energy Regulatory control period commencing 1 July 2019*, July 2017, p. 11.

[12] AER, *Framework and approach Ausgrid, Endeavour and Essential Energy Regulatory control period commencing 1 July 201*9, July 2017, p. 11.
Ausgrid, *Ausgrid's Regulatory Proposal - Attachment 4.06 - Control mechanisms for SCS and ACS - April 2018 - PUBLIC, pp. 9-10.*

For fee-based services, application of our substitute labour rates results in different fees to those proposed by Ausgrid. For quoted services, these labour rates are maximum rates (which include on-costs and overheads) that Ausgrid should apply for the calculation of charges for ancillary network services offered on a quotation basis.

Table 15-1 AER draft decision - hourly labour rates (incl. on-costs and overheads, $2019–20)

Ausgrid/AER labour category	Ausgrid proposed total hourly rate (base plus on-costs plus overheads) - 2019–20[1]	AER draft decision - maximum total hourly rate (base plus on-costs plus overheads) escalated to 2019–20
Admin (R1)	$103.24	$103.24
Technical Specialist (R2)	$165.55	$157.11
Engineer/Senior Engineering officer (R3)	$205.78	$196.39
Field worker (R4)	$155.10	$151.40
Senior Engineer (R5)	$244.55	$216.02
Engineering Manager	$288.36	$261.74

Note: Ausgrid and AER labour categories are the same, except Ausgrid includes an additional 'engineering manager' labour category.

1 Ausgrid's proposed labour rates in its regulatory proposal were for 2018–19. They have been inflated to 2019–20 using the inflators Ausgrid included in its models.

Source: Ausgrid, *Attachment 8.05 - Ausgrid's ancillary network services*; Ausgrid alternative control services models; Marsden Jacob Associates, Review of Alternative Control Services - Advice to Australian Energy Regulator - PUBLIC version, September 2018; AER analysis.

Consolidation and changes to services

Ausgrid proposed to rationalise and consolidate connection related ANS fees to improve the transparency and ease of understanding of its services.[13] While we are generally supportive of simplifying fee structures to make it easier for consumers to understand them, Ausgrid's initial proposal was unclear on some details. In response to our information requests Ausgrid provided a mapping of its proposed services to current services, in addition to bill impacts for stylised projects. Some of this additional information is set out in Appendix D below to assist stakeholders in responding to our draft decision.

13 Ausgrid, *Ausgrid's Regulatory Proposal - Attachment 8.05 - Ausgrid's ancillary network services*, April 2018, p. 3.

Our draft decision is to accept Ausgrid's proposed consolidation and rationalisation of services as outlined in Appendix D.

Ausgrid also introduced a number of new services due to the revised service classification, to provide additional granularity to existing services and where charging arrangements were previously in connection policy. Ausgrid submitted it introduced services consistent with our Framework and Approach, to improve transparency and clarity, and where they are in the NERL but are not formally an ANS in 2014–19.[14]

As part of this introduction of new services we note Ausgrid changed its charges for the authorisation and reauthorisation of ASPs. For Level 1 and Level 2 ASPs, Ausgrid submitted that existing fees are not granular enough to allow Ausgrid to charge ASPs the most cost reflective fee for the service charged and that the new structure will allow charges to be applied more appropriately. Ausgrid submitted that some individual ASP1s may receive a net decrease in fees. Ausgrid also introduced a biennial authorisation/reauthorisation fee for ASP3 which it has submitted will provide it a mechanism to monitor and control secure access to its network infrastructure.[15]

We accept the introduction of these new services (set out in Appendix A) as being consistent with our final Framework & Approach.

Fee-based services - Security Lights

For security light services, Ausgrid proposed a monthly charge based on the amount of illumination requested by the customer. This charge covers both the capital and non-capital components, with the capital component being fully recovered after two years and the monthly charge subsequently only recovering the non-capital components. This non-capital component includes a charge for estimated electricity usage. Ausgrid also proposed a one-off installation charge that is common to all new security lighting.[16]

Our draft decision is to accept the proposed charges for security lighting (both monthly charges and installation charges) that were clarified by Ausgrid through our information requests.

New Services

Ausgrid proposed that if new services arose during the control period and fell within one of the existing services then:

> "In such cases, Ausgrid proposes to adopt the same (a) control mechanism for the existing service group – i.e. a cap on price; (b) the same control formulae as stated above and (c) the same pricing

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[14] Ausgrid, *Response to information request #051 ANS - new services and changes to ASP charging - 20180924 - PUBLIC,* October 2018.

[15] Ausgrid, *Response to information request #051 ANS - new services and changes to ASP charging - 20180924 - PUBLIC,* October 2018.

[16] Ausgrid, *Response to information request #040 - ACS - Security Lighting, Engineering Manager, Metering - 20180816 - PUBLIC,* August 2018.

approach established and approved by the AER for the service grouping."[17]

We do not accept Ausgrid's proposal, primarily around its proposed approach to pricing. We consider that if new services arise in the period and are classified as Alternative Control Services based, they should be priced as a quoted service until the next regulatory period. This price should be disclosed through the Annual Pricing regulatory process.

We do not consider that the same service group pricing approach can be taken as this would mean that a fixed fee could be developed, which the AER is not able to properly consider within a regulatory period. By treating new services as quoted services, customers have the security of AER determined quoted service hourly fees being applicable. As set out in Attachment 13 – Control mechanism, we expect quoted services to be provided and priced according to good industry practice.

15.4.2 Ancillary network services—Reasons for draft decision

For ancillary network services we consider it important to review the key inputs in determining the price for the service:

- underlying labour rates
- time taken to perform the service
- any material and vehicle costs associated with providing the service
- overheads.

In considering the above inputs we had regard to maximum reasonable benchmarks developed by our consultant Marsden Jacob which we consider are efficient.

By inputting the maximum benchmarks for labour rates, vehicle costs and times taken to perform services, as developed by Marsden Jacob, we were able to assess Ausgrid's proposed charges for fee based services against a maximum efficient charge.

[17] Ausgrid, *Ausgrid's Regulatory Proposal - Attachment 4.06 - Control mechanisms for SCS and ACS - April 2018 - PUBLIC, pp. 10-11.*

Figure 15-1 Summary of Marsden Jacob's report to the AER - Review of Alternative Control Services

We engaged Marsden Jacob to provide advice in relation to estimates of reasonable maximum total labour rates for the DNSPs currently undergoing resets as well as benchmarking of certain fee-based services. Marsden Jacob also provided advice on public lighting and metering input costs.

Marsden Jacob found that although each of the distributors reviewed used different category names and descriptions, the types of labour used to deliver ancillary network services broadly fell into the following five categories:

- administration
- technical services
- engineers
- field workers and
- senior engineers.[1]

Using these categories Marsden Jacob developed benchmark labour rates based on *Hays 2017 Energy sector and office support salary data* against which the efficiency of the proposed labour rates could be assessed.

In assessing the reasonableness of proposed labour rates, Marsden Jacob 'normalised' the rates provided by each business and separated them into 'raw' labour rates, on-costs and overheads.[2]

1. Raw labour costs – based on the Hays salary data and the figures used included a 8.5 per cent escalator.[3]
2. On-costs – to cover both basic leave entitlements and standard on-costs[4]
3. Overheads – to cover all additional costs. Overall Marsden Jacob recommended a maximum overhead rate of 61 per cent Marsden Jacob also accepted the inclusion of an explicit profit margin, however where these are identified this allocation had been benchmarked within the overall overhead allowance.[5]

Based on its study, Marsden Jacob recommended the maximum reasonable benchmark labour rates as set out below. Marsden Jacob recommended that we apply these maximum rates to any services it did not benchmark, to arrive at a maximum rate.

Table 15-2 Maximum total hourly rates (base plus on-costs plus overheads), $2018–19

	Ausgrid	Endeavour	Essential	Evoenergy[1]	TasNetworks[2]	Power and Water
Admin	$102.26	$102.26	$102.26	$108.37	$90.36	$89.94
Technical specialist	$153.39	$153.39	$153.39	$153.00	$144.56	$179.87
Engineer	$191.74	$191.74	$191.74	$191.25	$168.65	$167.88
Field Worker[3]	$147.83	$147.83	$147.83	$147.50	$140.45	$169.89
Senior Engineer	$210.91	$210.91	$210.91	$210.37	$198.75	$203.86

Source: Marsden Jacob Associates, Review of Alternative Control Services - Advice to Australian Energy Regulator - PUBLIC version, September 2018, Tables 5 and 7, pp. 8, 10.

Notes: [1] For Evoenergy, Marsden Jacob applied Sydney rates for all labour categories except for Administration as Hays only reports Administration rates for Canberra.

[2] For TasNetworks, Marsden Jacob used the lowest rate for Sydney, Canberra and Darwin for Administration and lower of Sydney and Darwin for other staff as there are no Hays figures for Tasmania. Marsden Jacob has applied the lowest rate as Tasmania has the lowest Average Weekly Earnings rates of any capital city in Australia.

[3] Field worker rate includes an allowance of $20 for a vehicle as an additional overhead.

The maximum hourly rates include the highest of the Hays salary rates for each labour category. Marsden Jacob noted that while these are reasonable maximum rates, more efficient rates may be gained by reference to a different point in the Hays salary bands. For our next distribution determination for these distributors, Marsden Jacob recommended the AER consider whether it is appropriate to reduce the maximum rates to reflect efficiency frontier benchmarks rather than the highest of the Hays rates for each labour category.[6] We note Marsden Jacob's recommendation in the context of future determinations. For the purposes of this draft decision we consider the maximum reasonable rates provided by Marsden Jacob should be considered efficient for our purposes.

References:

1. Marsden Jacob Associates, Review of Alternative Control Services - Advice to Australian Energy Regulator - PUBLIC version, September 2018, p. 3.
2. Ibid., p.3.
3. Ibid., p.4.
4. Ibid., pp.5-6.
5. Ibid., pp.7-8.
6. Ibid., p. 8.

Regulatory treatment of overheads and cost allocation

In its discussion of maximum overhead rates, Marsden Jacob noted capping the overhead rate may have unintended consequences for the broader cost allocation method.[18]

We reviewed the objectives of our Cost Allocation Guideline.[19] A distributor's cost allocation method sets out the principles and policies for attributing costs to, or allocating costs between, the categories of distribution services a distributor provides. Hence, in approving a distributor's cost allocation method we approve the methodology it uses to allocate costs. This does not equate to approving the costs.

The approval of actual costs is subject to applicable requirements set out in the NER. Proper application of the cost allocation method does not indicate whether the distributor's expenditure, including overheads, is at efficient levels or otherwise reflects the requirements of the NER, having regard to the revenue and pricing principles and the national electricity objective. By extension, proper application of the cost allocation method does not indicate whether the resulting overhead rates represent efficient levels.

Fee based and quoted services

To calculate charges for fee based services Ausgrid used a dual approach:

- For prices approved in our 2014–19 decision (or where we adjusted the cost by less than 1 per cent) Ausgrid rolled forward the fees by adjusting them for inflation and a labour escalation.
- For all other services Ausgrid used a cost build up approach, calculating charges by multiplying the total labour rates by the time taken to perform the service for each labour rate and adding materials if required. The labour rates Ausgrid used were those we previously approved as efficient in our 2014–19 decision.

Ausgrid's rationale is that there will be stability in fees for its customers if it uses previously approved fees and inputs that the AER has determined to be efficient.[20]

We support the rationale behind Ausgrid's pricing approach of using inputs and approaches that the AER has previously decided are efficient. This means that the difference between what we consider are the efficient total labour rates (inclusive of on-costs and overheads) and what Ausgrid has proposed are minimised. However based on the Marsden Jacob recommendations we consider that most of Ausgrid's proposed labour rates are higher than what we consider efficient (see below for a discussion of the 'Engineering Manager' labour rate). This is because Marsden Jacob:

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18 Marsden Jacob Associates, *Review of Alternative Control Services - Advice to Australian Energy Regulator - PUBLIC version*, September 2018, p.8.

19 AER, *Cost Allocation Guideline (Distribution)*, 2008.

20 Ausgrid, *Ausgrid's Regulatory Proposal - Attachment 8.05 - Ausgrid's ancillary network services*, April 2018, pp. 4-6.

- did not just roll forward the labour rates it recommended for our 2015 decision. Instead they based their recommended labour rates on more recent salary data (Hays 2017) as well as applying escalation factors to take into account low salary movements, inflation and labour escalators.[21]
- applied a flat overhead rate of 61 per cent across all labour categories, with an additional vehicle allowance for the field worker labour rate of $20 based on their benchmarking. Ausgrid's proposal used overhead rates ranging from 50 per cent to 87 per cent based on our previous decision.[22]

We have therefore substituted our approved labour rates and escalators into Ausgrid's models to generate a set of prices for 2019–20 and compared them to Ausgrid's proposed 2019–20 charges.

Marsden Jacob also undertook benchmarking of the time taken for a number of common services between the distributors it considered. Based on these recommendations we have reduced the labour time Ausgrid has used in generating its charges for the following services:

- Off-peak conversion
- Pillar/pole top disconnection completed

Marsden Jacob also suggested that an average overtime rate of around 1.75 times would be acceptable. This is equal to Ausgrid's proposed overtime rate of 175 per cent which we accept.

Engineering manager

Ausgrid proposed an additional labour rate 'Engineering Manager' which it argued is needed to deliver services in relation to:

- provision of engineering consulting advice relating to Ausgrid's shared network
- assessment of an application to have materials or equipment added to Ausgrid's approved materials list [23]

Ausgrid submitted that the proposed labour rate is required to attract and keep staff with the level of skill and experience required and that the need for such a highly skilled staff member should be expected for a large electricity distributor.[24] We note that the volume of services that Ausgrid forecasts to use this labour rate for is low.

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21 Marsden Jacob Associates, *Review of Alternative Control Services - Advice to Australian Energy Regulator - PUBLIC version*, September 2018, p.4.

22 Marsden Jacob Associates, *Review of Alternative Control Services - Advice to Australian Energy Regulator - PUBLIC version*, September 2018, pp.7-8.

23 Ausgrid, *Ausgrid's Regulatory Proposal - Attachment 8.05 - Ausgrid's ancillary network services*, April 2018, pp. 6-7; Ausgrid, *Response to information request #040 - ACS - Security Lighting, Engineering Manager, Metering - 20180816 - PUBLIC,* August 2018.

24 Ausgrid, *Response to information request #040 - ACS - Security Lighting, Engineering Manager, Metering - 20180816 - PUBLIC,* August 2018.

Ausgrid submitted that it estimates the two relevant services will be provided around 25 times in a typical regulatory year.

While other distributors have not proposed an engineering manager, we accept Ausgrid's arguments around the need to retain senior engineers, for which a higher salary rate is sometimes required. On that basis our draft decision is to accept usage of an 'Engineering Manager' labour rate. We note Ausgrid applied an approach which it considers is in line with Marsden Jacob's recommendations for our 2014–19 determination.[25] While we accept Ausgrid's approach in principle, we recalculated the proposed hourly rate using the approach in Marsden Jacob's report for our 2019–24 determination substituting:

- calculation of the hourly rate
- choice of the high range salary rather than an average of the low and high range salaries
- escalation to 2018–19
- an overhead rate of 61 per cent.

This leads to a lower labour rate than that proposed by Ausgrid.

Consolidation and changes to services affecting ASPs

While we understand Ausgrid's objective to improve the transparency of its fee structure by consolidating services we were concerned that this would lead to a significant increase in fees for some customers. For example Ausgrid has proposed that some Design Certification services that currently have a fee of $320.43 should now fall within a more general design certification service with a proposed fee of $1,926.46.[26] Similarly, while some current fees increased with the number of lots/poles covered, Ausgrid's proposal is that these services are now charged at the same rate regardless of size or based on a simple / complex differentiation.

We discussed these concerns with Ausgrid and asked them to provide potential bill impacts for customers given that many projects involve numerous services. Ausgrid generated a number of stylised projects showing that charges for some projects would increase substantially. For example an underground urban residential subdivision (vacant lots): 5 lots would increase from $1,521 to $3,524. However the charges for other projects are expected to decrease, for example a rural overhead subdivision: 9 poles with substation is expected to decrease from $4,442 to $3,524 (see Appendix D).

Ausgrid submitted that its proposed charges were developed to be more cost reflective of the effort involved in providing the service and to reduce cross subsidy between

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[25] Ausgrid, *Response to information request #040 - ACS - Security Lighting, Engineering Manager, Metering - 20180816 - PUBLIC,* August 2018.

[26] Ausgrid, *Response to information request #008 - Alternative Control Services - Ancillary Network Services*, July 2018.

services.[27] Ausgrid provided analysis showing that they were making significant losses on administrative and design-related services. Its proposed charging approach aimed at shifting from a granular charge based around development type to one that reflected the 'effort' involved in providing services and their technical complexity. We consider it would be preferable for Ausgrid to have made these arguments in its initial proposal. Nevertheless, we find this analysis has merit. We expect charges to customers to be efficient to avoid cross-subsidy. In circumstances whereby Ausgrid is under-recovering its costs for some services then other customers are financing subsidies through charges for other services.

We also accept Ausgrid's argument that the changes described above should improve transparency for Accredited Service Providers (ASPs) undertaking customer connections. This may help to address concerns we have received from ASPs in relation to Ausgrid's provision of ANS, including confidential and public submissions for this regulatory proposal.[28] We note while the AER is responsible for classifying services and regulating the prices that Ausgrid charges for its contestable services we cannot unilaterally introduce the concept of an ASP level 4 or impose timeliness standards.[29]

We urge Ausgrid to ensure its charging practices are transparent to avoid unexpected charges or bills to ASPs. Ausgrid should provide clear information on quoted services including the types and amounts of labour so stakeholders may understand their bill.[30] We note Ausgrid advised that it can now better track hours charged against effort expended on a per project basis for certain service areas and is planning to roll improvements out to other service areas.

On balance, based on the discussion above, we accept Ausgrid's rationale for consolidating its services, even though it will increase charges to some customers (but reduce charges to others). While we do not make any conclusions on particular complaints, we encourage Ausgrid to ensure that it charges its services in line with their public descriptions and that fixed fees for complex services are not imposed as a default on all services of that type. We note some complaints have referred to Ausgrid charges being applied in a blanket form, despite public descriptions indicating that they are not mandatory.[31]

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27 Ausgrid, *Response to information request #031 - Consolidation of Ancillary Network Services, Appendix A - Worked examples/scenarios - Proposed fees/service consolidation*, July 2018.

28 Power Design and Energy Projects Pty Ltd, *Australian Energy Regulator 2019-2024 regulatory period submission - ancillary network services*, August 2018.

29 Power Design and Energy Projects Pty Ltd, *Australian Energy Regulator 2019-2024 regulatory period submission - ancillary network services*, August 2018.

30 For example, Power Design and Energy Projects' submission puts forward that Ausgrid has described its administrative services in such a way that it can charge an engineering rate rather than the lower administrative rate (see page 4).

31 See Power and Design's submission pages 40 and 41 in relation to the connection/relocation process facilitation quoted charge.

Fee-based services - Security Lights

Security lighting (nightwatch lighting) is now treated as an ancillary network service to avoid having the service ring-fenced from the regulated distributed network services (it was previously unregulated). Ausgrid proposed a security lighting model which will see new customers pay a one-off installation cost and a monthly rental charge which covers the costs of operating, maintaining and replacing the asset, as well as electricity usage. These charges vary depending on the level of illumination the customer requests.[32] These charges will apply to new contracts from 1 July 2019 with existing customers grandfathered.

We compared the security lighting proposals provided by the three NSW DNSPs.[33] While the models differed substantially in respect of proposed capital recovery periods, our analysis of capital costs for the comparable security lighting service showed similar proposed charges.

Ausgrid's proposed monthly charges incorporated recovery of the capital component of their service within a two year period. We were initially concerned that proposed charges did not reduce once capital recovery was complete, however Ausgrid clarified that charges would reduce once capital recovery was complete and provided a set of monthly charges that would apply once this occurred.[34]

A comparison of the monthly charges between Ausgrid and Endeavour, once capital expenditure is paid out or removed, shows that the charges are broadly consistent.

Table 15-3 Comparison of proposed monthly charges for security lighting, excluding capital expenditure

Light size	Ausgrid		Endeavour	
	Installation cost	Proposed monthly charge (post 2 years)	Installation cost[1]	Proposed monthly charge (maintenance component only)
250W	$400	$46.56	$300	$50.79
400W	$400	$60.24	$300	$61.71
1000W	$400	$118.93	$300	$109.43

Source: Ausgrid, *Response to information request #040 - ACS - Security Lighting, Engineering Manager, Metering - 20180816 - PUBLIC,* August 2018; Endeavour, *NightWatch Model (Long Term) - Public;* AER Analysis.

1 Endeavour installation costs are taken from its long term model as we consider they are more comparable as they are for contracts of a minimum of 24 months. All charges are excluding GST.

32 Ausgrid, *Ausgrid's Regulatory Proposal - Attachment 8.05 - Ausgrid's ancillary network services*, April 2018, p. 10.

33 Essential Energy submitted that it expected to earn almost negligible revenue from the provision of these services so a comparison to its inputs may be of limited benefit.

34 Ausgrid, *Response to information request #040 - ACS - Security Lighting, Engineering Manager, Metering - 20180816 - PUBLIC,* August 2018.

Therefore the most significant difference between Ausgrid and Endeavour is in how they are recovering their capital expenditure. Ausgrid is recovering over two years, whereas Endeavour is recovering over one year for short-term customers (and charging a significant installation charge) or five years for long-term customers. Ausgrid (and Endeavour) submitted that they have no obligation to provide these services, nor have customers been obliged to acquire them.[35] We also note that there may be substitute services available for customers.

On this basis, given that Ausgrid and Endeavour are broadly comparable and customers have some choice in procuring these services, we accept Ausgrid's proposed monthly charges and installation charges. These charges are found in Appendix A. As per other fee-based services, these prices will be subject to the form of control outlined in Attachment 13 – Control mechanism.

15.5 Public Lighting

Public lighting services include the design, financing, procurement and construction of public lighting installations. Ausgrid has more than 250,000 public lights servicing 90 customers including councils, community groups and government associations.[36]

Public lighting charges are composed of pre 2009 and post 2009 capital charges and operational maintenance charges. In terms of capital charges, the pre 2009 assets were developed using a building block approach. Those are depreciated in accordance with the building block model. This model rolls forward the regulatory asset base (RAB) with allowance for depreciation, indexation and assets that are written off. It calculates the return of capital for each public lighting customer as well as the residual values of components that are replaced before the end of their economic life. Capital charges are set according to when the asset was either installed by the distribution network service provider or gifted to them and the type of asset (pole, luminaire, bracket or outreach). Capital charges for post 30 June 2009 assets are determined using an annuity capital charge approach. In terms of maintenance costs, parameters such as asset failures rates, spot and bulk maintenance cycles, labour rates and traffic controller assumptions influence the operational charges for public lighting services

15.5.1 Public lighting—Draft decision

Our draft decision is to:

- maintain public lighting as an alternative control service because a defined group of customers–local councils and road authorities–purchase these services
- accept Ausgrid's public lighting proposal except for some elements

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35 Ausgrid, *Ausgrid's Regulatory Proposal - Attachment 8.05 - Ausgrid's ancillary network services*, April 2018, p. 10. Endeavour Energy, *Endeavour Energy - 0.01 Regulatory Proposal - April 2018 - Public*, p.208.

36 Ausgrid Proposal, 2019-24, p 162.

- apply our draft decision WACC and labour escalators as we are applying to standard control services[37]
- apply revised luminaire failure rates to the calculation of operational expenditure for public lighting as the proposed failure rates for most luminaires were too high to be considered efficient
- smoothed the operational charges and incorporate a zero value X factor for all lamp types.
- accept Ausgrid's proposed labour rates, input costs and overhead allocations.

Our draft decision public lighting charges are set out in Appendix B.

15.5.2 Public lighting—Reasons for draft decision

Form of Control

We maintain our final Framework and Approach position to apply price caps for individual public lighting services as the form of control. This means a schedule of prices is set for the first year. For the following years the previous year's prices are adjusted by CPI and X factor. For the purpose of our draft decision for public lighting charges we have applied smoothing to the capital and maintenance charges and therefore the X factor is nil.

Ausgrid proposed individual X factors representing labour escalators for each lamp type for each regulatory year. Under Ausgrid's proposal there would not be one overall X factor for maintenance charges. Rather, there would be multiple X factors for each lamp type. We refer to Ausgrid's 2014–19 draft and final determinations in which we did not provide individual X factors for public lighting prices[38]. Consistent with our previous decision, we have not allowed for individual X factors for the operational component of public lighting charges.

Our draft decision is to apply revised labour escalation rates and smooth the prices for the control period. We consider this approach involves less complexity and provides stakeholders with consistency in the movement of charges from one regulatory year to the next. We applied a similar approach to calculate pre 2009 and post 2009 capital charges.

The control mechanism formula is set out in Attachment 13 – Control mechanism of this draft decision.

Submissions

We consider Ausgrid's public lighting proposal is transparent and encourages participation from stakeholders. Public lighting customers across multiple jurisdictions

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[37] Attachments 3 and 6 set out our reasoning in respect of our WACC and labour escalation draft decisions

[38] AER, *Ausgrid Final Decision 2014-19*, p. 17.

have at times struggled with the large volume of information considered confidential in networks' complex pricing models. This resulted in contentious reviews of public lighting models. However, the Southern Sydney Regional Organisation of Councils (SSROC), which represents councils that encompass around 90 per cent of Ausgrid's street lights, has commended the effort by Ausgrid to improve transparency, its consultation with stakeholders and its general approach to public lighting for the 2019–24 regulatory period.[39]

We note support from stakeholders for Ausgrid's transition to LED lights. NSW Roads and Maritime Services (RMS) submitted that LED lighting now is lower cost than other legacy lighting types and that we should not be considering pricing proposals for non-LED lighting. RMS also expressed support for the transition to LEDs by the NSW DNSPs.[40] SSROC similarly submitted that Ausgrid should withdraw its pricing proposals for non-LED lights.[41]

We note that we are required to make a decision on the efficiency of pricing proposals put forward by Ausgrid rather than ruling out whole categories of lighting technologies.

The City of Sydney also welcomed Ausgrid's accelerated LED replacement plan for Sydney, and encouraged further work replacing public lighting on main roads and in commercial centres with LEDs.[42]

Minamata Convention - obsolesce of mercury vapour lamps

One of the other issues raised by SSROC was the large number of mercury vapour lamps used by Ausgrid. Under the Minamata Convention, production of mercury vapour lamps will be banned in most countries from 2020.

Ausgrid has initiated steps to replace its stock of in-use mercury vapour lamps. It submitted that it expects to replace all mercury luminaires with LEDs by 2020.

This plan, combined with strong support from stakeholders, encourages us to consider that the parts of the public lighting proposal relating to LED lights should be accepted. We also reviewed the labour rates and input costs of luminaires proposed in the model. While we updated several inputs (including WACC and labour escalation rates) we are satisfied with Ausgrid's modelling overall and consider inputs such as overhead ratios and input cost ratios are efficient.

Incorrect WACC

We found that the public lighting model - Attachment 8.08 submitted by Ausgrid was incorrect. The pre-tax nominal WACC used for calculating pre 2009 charges was provided as 7.15 per cent whereas the correct figure was 6.81 per cent. Ausgrid has

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39 Submission by the Southern Sydney Regional Organisation of Councils, 10 August 2018.

40 Submission by NSW Roads and Maritime Services, 10 August 2018.

41 Submission by the Southern Sydney Regional Organisation of Councils, 10 August 2018.

42 Submission by the City of Sydney, 9 August 2018.

acknowledged the error and provided us with an updated model[43] which showed a lower capital expenditure compared to the projections provided on April 2018 model. The pre 2009 capital charges have not been published with this draft decision due to confidentiality claims and shall be provided to Ausgrid directly.

Failure rates

SSROC raised concerns around theoretical failure rates proposed by Ausgrid.[44] It notes total fault rates are on average 7.3 per cent per annum in recent years. In comparison, high theoretical failure rates in the range of 15 per cent to 46 per cent are increasing maintenance costs significantly for traditional luminaires. SSROC further notes that Ausgrid has not reconciled its assumed theoretical rates to actual failure data.

Ausgrid submitted it did not have traditional lamp failure rates for its four year bulk replacement cycle and has therefore adopted theoretical failure rates for its pricing model. We note that Ausgrid's proposed failure rates for some luminaires with higher volumes is in the range of 23 per cent. The same luminaires had much lower failure rates in the range of 4 to 6 per cent in our 2014–19 final determination.

We consider Ausgrid's failure rate assumptions for most traditional luminaire types are not efficient given the expected life of lamps and technological advancements that are improving lamp life. The failure rates approved in our 2014–19 determination were derived by comparing performance standards across a number of distributors. For most luminaires, except sodium vapour lamps, the failure rates approved in our 2014–19 determination are lower than those now proposed by Ausgrid.[45] We have therefore adjusted Ausgrid's proposed failure rates by substituting the rates approved in our 2014–19 final determination, for all luminaires other than sodium vapour lamps.

Ausgrid's proposed theoretical failure rate of 6.52 per cent for single sodium vapour luminaires is efficient when benchmarked against other distributors. The sodium vapour luminaires rated at 150W, 250W and 400W are quite common in the Ausgrid network. While proposed failure rates for dual lamp luminaires are in the higher range of 12 per cent to 23 per cent, the volume of these lamps is much smaller. Our draft decision is to accept Ausgrid's proposed failure rates for both single and double sodium vapour luminaires.

Our draft decision luminaire failure rates for Ausgrid are detailed in Table 15-11.

NSW public lighting code

The NSW Government has updated the Public Lighting Code (Code).[46] The revised Code commences on 1 July 2019. Under the revised Code, compliance is mandatory

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43 The updated model was submitted by Ausgrid in September 2018.

44 Submission by the Southern Sydney Regional Organisation of Councils, 10 August 2018.

45 Columns 'AH' and 'AJ' of Ausgrid's Public Lighting Model - Opex Build-up Model, "Input Inventory Sheet"

46 Email received on 16 October 2018 from NSW Energy.

for public lighting service providers as a condition to the electricity distribution licence issued under the *Electricity Supply Act 1995* (NSW). The Code has been updated at the final stage of our draft decision assessment of Ausgrid's public lighting proposal. It will be open to Ausgrid to incorporate changes to its public lighting proposal with its revised regulatory proposal.

15.6 Metering services

Ausgrid's type 5 and 6 metering services are classified as alternative control services. Ausgrid's type 7 metering services, however, are classified as standard control services.[47] Metering assets are used to measure electrical energy flows at a point in the network to record consumption for the purposes of billing.

Since introduction of the Power of Choice reforms on 1 December 2017, Ausgrid is no longer responsible for installation of new meters and may not install any type 5 or type 6 meters from 1 April 2018. We are responsible for setting prices for Ausgrid's non-installation metering services.

Prices for metering are based on the building block model. A total revenue requirement is calculated using the building block model, being driven mostly by forecast opex and capex costs. Starting with prices from the year before the start of the regulatory control period, the movement in prices year on year throughout the regulatory control period (CPI less the x factor) is solved so that charges multiplied by forecast customer numbers equal the revenue required under the building block model on a net present value basis.

15.6.1 Metering services—Draft decision

Service classification - Metering services

Our draft decision is to classify type 5 and 6 metering services as alternative control services. This is consistent with our final Framework and Approach and Ausgrid's proposed classification of metering services.

Form of control - Metering services

Our draft decision is to apply a price cap form of control for metering services. This is consistent with our final Framework and Approach and Ausgrid's proposed form of control for metering services. Under a price cap form of control, we set a schedule of prices for the first year of the regulatory period 2019–20. For 2020–21 and subsequent years the prices for metering services are determined by adjusting the previous year's prices using the formula set out in Attachment 13.

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[47] AER, *Framework and approach* Ausgrid, Endeavour and Essential Energy *Regulatory control period commencing 1 July 2019*, July 2017, p. 27

Metering services

Ausgrid proposed to set metering charges using separate movements for the capital and non-capital components. The capital component was proposed to decrease by 25.46 per cent and then remain unchanged for the regulatory control period. The non-capital component was proposed to increase by 2.9 per cent initially and then by 6.88 per cent throughout the regulatory control period.

Our draft decision is:

- the capital component will decrease by 28.26 per cent and remain unchanged for the regulatory control period
- the non-capital component will increase by 1.78 per cent in the first year of the regulatory control period then increase by 0.1 per cent each year throughout the regulatory control period.

Our draft decision is to approve the following elements of Ausgrid's metering proposal which we consider are consistent with the pricing principles and promotion of the national pricing objective:

- Opening metering asset base

  Our draft decision is to approve an opening metering asset base (MAB) value as at 1 July 2019 of $218.23 million ($nominal). Our decision is based on our assessment of Ausgrid's application of the Roll Forward Model.

- Depreciation

  Our draft decision is to accept the proposed remaining lives of the metering asset categories.

  Consistent with our draft decision for standard control services, we specify that forecast, as opposed to actual, depreciation will apply to Ausgrid's MAB.

- Rate of return

  Our draft decision accepts that the same weighted average cost of capital (WACC) and imputation credit (gamma) values for standard control services should apply to alternative control metering services.

  See attachments 3 and 4 for our decision on WACC and gamma values, along with our reasons.

  However, unlike for standard control service, we will not be annually adjusting Ausgrid's return on debt.

- Forecast capex

  Our draft decision is to accept Ausgrid's proposed forecast capex building block of $21.03 million.

However, we consider Ausgrid's metering opex proposal was not adequately justified. We are not satisfied the methodology Ausgrid used was appropriate. Therefore, we are replacing Ausgrid's forecast opex of $105.4 million with $92.6 million ($2018–19). This is discussed below.

15.6.2 Metering services—Reasons for draft decision

Structure of Metering Charges

Our draft decision is to approve Ausgrid's proposed metering charging structure:

- This is an annual charge comprising two components:
    - capital—metering asset base (MAB) recovery and tax
    - non-capital —operating expenditure (opex).

These charges are then further divided into rates depending on the customer and tariff type such as residential inclining block or small business time of use.[48]

This structure is consistent with the approved structure in the current regulatory period, with the exception that an upfront charge for meter installation no longer applies as Ausgrid is no longer responsible for installing meters.

This structure is both reflective of the actual costs involved in the provision of metering services and, due to being consistent with current charges, easy to understand.

Forecast Capex

Ausgrid stated in its regulatory proposal that it has not proposed any metering capex for the 2019–24 regulatory control period.[49] However, non-network capex (not directly related to its metering assets) of $21.03 million ($2018–19) has been included in Ausgrid's Post-tax Revenue Model and by extension its charges for the 2019–24 regulatory control period.

This represents an average capex per year of $4.21 million ($2018–19) compared against $5.28 million ($2018–19, excluding capex on meters) in the 2014–19 regulatory control period.[50] Ausgrid forecast a reduction in capex as the metering population declines.

We consider this level of capex is justifiable in the context of Ausgrid's historical expenditure.

Regulatory Asset Base and Asset Lives

Ausgrid has forecast forward its asset base using the AER's approved Roll Forward Model and used standard approved asset lives. We consider this to be consistent with best practice.

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48 Ausgrid, *Ausgrid's metering services*, April 2018, p. 4

49 Ausgrid, *Ausgrid's Regulatory Proposal 1 July 2019 to 30 June 2024*, April 2018, p. 164

50 Ausgrid, *Attachment 8.02 Metering Roll Forward Model*, April 2018, "RFM Input" Tab

Forecast Opex

Our draft decision is to substitute Ausgrid's proposed opex allowance $105.4 million with $92.6 million ($2018–19).

Table 15-4 AER draft decision on Ausgrid's metering opex allowance

Financial Year	FY14-FY17	FY20	FY21	FY22	FY23	FY24
Meter Population	1,640,957	1,302,002	1,180,002	1,058,002	936,002	814,002
Fitted Opex	$25,171,315[51]	$21,421,287	$20,001,115	$18,535,687	$17,018,055	$15,439,127
Labour Adjustment		$234,083	$383,716	$551,532	$687,239	$751,335
AER Opex Allowance		$21,655,370	$20,384,831	$19,087,219	$17,705,293	$16,190,461

Ausgrid proposed that, as its meter population reduces, it will experience a reduction in opex efficiency. In other words, opex per customer would increase even though overall opex would decrease. This recognises that there are some fixed costs which remain fixed and have to be spread over a smaller number of meters, while the time spent on reading meters will increase as the distance between meters (and hence travel time) increases.[52]

Ausgrid engaged Sankofa Consulting (Sankofa) to assess the effect of diseconomies of scale. The result of the analysis is that Sankofa recommended a productivity adjustment be applied to Ausgrid's metering opex of 0.72, described as "a 1 per cent change in the meter population results in a 0.72 per cent change metering opex".[53]

We considered Ausgrid's proposed metering opex using a top-down 'base–step–trend' approach. This is our preferred approach to assessing most opex categories.[54] In particular, we:

- used the 'revealed costs' approach as the starting point and removed any non-recurrent expenditure
- adjusted for any step changes if we were satisfied that a prudent and efficient service provider would require them
- trended forward the base opex (plus any step changes).

We also had regard to benchmarking when considering Ausgrid's proposed metering opex.

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51 This opex has been adjusted to remove the change in fixed costs expected in the 2019–2024 regulatory control period as per the Sankofa report.

52 Ausgrid, *Ausgrid's metering services*, April 2018, p. 10

53 Sankofa, *Independent appraisal of diseconomies of scale*, January 2018, p. 33

54 AER, *Better regulation: Expenditure forecast assessment guideline for distribution*, November 2013, p. 32.

Further, with particular regard to the productivity adjustment, we considered:

- whether Sankofa's analysis is meaningful
- whether Ausgrid's implementation of that analysis is accurate
- how the resultant productivity adjustment benchmarks against Ausgrid's peers.

Base

Ausgrid has proposed a base metering opex of $15.58 per customer. This is based on revealed costs from 2013–14 to 2016–17. The result involves calculating the opex per customer for each of the four years separately and then using an unweighted average of these numbers.[55]

We consider that a more meaningful cost would be derived by taking the sum of opex across the period, divided by the number of customers. This gives a very similar level of $15.56 opex per customer.

Step

Ausgrid did not propose step changes.[56] However, the Sankofa report has conducted a bottom up analysis which shows that that fixed cost are expected to reduce from $2.21 million in financial year 2017 to $1.17 million ($2016–17) in the 2019–24 regulatory control period.[57] We consider it appropriate to include this negative step change.

Trend

Ausgrid has trended its opex based on the BIS Oxford forecast.[58] Our draft decision is, consistent with our approach for Standard Control Services, to apply the average of the Deloitte Access Economics and BIS Oxford Economics wage price indices.

Sankofa analysis

We are satisfied with the steps undertaken by Sankofa. It involves multiple approaches to the analysis and is overall rigorous.

We note that Sankofa derives a relationship between change in meter population and change in opex by comparing an independent variable of the natural log of opex (constructed on a bottom up basis) and a dependent variable of the natural log of forecast meter numbers.[59] This is undertaken from FY18 to FY24.

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55 Ausgrid, *Ausgrid's metering services*, April 2018, p. 8

56 Ausgrid, *Ausgrid's metering services*, April 2018, p. 8

57 Sankofa Consulting, *Diseconomies of Scale in Meter Reading; The impact of declining meter density on meter reading costs*, January 2018, p. 42

58 Ausgrid, *Metering Post Tax Revenue Model (PTRM) Distribution*, April 2018, Inputs Tab

59 Sankofa Consulting, *Diseconomies of Scale in Meter Reading; The impact of declining meter density on meter reading costs*, January 2018, p. 42

We note that there is a step change in that period.[60] This suggests some of the change being captured with Sankofa's fit of the curve will in fact be driven by the change in fixed costs and not as a result of the change in meter numbers. While we acknowledge that Sankofa intended to provide a single easy-to-implement recommendation from its analysis, we consider that having a step change to capture the fixed cost change separately in addition to a rate of change as a result of diseconomies of scale would be a superior fit.

Table 15-5 shows forecast meter numbers from financial year 2018 to financial year 2024 and the natural log thereof. This is compared against the calculated opex taken from the Sankofa report, removing the result of the step change due to a change in fixed costs and then taking the natural log of that figure. This allows us to replicate the results of the Sankofa analysis, with the removal of the effect of the step change, and therefore see the underlying relationship between meter numbers and opex using Sankofa's assumptions.

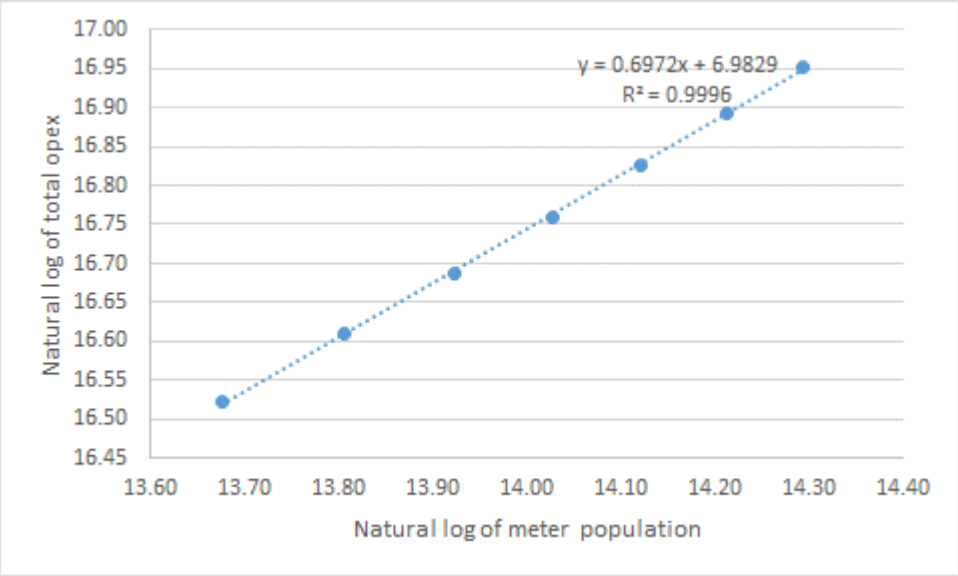
Table 15-5 Ausgrid reworked metering opex using assumptions from Sankofa report, removing step change

	FY18	FY19	FY20	FY21	FY22	FY23	FY24
Meter forecast	1,610,941	1,487,045	1,357,918	1,235,918	1,113,918	991,918	869,918
Natural Log of Meter Forecast	14.29	14.21	14.12	14.03	13.92	13.81	13.68
Adjusted Opex - Sankofa Report	23,014,469	21,694,877	20,312,212	19,000,101	17,676,827	16,337,884	14,978,592
Natural Log of Total Opex	16.95	16.89	16.83	16.76	16.69	16.61	16.52

Figure 15-2 shows the result of applying fitting a line to the opex as per Table 15-5 as it relates to forecast meter numbers. The result shows a re-estimation of the productivity factor, using the same assumptions Sankofa applied, but with the step change for fixed cost changes removed.

[60] Sankofa Consulting, *Diseconomies of Scale in Meter Reading; The impact of declining meter density on meter reading costs*, January 2018, p. 34 Table 16

Figure 15-2 Fitting curve to results of updating Sankofa report opex as



The result of fitting a curve to the updated opex estimate gives a productivity factor of 0.6972 in contrast to Sankofa's productivity factor of 0.7196.[61] The two numbers are similar, which is to be expected given that only the step change has been altered. Our calculated productivity factor is lower since, in the Sankofa analysis, when opex reduced due to fixed costs changes meter numbers were also reducing. This had the effect of making it appear there was a slightly greater correlation between meter number changes and opex changes.

Ausgrid Implementation

We consider Ausgrid's implementation of the Sankofa productivity adjustment does not fully represent the results of the report. Ausgrid interpreted the results of the Sankofa analysis as meaning that for each 1 per cent decrease in meter volume, a 0.72 per cent increase in metering opex occurs.[62] We do not consider that this accurately represents Sankofa's conclusion.

Figure 15-3 compares 2016–17 (the base year) and the 2019–24 period (the forecast years) on the basis of which Sankofa derived its productivity adjustment. That is, we compare the natural log of the forecast meter population and the natural log of the forecast opex. One line represents Ausgrid's forecast opex.[63] One line represents the hypothetical opex if using the fitted line as derived in the Sankofa report.[64]

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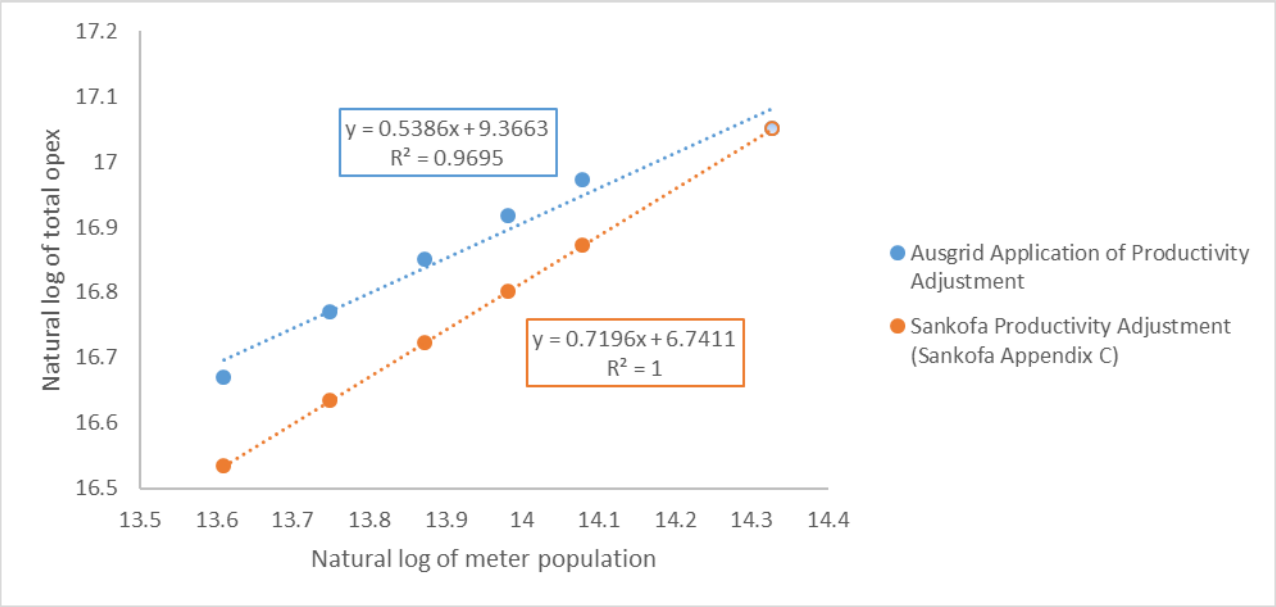
61 Sankofa Consulting, *Diseconomies of Scale in Meter Reading; The impact of declining meter density on meter reading costs*, January 2018, p. 42

62 Ausgrid, *Ausgrid's metering services*, April 2018, p. 12

63 Removing the result of trend for labour rate increases.

64 The line is of the form Y = aX + b. There is a slight difference to Sankofa's fitted line in the 'b' parameter due to the difference in base year opex between Ausgrid and Sankofa. The 'b' parameter has been adjusted in order to get

Figure 15-3 Comparing Ausgrid's implementation of Sankofa productivity adjustment with Sankofa analysis FY20–24 and base year



We believe that, rather than loading opex per customer by 0.72 per cent for each 1 per cent drop in customer numbers, Sankofa's result more accurately means that a 1 per cent reduction in customer numbers only results in a 0.72 per cent saving to opex. We have therefore reworked Ausgrid's opex calculation, applying Sankofa's actual fitted curve, adjusted as per our comments in the Sankofa analysis section above.

Benchmarking

It still remains to benchmark Ausgrid's level of productivity adjustment. Ausgrid, Endeavour and Essential all proposed productivity adjustments for the 2019–24 regulatory control period. We consider that, if efficient, the rate at which opex per customer will increase relative to a reduction in customer numbers will be comparable or lower relative to its peers.

To make this comparison we conducted a top down analysis. For each NSW distributor, we applied the following form to the relationship between forecast opex in the 2019–24 period and meter numbers:

$$\log_e Opex = (Productivity\ Factor \times \log_e Meter\ Population) + Base\ Opex\ Level$$

This means that the rate at which opex changes is relative to the rate at which the meter population changes, adjusted by a productivity factor. By applying this curve to each of the distributors, we can calculate an equivalent productivity factor on a

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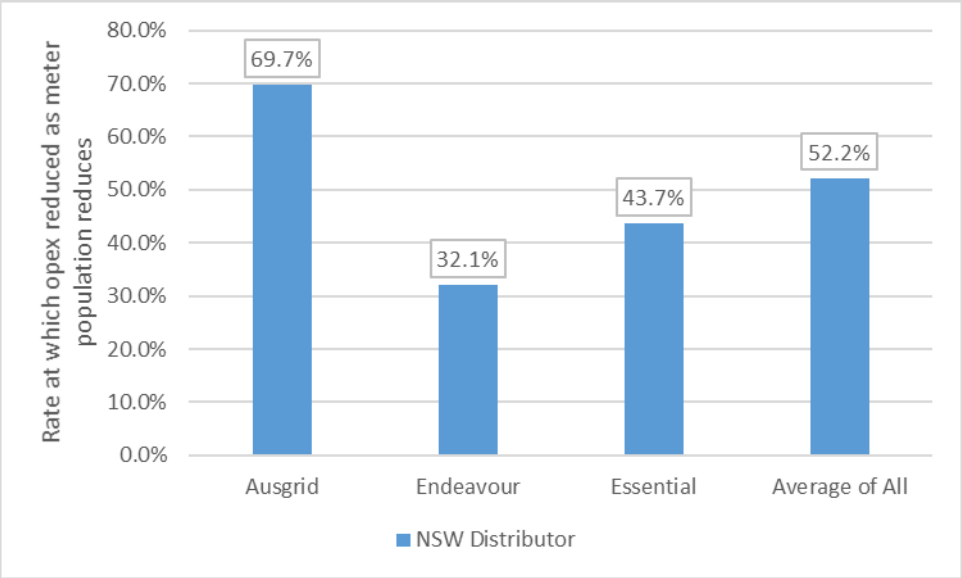
the same value in the starting year. The 'a' parameter is as per Sankofa Consulting, *Diseconomies of Scale in Meter Reading; The impact of declining meter density on meter reading cost*s, January 2018, p. 42.

common basis. We are not considering the *Base Opex Level* factor here as that will be determined by the base year chosen which we have already discussed above.

These below chart shows the *Productivity Factor* for all three businesses. Note that a **high** productivity factor indicates that as meter numbers reduce, opex reduces just as quickly (so a minimal loss in productivity which is **highly efficient**). A **low** productivity factor indicates that as meter number reduce, there is very little opex change (so a significant loss of productivity which is **inefficient**).

Figure 15-4 Comparing metering productivity adjustments proposed by NSW distributors



Ausgrid's proposed productivity adjustment is the most efficient of the three New South Wales distributors. From a benchmarking perspective, we therefore consider Ausgrid's productivity adjustment to be acceptable.

In summary - our metering opex draft decision

Our draft decision to substitute Ausgrid's proposed opex allowance of $105.4 million with $92.6 million ($2018–19) is driven by:

- our marginal adjustment to Ausgrid's proposed base opex per customer
- a $1.4 million ($2016–17) negative step change drawn from Sankofa's report
- application of the average of the Deloitte Access Economics and BIS Oxford Economics wage price indices
- our updated productivity factor based on our assessment of Sankofa's report and our conclusion on Ausgrid's implementation of Sankofa's findings
- our benchmarking assessment that the updated productivity factor for Ausgrid is reasonable.

A Ancillary network services prices

Table 15-6 Fee based ancillary network service prices for 2019–20, AER draft decision ($2019–20)

Service	Type	Ausgrid's proposed 2019–20 price	AER Draft Decision
METERING RELATED FEES			
Metering Services			
Metering Site Establishment	Fixed	$60.78	$59.34
Special Meter Reading	Fixed	$11.24	$11.24
Type 5-6 Meter Test	Quoted	$155.10	$151.40
Types 5-7 non-standard Meter Data Services	Fixed	$16.04	$15.66
Emergency maintenance of failed metering equipment not owned by the network	Fixed	$181.87	$177.53
Off peak conversion	Fixed	$230.14	$151.40
Disconnection Visit (Site Visit Only)	Quoted	$155.10	$151.40
Disconnection Completed	Quoted	$155.10	$151.40
Disconnection Visit (Disconnection Completed - Technical/ Advanced)	Quoted	$155.10	$151.40
Pillar/ Pole Top Disconnection Completed	Fixed	$429.72	$264.96
Pillar/Pole Top Site Visit	Fixed	$358.83	$350.28
Reconnection/ Disconnection Outside Normal Business Hours	Fixed	$110.82	$108.18
Network Tariff Change Request	Fixed	$51.62	$51.62
Recovery of Debt Collection Costs - Dishonoured Transactions	Fixed	$28.30	$27.63
Attendance at customers' premises to perform a statutory right where access is prevented	Fixed	$87.37	$85.29
Vacant Property Disconnection	Fixed	$157.83	$154.07
Vacant Property Site Visit	Fixed	$40.29	$39.33
New metering related fees			
Distributor arranged outage for purpose of replacing metering - Simple	Fixed	$249.86	$244.31
Distributor arranged outage for purpose of replacing metering - Complex	Quoted	$103.24 $155.10	$103.24 $151.40
Distributor arranged outage for purpose of replacing metering - Site visit only	Quoted	$155.10	$151.40
Correction of metering and market billing data	Fixed	$51.62	$51.62

Service	Type	Ausgrid's proposed 2019–20 price	AER Draft Decision
Final read after type 5 meter equipment removed	Fixed	$72.39	$69.58
Type 5 and 6 CT testing	Quoted	$155.10	$151.40
Type 5 and 6 CT recovery	Quoted	$155.10	$151.40
NON-METERING RELATED FEES			
Design related services			
Administration of Contestable Works - General	Fixed	$934.20	$933.29
Administration of Contestable Works - Additional	Quoted	$103.34	$103.24
Administration of Pioneer Schemes	Fixed	$1,352.57	$1,292.67
Design Information - Simple	Fixed	$720.97	$687.36
Design Information - Standard / Complex	Quoted	$205.99 $244.80	$196.39 $216.02
Design Information - Asset Creation	Base Charge + per asset	$27.91 $10.33	$27.87 $10.32
Design Certification - General	Fixed	$1,991.94	$1,899.09
Design Certification - Other	Quoted	$205.99 $244.80	$196.39 $216.02
Connection application related services			
Technical assessment - Applications or relocations	Fixed	$425.69	$410.23
Preliminary Enquiry	Quoted	$205.99 $244.80	$196.39 $216.02
Connection Offer - Basic	Fixed	$17.56	$17.56
Connection Offer - Standard	Fixed	$51.67	$51.62
Connection Offer - Negotiated	Quoted	$244.80	$216.02
Planning Studies	Quoted	$205.99 $244.80	$196.39 $216.02
Site Inspection	Fixed	$506.74	$483.12
Technical Support - Permanently Unmetered Supply (PUMS)	Quoted	$205.99	$196.39

Service	Type	Ausgrid's proposed 2019–20 price	AER Draft Decision
Registered participant support	Quoted	$244.80	$216.02
Contestable network commissioning and decommissioning			
Commissioning assets - Simple	Fixed	$1,752.62	$1,666.44
Commissioning assets - Standard	Fixed	$3,458.04	$3,293.63
Commissioning assets - Complex	Quoted	$165.71 $205.99 $155.26	$157.11 $196.39 $151.40
Decommissioning assets	Quoted	$165.71 $155.26	$157.11 $151.40
Access permits and clearances to work			
Simple permit or clearance to work	Fixed	$1,325.73	$1,256.88
Complex permit or clearance to work	Quoted	$165.71 $205.99 $155.26	$157.11 $196.39 $151.40
Access permit - cancellation - simple	Fixed	$513.72	$487.04
Access permit - cancellation - complex	Fixed	$1,176.58	$1,115.48
Install / remove overhead network earths	Quoted	$155.26	$151.40
Access - standby person	Quoted	$155.26	$151.40
Access - confined spaces entry permit	Quoted	$165.71 $155.26	$157.11 $151.40
Process and project facilitation	Quoted	$205.99 $244.80	$196.39 $216.02
Specialist services	Quoted	$244.80	$216.02
Notices of arrangements			
Notice of arrangements	Fixed	$463.82	$446.92
Notice of arrangements (early)	Quoted	$103.34 $205.99	$103.24 $196.39

Service	Type	Ausgrid's proposed 2019–20 price	AER Draft Decision
Network related property services			
Property Tenure	Quoted	$103.34 $205.99 $244.80	$103.24 $196.39 $216.02
Network safety service and security			
Rectification works			
Rectification of illegal connections	Fixed	$142.16	$139.02
Provision of service/additional crew	Quoted	$155.10	$151.40
Fitting of tiger tails	Quoted	$155.10 + torapoli hire	$151.40 + torapoli hire
High load escorts	Quoted	$155.10	$151.40
Temporary Power	Quoted	$155.10	$151.40
Bushfire Mitigation works	Quoted	$155.10	$151.40
Neutral integrity test	Quoted	$155.10	$151.40
De-energisation of wires for safe approach	Quoted	$155.10	$151.40
Rectification of network related customer fault	Quoted	$155.10	$151.40
Cable termination and relocation works			
11 kV cable termination at zone substation	Quoted	$155.10	$151.40
33 kV cable termination at zone substation	Quoted	$165.55 $155.10 $244.55	$157.11 $151.40 $216.02
Complex customer initiated asset relocation	Quoted	$165.55 $155.10 $244.55	$157.11 $151.40 $216.02
Inspection services − Private electrical installations and accredited service providers (ASPs)			
Inspection of level 1 ASP works			
Network Construction - Level 1 ASP works	Quoted	$165.71	$157.11
Re-inspection – Level 1 ASP works	Quoted	$165.71	$157.11

Service	Type	Ausgrid's proposed 2019–20 price	AER Draft Decision
Inspection of level 2 ASP works			
Level 2 ASP works (NOSW) - A Grade	Fixed	$32.46	$32.09
Level 2 ASP works (NOSW) - B Grade	Fixed	$58.98	$57.24
Level 2 ASP works (NOSW) - C Grade	Fixed	$191.55	$182.92
Re-inspections - Level 2 ASP works	Quoted	$183.28	$174.67
Remedial actions - ASP Contestable works			
Investigate, review & implementation of remedial actions associated with ASP's connection works	Quoted	$244.80	$216.02
Inspection of electrical contractor works			
Service size >100A and mandatory inspections	Quoted	$183.28	$174.66
Re-inspection of electrical contractor works	Quoted	$183.28	$174.67
Authorisation of ASPs			
ASP 1 Authorisations			
ASP Level 1 - Authorisation/Re-authorisation (Annual Fee)	Fixed	$322.31	$293.46
ASP Level 1 - Recording of an additional company to existing authorisation	Fixed	$51.67	$51.62
ASP Level 1 - Upgrade to include additional class	Fixed	$174.07	$159.63
ASP Level 1 - Company Authorisation - Initial	Fixed	$663.67	$591.68
ASP Level 1 - Company Re-authorisation (Annual Fee)	Fixed	$122.40	$108.02
ASP 2 Authorisations			
ASP Level 2 - Initial Authorisation	Fixed	$766.20	$731.68
ASP Level 2 - Re-authorisation (Annual Fee)	Fixed	$351.91	$338.90
ASP Level 2 - Additional authorisation	Fixed	$103.34	$103.24
ASP 3 Authorisations			
ASP Level 3 - Authorisation/Re-authorisation (Biennial Fee)	Fixed	$77.51	$77.43
Consultancy and review services			
Engineering consultancy	Quoted	$288.37	$261.74
Approved materials list application	Quoted	$244.55 $288.37	$216.02 $261.74

Service	Type	Ausgrid's proposed 2019–20 price	AER Draft Decision
Training			
Training - 5 to 9 participants	Fixed	$165.55	$157.11
Training - 10 to 14 participants	Fixed	$96.57	$91.65
Training - 15 or more participants	Fixed	$57.94	$54.99
Complex training	Quoted	$342.37	$302.43
ASP material sales	Purchase price + support costs adjustment	Confidential	Accept the confidential support costs adjustment provided by Ausgrid

Source: Ausgrid alternative control services models 8.06.1 to 8.06.12; AER analysis.

Table 15-7 New services introduced by Ausgrid for 2019–24 (outside of service consolidation and rationalisation)

Service Group / New Service
Design related services
Administration of contestable work
Pioneer Schemes
Design information
Asset creation
Connection application related services
Technical assessment and preliminary enquiry
Technical assessment - Applications or relocations
Negotiated Connection Offer
Other connection application related services
Site inspection
Technical Support - Permanently Unmetered Supply (PUMS)
Registered participant support

Service Group / New Service
Contestable network commissioning and decommissioning
Decommissioning assets
Decommissioning assets
Access Permit, oversight and miscellaneous services
Access permits and clearances to work
Cancellation - Simple
Cancellation - Complex
Install / remove overhead network earths
Other access permits and clearances to work
Access - confined space entry permit
Specialist services
Notices of arrangements
Notice of arrangements (early)
Inspection services - Private electrical installations and accredited service providers
Inspection of electrical contractor works
Service size >100A and mandatory inspections
Authorisation of ASPs
Level 1 ASP
Recording of an additional company to existing authorisation
Upgrade to include additional class
Company Authorisation - Initial
Company Re-authorisation (Annual Fee)
Level 2 ASP
Initial Authorisation
Additional authorisation
Level 3 ASP
Authorisation/Re-authorisation (Biennial Fee)

Service Group / New Service
Network safety services and security
Rectification works
Bushfire mitigation works
Neutral integrity testing
De-energisation of wires for safe approach
Rectification of network related customer fault
Cable termination and relocation
11kV cable termination at zone substation
Sub-transmission cable termination at zone substation
Complex customer initiated asset relocation
Consultancy and review services
Engineering consultancy
Approved materials list application
Training
Training - 5 to 9 participants
Training - 10 to 14 participants
Training - 15 or more participants
Complex training

Source: Ausgrid, *Response to information request #051 ANS - new services and changes to ASP charging - 20180924 - PUBLIC,* October 2018.

Table 15-8 - Fee-based services - security lighting, $2019–20

Light size	Installation cost	Monthly charge (ex-GST) - first 2 years)	Monthly charge (ex-GST) - post 2 years
Small	$400	$82.91	$46.56
Medium	$400	$97.01	$60.24
Large	$400	$149.58	$118.93

Table 15-9 Quoted service ancillary network services hourly labour rates for 2019–20, draft decision ($2019–20)

Ausgrid/AER labour category	AER draft decision - maximum total hourly rate (base plus on-costs plus overheads) escalated to 2019–20
Admin (R1)	$103.24
Technical Specialist (R2)	$157.11
Engineer/Senior Engineering officer (R3)	$196.39
Field worker (R4)	$151.40
Senior Engineer (R5)	$216.02
Engineering Manager	$261.74

Note: Ausgrid and AER labour categories are the same, except Ausgrid includes an additional 'engineering manager' labour category.

Source: Ausgrid, *Attachment 8.05 - Ausgrid's ancillary network services*; Ausgrid alternative control services models; Marsden Jacob Associates, *Review of Alternative Control Services - Advice to Australian Energy Regulator - PUBLIC version*, September 2018; AER analysis.

Table 15-10 AER draft decision on X factors for each year of the 2020–24 regulatory control period for Ancillary Network Services (per cent)

	2020–21	2021–22	2022–23	2023–24
X factor	-0.71%	-1.15%	-1.28%	-1.08%

Source: AER analysis.

Note: To be clear, labour escalators themselves are positive for each year of the regulatory control period. However, the labour escalators in this table are operating as defacto X factors. Therefore, they are negative.

B Public lighting prices

Table 15-6 Public Lighting services approved charges for 2019–20, draft decision ($2019–20)[65]

Annuity prices ($2019) - Post 2009 Capital			Opex Prices ($2019)		
Description	**Proposed**	**Draft Decision**	**Description**	**Proposed**	**Draft Decision**
Bracket - 0.5	6.33	5.98	Connection - O/U	105.71	105.63
Bracket - 0.6	6.33	5.98	Connection - UGR1	96.89	96.82
Bracket - 1.0	7.81	7.38	Connection – UGR2	35.23	35.20
Bracket - 1.2	7.81	7.38	Lamp - LED TRIAL	23.55	23.68
Bracket - 1.5	7.81	7.38	Lamp - LED1x100	31.23	31.50
Bracket - 2.0	7.81	7.38	Lamp - LED1x17	23.55	23.72
Bracket - 2.5	7.81	7.38	Lamp - LED1x18	23.55	23.68
Bracket - 3.0	7.81	7.38	Lamp - LED1x20	23.55	23.68
Bracket - 3.5	11.08	10.47	Lamp - LED1x200	31.23	31.51
Bracket - 4.0	17.87	16.89	Lamp - LED1x22	23.55	23.68
Bracket - 4.5	17.87	16.89	Lamp - LED1x25 GE	23.55	31.50
Bracket - 5.0	17.87	16.89	Lamp - LED1x28	23.55	23.72
Bracket - 6.0	22.25	21.03	Lamp - LED1x29	23.55	23.68
Bracket - 6.5	22.25	21.03	Lamp - LED1x298	31.23	23.68
Bracket - 7.0	22.25	21.03	Lamp - LED1x33	23.55	31.51
Bracket - 8.0	22.25	21.03	Lamp - LED1x42	23.55	23.68
Bracket - C4	10.71	10.12	Lamp - MBF1x1000	142.89	23.68
Bracket - T1	9.88	9.34	Lamp - MBF1x125	49.32	23.73
Bracket - T2	15.56	14.71	Lamp - MBF1x250	127.61	23.68
Bracket - T2A	15.56	14.71	Lamp - MBF1x400	127.61	31.53
Bracket - T3	22.40	21.17	Lamp - MBF1x42	51.08	23.77
Bracket - T3A	22.40	21.17	Lamp - MBF1x50	49.48	23.81
Bracket - T4	22.40	21.17	Lamp - MBF1x80	48.62	39.40

[65] The pre 2009 capital charges have not been published with this draft decision due to confidentiality claims. The approved rates shall be directly provided to Ausgrid.

Annuity prices ($2019) - Post 2009 Capital				Opex Prices ($2019)	
Bracket - T5	22.40	21.17	Lamp - MBF2x80	69.09	50.20
Bracket - T6	22.40	21.17	Lamp - MBI1x100	133.69	56.11
Bracket - T7	32.32	30.54	Lamp - MBI1x1000	157.07	69.86
1*17W LED	54.62	53.50	Lamp - MBI1x150	133.69	56.02
1*22W LED	56.73	55.57	Lamp - MBI1x250	129.46	53.69
1*25W LED GE	48.58	47.58	Lamp - MBI1x400	129.32	53.62
1*29W LED	36.58	35.25	Lamp - MBI1x70	95.88	42.94
1000W SON	100.87	97.22	Lamp - MBI1x70 II	74.11	60.85
1000W SON FLOODLIGHT	82.75	79.76	Lamp - SON1x100	65.64	66.05
1000W/1500W MBI FLOODLIG	111.66	107.62	Lamp - SON1x1000	72.17	72.48
100W LED ALD	112.67	110.37	Lamp - SON1x150	62.41	62.85
100W MBI	38.65	37.25	Lamp - SON1x150 AR	62.41	62.85
100W MBI FLOODLIGHT	41.76	40.25	Lamp - SON1x250	63.93	64.37
100W SON	41.08	39.59	Lamp - SON1x250 AR	63.93	64.37
100W SON FLOODLIGHT	59.80	57.64	Lamp - SON1x400	64.60	65.04
100W SON - PLAIN	41.08	39.59	Lamp - SON1x400 AR	87.89	87.28
125W MBF	23.71	22.85	Lamp - SON1x50	47.70	47.99
125W MBF - BOURKE HILL	74.29	71.60	Lamp - SON1x600	72.17	72.61
125W MBF - PARKVILLE	93.66	90.27	Lamp - SON1x70	46.02	46.31
125W MBF -PLAIN	23.71	22.85	Lamp - SON2x250	91.53	92.21
125W/250W MBF FLOODLIGHT	32.92	31.73	Lamp - SON2x400	92.86	93.54
150W SON	41.44	39.94	Lamp - SON4x250	142.08	143.19
150W SON - PARKVILLE	109.77	105.80	Lamp - SON4x600	174.42	175.50
150W SON - PARKWAY 1	49.19	47.41	Lamp - TF1x20	64.07	42.72
150W SON ACTIVE REACTOR	60.33	58.14	Lamp - TF1x40	64.18	67.65
150W SON FLOODLIGHT	48.30	46.55	Lamp - TF1x80	64.18	42.40

Annuity prices ($2019) - Post 2009 Capital				Opex Prices ($2019)	
150W/250W MBI FLOODLIGHT	73.50	70.84	Lamp - TF2x14 T5	50.84	43.30
17W LED SY RRW	57.99	56.81	Lamp - TF2x20	96.32	53.81
2*14W TF - T5 PIERLITE M	31.17	30.05	Lamp - TF2x26	96.54	42.93
2*250W SON FLOODLIGHT	67.45	65.02	Lamp - TF2x40	96.54	42.93
2*400W SON FLOODLIGHT	133.28	128.47	Lamp - TF4x20	146.85	42.78
2*80W MBF - BOURKE HILL	64.70	62.36	Lamp - TF4x40	148.19	44.41
200W LED ALD	112.67	110.37	Lamp - TH1x1500	131.31	62.95
20W LED GE	48.58	47.58	Lamp - TH1x500	131.31	62.95
250W MBF	40.72	39.25	Lamp - TH1x750	131.31	62.95
250W MBF - PARKWAY 1	49.19	47.41			
250W SON	41.44	39.94			
250W SON - PARKVILLE	118.46	114.17			
250W SON - PARKWAY 1	49.19	47.41			
250W SON ACTIVE REACTOR	60.33	58.14			
250W SON FLOODLIGHT	48.30	46.55			
250W SON GEC 'BOSTON 3'	102.31	98.61			
28W LED SY	60.52	59.28			
298W LED ALD	162.01	158.69			
2X14W TF - T5 PIERLIGHT	31.17	30.05			
33W LED LRL	66.29	64.93			
4*250W SON	75.77	73.03			
4*600W SON	114.68	110.53			
400W MBF	32.85	31.67			
400W MBF - B2229	32.85	31.67			
400W MBF - PARKWAY 1	64.72	62.38			

Annuity prices ($2019) - Post 2009 Capital			Opex Prices ($2019)
400W MBF FLOODLIGHT	70.95	68.39	
400W MBI FLOODLIGHT	56.12	54.09	
400W SON	44.91	43.29	
400W SON - PARKWAY 1	49.19	47.41	
400W SON ACTIVE REACTOR	67.45	65.02	
400W SON FLOODLIGHT	48.30	46.55	
42W LED LRL	84.70	82.97	
42W MBF SYLVANIA SUB ECO	28.61	27.58	
50W MBF	21.48	20.71	
50W MBF - BOURKE HILL	64.70	62.36	
50W MBF - NOSTALGIA	64.70	62.36	
50W MBF - PLAIN	21.48	20.71	
50W SON	20.77	20.02	
50W SON - NOSTALGIA	32.62	31.44	
50W SON - PLAIN	20.77	20.02	
70W MBI	26.97	25.99	
70W MBI - MACQUARIE DEC.	105.36	101.55	
70W MBI II	23.71	22.85	
70W MBI II AERO	24.60	23.71	
70W SON	23.62	22.77	
70W SON - BOURKE HILL	72.40	69.78	
70W SON - NOSTALGIA	67.49	65.05	
70W SON - PARKVILLE	84.75	81.68	
70W SON BOLLARD	51.43	49.57	

Annuity prices ($2019) - Post 2009 Capital			Opex Prices ($2019)
70W SON FLOODLIGHT	28.56	27.53	
70W SON - PLAIN	23.62	22.77	
80W MBF - BEGA+CURVE BRA	105.93	102.10	
80W MBF - BOURKE HILL	49.45	47.66	
80W MBF - NOSTALGIA	63.62	61.32	
80W MBF - PLAIN	20.47	19.73	
80W MBF - REGAL/FLINDERS	115.47	111.29	
80W MBF BOLLARD	40.85	39.38	
80W MBF TOORAK	58.02	55.92	
LED TRIAL	36.58	35.25	
TH FLOODLIGHT	120.16	115.81	
COLUMN 10.5M-13.5M	417.70	394.77	
COLUMN 14M-15M	417.70	394.77	
COLUMN 2.5M-3.5M	364.25	344.25	
COLUMN 4-6.5M ORION WATE	374.73	354.16	
COLUMN 4M-6.5M	391.63	370.13	
COLUMN 7M-10M	383.11	362.08	
DECORATIVE COLUMN	402.50	380.41	
DEDICATED SUPPORT & COND	371.72	351.31	
MACQUARIE STANDARD	367.00	346.85	
MAST 15.5M-30M	388.61	367.28	
ORION DOUBLE ARM	356.11	336.56	
POLO 10.5M DECORATIVE 2M	378.92	358.12	
ROCKS STANDARD	380.63	359.74	

Table 15-11 Ausgrid's proposed luminaire failure rates and AER draft decision

Description	Ausgrid proposed rates - Theoretical Rates	AER 2014–19 determination	AER 2019–24 Draft decision
MBF1x1000	23.19%	8.00%	8.00%
MBF1x125	7.97%	5.01%	5.01%
MBF1x250	23.19%	5.01%	5.01%
MBF1x400	23.19%	5.01%	5.01%
MBF1x42	9.01%	3.53%	3.53%
MBF1x50	7.97%	5.01%	5.01%
MBF1x80	7.97%	4.47%	4.47%
MBF2x80	15.31%	8.00%	8.00%
MBI1x100	23.19%	4.00%	4.00%
MBI1x1000	23.19%	4.00%	4.00%
MBI1x150	23.19%	4.00%	4.00%
MBI1x250	23.19%	4.00%	4.00%
MBI1x400	23.19%	4.00%	4.00%
MBI1x70	23.19%	4.00%	4.00%
MBI1x70 II	7.97%	4.00%	4.00%
SON1x100	6.52%	13.44%	6.52%
SON1x1000	6.52%	5.00%	6.52%
SON1x150	6.52%	9.72%	6.52%
SON1x150 AR	6.52%	7.03%	6.52%
SON1x250	6.52%	10.72%	6.52%
SON1x250 AR	6.52%	7.34%	6.52%
SON1x400	6.52%	9.72%	6.52%
SON1x400 AR	6.52%	8.17%	6.52%
SON1x50	6.52%	5.00%	6.52%
SON1x600	6.52%	9.72%	6.52%
SON1x70	6.52%	11.25%	6.52%
SON2x250	12.61%	22.51%	12.61%

Description	Ausgrid proposed rates - Theoretical Rates	AER 2014–19 determination	AER 2019–24 Draft decision
SON2x400	12.61%	19.44%	12.61%
SON4x250	23.63%	47.01%	23.63%
SON4x600	23.63%	51.02%	23.63%
TF1x20	14.37%	6.00%	6.00%
TF1x40	14.37%	15.80%	15.80%
TF1x80	14.37%	6.00%	6.00%
TF2x14 T5	9.01%	6.00%	6.00%
TF2x20	26.68%	10.29%	10.29%
TF2x26	26.68%	6.00%	6.00%
TF2x40	26.68%	6.00%	6.00%
TF4x20	46.24%	6.00%	6.00%
TF4x40	46.24%	6.00%	6.00%
TH1x1500	23.19%	6.00%	6.00%
TH1x500	23.19%	6.00%	6.00%
TH1x750	23.19%	6.00%	6.00%

C Metering services prices

Table 15-12 Metering X factors for 2019–24, AER draft decision

	2020–21	2021–22	2022–23	2023–24
X factor (non-capital)	-0.10%	-0.10%	-0.10%	-0.10%
X factor (capital)	0.00%	0.00%	0.00%	0.00%

Note: We do not apply an X factor for 2019–20 because we set the 2019–20 metering charges in this determination.

Table 15-13 Annual metering charges for 2019–20, AER draft decision

Tariff Name	Non-Capital	Capital	Total
Residential Inclining Block	$9.71	$19.96	$29.67
Transitional Residential <2MWh	$9.71	$19.96	$29.67
Residential ToU	$25.10	$22.22	$47.33
Controlled Load	$0.82	$11.09	$11.90
Small Business Inclining Block	$10.02	$30.52	$40.54
Small Business ToU	$24.87	$21.21	$46.08
LV and Transitional	$44.27	$27.61	$71.88
Residential Transitional TOU	$25.10	$22.22	$47.33
Business Transitional TOU	$24.87	$21.21	$46.08
Generator Tariff	$2.58	$11.45	$14.03
15 - 40 MWh consumption	$25.10	$22.22	$47.33

D Additional information from Ausgrid in relation to its consolidation of ANS

Ausgrid, *Response to information request #031 - Consolidation of Ancillary Network Services, Appendix A - Worked examples/scenarios - Proposed fees/service consolidation*, July 2018. (Note: the 2019 fees are those proposed by Ausgrid rather than what the AER has approved)

Underground urban residential subdivision (vacant lots) : 5 Lots					
Service FY2014/19 Reg Period	Fee $FY19		Fee $FY19		Proposed Service FY2019/24 Reg Period
Administration relating to work performed by ASPs	399.65	F	902.55	F	Administration of Contestable Works - General
Administration - Subdivision involving substation/s					
Design Information	480.64	F	696.55	F	Design Information - Simple
Design Information - URD including Kisosk/HVC/PT					
Design Certification	320.43	F	1,924.46	F	Design Certification - General includes limited re-checks where time is within certification allowance
Design Certification - Kisosk/HVC/PT					
Design Rechecking (allow 2 @ 1hr x $160.21)	320.42	Q			
Total	$ 1,521.14		$ 3,523.56		Total

Underground urban residential subdivision (vacant lots) : 35 Lots with substation - Stand alone development					
Service FY2014/19 Reg Period	Fee $FY19		Fee $FY19		Proposed Service FY2019/24 Reg Period
Administration relating to work performed by ASPs	699.39	F	902.55	F	Administration of Contestable Works - General
Administration - Subdivision involving substation/s	119.89	F			
Design Information	1121.49	F	1,900.00*	Q	Design Information - Standard
Design Information - URD including Kisosk/HVC/PT	600.8	F			
Design Certification	801.06	F	1,924.46	F	Design Certification - General includes limited re-checks where time is within certification allowance
Design Certification - Kisosk/HVC/PT	961.28	F			
Design Rechecking (allow 2 @ 1.5hr x $160.21)	480.63	Q			
Total	$ 4,784.54		$ 4,727.01		Total

* for example purpose only

Underground urban residential subdivision (vacant lots) : 35 Lots with substation - Part of an agreed development master plan					
Service FY2014/19 Reg Period	Fee $FY19		Fee $FY19		Proposed Service FY2019/24 Reg Period
Administration relating to work performed by ASPs	699.39	F	902.55	F	Administration of Contestable Works - General
Administration - Subdivision involving substation/s	119.89	F			
Design Information	1121.49	F	696.55	F	Design Information - Simple
Design Information - URD including Kisosk/HVC/PT	600.8	F			
Design Certification	801.06	F	1,924.46	F	Design Certification - General includes limited re-checks where time is within certification allowance
Design Certification - Kisosk/HVC/PT	961.28	F			
Design Rechecking (allow 2 @ 1.5hr x $160.21)	480.63	Q			
Total	$ 4,784.54		$ 3,523.56		Total

Rural Overhead Subdivision : 9 poles with substation					
Service FY2014/19 Reg Period	Fee $FY19		Fee $FY19		Proposed Service FY2019/24 Reg Period
Administration relating to work performed by ASPs	499.56	F	902.55	F	Administration of Contestable Works - General
Administration - Subdivision involving substation/s	119.89	F			
Design Information	1,900.00*	Q	696.55	F	Design Information - Simple
Design Information - URD including Kisosk/HVC/PT					
Design Certification	480.64	F	1924.46	F	Design Certification - General includes limited re-checks where time is within certification allowance
Design Certification - Kisosk/HVC/PT	961.28	F			
Design Rechecking (allow 2 @ 1.5hr x $160.21)	480.63	Q			
Total	$ 4,442.00		$ 3,523.56		Total

* for example purpose only

F = Fixed fee service Q = Quoted fee service

Ausgrid, *Response to information request #008 - Alternative Control Services - Ancillary Network Services*, July 2018.

Existing 2014 /19

Services		Type	Units	Price $ (FY19) ex GST
Administration services relating to work performed by ASPs including processing work				
Underground urban residential subdivision (vacant lots)	Up to 5 lots	Fixed	per service	$399.65
	6 - 10 lots	Fixed	per service	$499.56
	11 - 40 lots	Fixed	per service	$699.39
	Over 40 lots	Fixed	per service	$799.30
Rural overhead subdivisions and rural extensions	Up to 5 poles:	Fixed	per service	$399.65
	6-10 poles:	Fixed	per service	$499.56
	11 or more poles	Fixed	per service	$899.21
Underground commercial and industrial or rural subdivisions		QuotedHourly	Per Hour	$99.91
Commercial and industrial developments		QuotedHourly	Per Hour	$99.91
Asset relocation or street lighting		QuotedHourly	Per Hour	$99.91
Subdivision involving substation/s (NEW)		Fixed	per service	$119.89
Additional services required by ASP/Applicant e.g Guarantee of		QuotedHourly	Per Hour	$99.91
Design related services				
Design information				
Underground urban residential subdivision (vacant lots)	Up to 5 lots	Fixed	per service	$480.64
	6 to 10 lots	Fixed	per service	$640.85
	11 - 40 lots	Fixed	per service	$1,121.49
	Over 40 lots	Fixed	per service	$1,441.91
Rural overhead subdivisions and rural extensions		QuotedHourly	Per Hour	$160.21
Underground commercial and industrial or rural subdivisions		QuotedHourly	Per Hour	$160.21
Commercial and industrial developments		QuotedHourly	Per Hour	$160.21
Asset relocation or street lighting		QuotedHourly	Per Hour	$160.21
		QuotedHourly	Per Hour	$186.72
		QuotedHourly	Per Hour	$236.67
URD including Kiosk/HV/OPT (NEW)		Fixed	per service	$600.80
Chambers, Multi Kiosk, CBD Chambers (NEW)		QuotedHourly	Per Hour	$160.21
Design certification				
Underground urban residential subdivision (vacant lots)	Up to 5 lots	Fixed	per service	$320.43
	6 to 10 lots	Fixed	per service	$480.64
	11 - 40 lots	Fixed	per service	$801.06
	Over 40 lots	Fixed	per service	$961.28
Rural overhead subdivisions and rural extensions	1 - 5 poles	Fixed	per service	$320.43
	6 -10 poles	Fixed	per service	$480.64
	11 or more poles	Fixed	per service	$801.06
Underground commercial and industrial or rural subdivisions (vacant lots - no development)	Up to 10 lots	Fixed	per service	$480.64
	11- 40 lots	Fixed	per service	$640.85
	Over 40 lots	Fixed	per service	$961.28
Commercial and industrial developments		QuotedHourly	Per Hour	$186.72
Asset relocation or street lighting		QuotedHourly	Per Hour	$160.21
		QuotedHourly	Per Hour	$186.72
Kiosk/HV/OPT (NEW)		Fixed	per service	$961.28
Chambers, Multi Kiosk, CBD Chambers (NEW)		QuotedHourly	Per Hour	$160.21
Design rechecking				
Underground urban residential subdivision (vacant lots)		QuotedHourly	Per Hour	$160.21
Rural overhead subdivisions and rural extensions		QuotedHourly	Per Hour	$160.21
Underground commercial and industrial or rural subdivisions		QuotedHourly	Per Hour	$160.21
Commercial and industrial developments		QuotedHourly	Per Hour	$186.72
		QuotedHourly	Per Hour	$236.67
Asset relocation or street lighting		QuotedHourly	Per Hour	$186.72
		QuotedHourly	Per Hour	$236.67

Proposed 2019 /24

	Services	Type	Units	Price $ (FY19) ex GST
	Design related services			
	Administration of contestable work			
	General	Fixed	per service	$902.55
	Additional	QuotedHourly	per hour	$99.84
New	Pioneer Schemes	Fixed	per service	$1,306.75
	Design information			
	Simple	Fixed	per service	$686.55
	Standard / Complex	QuotedHourly	per hour	$199.01 $236.51
New	Asset creation	Fixed	per asset number	$26.96 (base) $9.98 (per asset)
	Design certification			
	General	Fixed	per service	$1,926.46
	Other	QuotedHourly	per hour	$199.01 $236.51

Existing 2014 /19

Services		Type	Units	Price $ (FY19) ex GST
Preliminary enquiry service				
Preliminary enquiry service		Quoted/Hourly	Per Hour	$226.68
Connection offer service (basic or standard)				
Basic 100A Connections NOT requiring a load slip		Fixed	per service	$8.32
Basic 100A Connections requiring a load slip or		Fixed	per service	$211.69
Standard Off-Site or On-Site Augmentation Work		Fixed	per service	$211.69
Standard Offer ASP1 Connections		Fixed	per service	$270.74
Standard Embedded Generation >5MVA capacity		Quoted/Hourly	Per Hour	$236.67
Planning studies				
Carrying out planning studies and analysis relation to distribution (including sub-transmission and dual-function assets) connection applications		Quoted/Hourly	Per Hour	$236.67

Services		Type	Units	Price $ (FY19) ex GST
Contestable substation commissioning				
Underground urban residential subdivision (vacant lots)		Fixed	per service	$2,018.50
Rural overhead subdivisions and rural extensions		Fixed	per service	$1,189.91
Underground commercial and industrial or rural subdivisions		Fixed	per service	$2,584.29
Commercial and industrial developments		Quoted/Hourly	Per Hour	$160.21
Asset relocation or street lighting		Quoted/Hourly	Per Hour	$160.21
Complex & Chamber substations (NEW)		Quoted/Hourly	Per Hour	$160.21
Access Permits				
Underground urban residential subdivision (vacant lots)		Fixed	per service	$2,042.31
Rural overhead subdivisions and rural extensions		Fixed	per service	$2,042.31
Underground commercial and industrial or rural subdivisions (vacant lots - no development		Fixed	per service	$2,042.31
Commercial and industrial developments		Fixed	per service	$2,042.31
Asset relocation or street lighting		Fixed	per service	$2,042.31
Complex & Chamber substations (NEW)		Quoted/Hourly	Per Hour	$160.21
Clearance to work				
Clearance to work		Fixed	per service	$1,041.39
Access (standby person)				
Access (standby person)		Quoted/Hourly	Per Hour	$148.53
Connection / relocation process facilitation				
Connection / relocation process facilitation		Quoted/Hourly	Per Hour	$226.68
Customer interface coordination for contestable works				
Customer interface coordination for contestable works		Quoted/Hourly	Per Hour	$224.18

Proposed 2019 /24

	Services	Type	Units	Price $ (FY19) ex GST
	Connection application related services			
	Technical assessment and preliminary enquiry			
New	Technical assessment - Applications or relocations	Fixed	per service	$411.27
	Preliminary enquiry	Quoted/Hourly	per hour	$199.01 $236.51
	Connection offers			
	Basic	Fixed	per service	$16.97
	Standard	Fixed	per service	$49.92
New	Negotiated	Quoted/Hourly	per hour	$236.51
	Other connection application related services			
	Planning studies	Quoted/Hourly	per hour	$199.01 $236.51
New	Site inspection	Fixed	per service	$489.57
New	Technical Support - Permanently Unmetered Suppl	Quoted/Hourly	per hour	$199.01
New	Registered participant support	Quoted/Hourly	per hour	$236.51

	Services	Type	Units	Price $ (FY19) ex GST
	Contestable network commissioning and decommissioning			
	Commissioning assets			
	Simple	Fixed	per service	$1,693.25
	Standard	Fixed	per service	$3,340.90
	Complex	Quoted/Hourly	per hour	$160.10 $150.00
	Decommissioning assets			
New	Decommissioning assets	Quoted/Hourly	per hour	$160.10 $150.00
	Access Permit, oversight and miscellaneous services			
	Access permits and clearances to work			
New	Simple permit or clearance to work	Fixed	per service	$1,280.82
	Complex permit or clearance to work	Quoted/Hourly	per hour	$160.10 or $199.01 or $150.00
New	Cancellation - Simple	Fixed	per service	$496.32
New	Cancellation - Complex	Fixed	per service	$1,136.72
New	Install / remove overhead network earths	Quoted/Hourly	per hour	$150.00
	Other access permits and clearances to work			
	Access - standby person	Quoted/Hourly	per hour	$150.00
New	Access - confined space entry permit	Quoted/Hourly	per hour	$160.10 $150.00
	Process and project facilitation	Quoted/Hourly	per hour	$199.01 $236.51
New	Specialist services	Quoted/Hourly	per hour	$236.51

Existing 2014 /19

Services		Type	Units	Price $ (FY19) ex GST
ASP inspection services				
Inspection of service work by Level 1 ASPs				
Underground urban residential subdivision (vacant lots)	First 10 lots:	A Grade	Fixed per lot	$80.11
		B Grade	Fixed per lot	$192.25
		C Grade	Fixed per lot	$400.54
	Next 40 lots:	A Grade	Fixed per lot	$48.06
		B Grade	Fixed per lot	$112.15
		C Grade	Fixed per lot	$240.32
	Remainder:	A Grade	Fixed per lot	$16.02
		B Grade	Fixed per lot	$64.08
		C Grade	Fixed per lot	$112.15
	Plus flat fee travel time plus 0.5 hr @ R2 travel time			$80.11
Rural overhead subdivisions and rural extensions	1-5 poles	A Grade	Fixed per pole	$96.13
		B Grade	Fixed per pole	$192.25
		C Grade	Fixed per pole	$352.47
	6-10 poles	A Grade	Fixed per pole	$80.11
		B Grade	Fixed per pole	$160.21
		C Grade	Fixed per pole	$320.43
	11+ poles	A Grade	Fixed per pole	$64.08
		B Grade	Fixed per pole	$112.15
		C Grade	Fixed per pole	$240.32
	PTs	N/A	N/A	$80.11
	Plus flat fee travel time plus 0.5 hr @ R2 travel		Fee	$80.11
Underground commercial and industrial or rural subdivisions (vacant lots - no development)	First 10 lots:	A Grade	Fixed per lot	$192.25
		B Grade	Fixed per lot	$400.54
		C Grade	Fixed per lot	$80.11
	Next 40 lots:	A Grade	Fixed per lot	$192.25
		B Grade	Fixed per lot	$400.54
		C Grade	Fixed per lot	$80.11
	Remainder:	A Grade	Fixed per lot	$192.25
		B Grade	Fixed per lot	$400.54
		C Grade	Fixed per lot	$80.11
	Plus flat fee travel time plus 0.5 hr @ R2 travel time			$480.64
HV/LV UG Joint, ABS/Enclosed Switch, UGOH (NEW)		Fixed	per service	$1,281.70
Decommission substation (NEW)		Fixed	per service	$1,121.49
Substations (Kiosk/PT) or HV Sw cubicle (NEW)		Fixed	per service	$160.21
Commercial and industrial developments		QuotedHourly	Per Hour	$196.72
		QuotedHourly	Per Hour	$236.67
		QuotedHourly	Per Hour	$160.21
Asset relocation or street lighting		QuotedHourly	Per Hour	$196.72
		QuotedHourly	Per Hour	$236.67
		QuotedHourly	Per Hour	$224.23

Inspection of service work (by Level 2 ASPs)				
All Service connections	A Grade	Fixed	per service	$32.99
Per Notification of Service Work (NOSW)	B Grade	Fixed	per service	$57.02
	C Grade	Fixed	per service	$185.20

Re-inspection of L1 & L2			
L1 - network construction	QuotedHourly	Per Hour	$160.21
L2 (NOSW)	QuotedHourly	Per Hour	$196.72
	QuotedHourly	Per Hour	$236.67

Reinspection of installation work in relation to customer assets			
Installation (CoCEW)	QuotedHourly	Per Hour	$160.21

Investigate, review & implementation of remedial actions associated with ASP's connection works			
Investigate, review & implementation of remedial actions associated with ASP's connection works	QuotedHourly	Per Hour	$236.67

Proposed 2019 /24

Services	Type	Units	Price $ (FY19) ex GST
Inspection services - Private electrical installations and accredited service providers			
Inspection of level 1 ASP works			
Network Construction - Level 1 ASP works	QuotedHourly	per hour	$160.10
Re-inspection – Level 1 ASP works	QuotedHourly	per hour	$160.10
Inspection of level 2 ASP works (NOSW)			
A Grade	Fixed	per NOSW	$31.36
B Grade	Fixed	per NOSW	$56.98
C Grade	Fixed	per NOSW	$185.06
Re-inspection – ASP Level 2 Works	QuotedHourly	per hour of inspection	$177.07
Inspection of electrical contractor works			
New Service size >100A and mandatory inspections	QuotedHourly	per CCEW	$177.07
Re-inspection of electrical contractor works	QuotedHourly	per hour of inspection	$177.07
Other			
Investigate, review & implementation of remedial actions associated with ASP's connection works	QuotedHourly	per hour	$236.51

Existing 2014 /19

Services		Type	Units	Price $ (FY19) ex GST
Authorisation of ASPs				
Level 1 ASP		Fixed	per service	$607.05
Level 2 ASP		Fixed	per service	$420.34

Services		Type	Units	Price $ (FY19) ex GST
Rectification works				
a. Rectification of illegal Connections		Quoted/Hourly	Per Hour	$841.15
b. Provision of service crew/additional crew		Quoted/Hourly	Per Hour	$297.06
c. Fitting of Tiger tails		Quoted/Hourly	Per Hour	$148.53
d. High load escorts		Quoted/Hourly	Per Hour	$151.45
Services to supply and connect temporary supply to one or more customers				
Install & remove HV LL Links		Fixed	per service	$5,788.75
Break & remake HV bonds		Fixed	per service	$2,891.99
Break & remake LV bonds		Fixed	per service	$2,087.72
Connect & disconnect MG to OH mains		Fixed	per service	$2,897.43
Connect & disconnect MG to LV board in Kiosk		Fixed	per service	$2,266.91

Proposed 2019 /24

	Services	Type	Units	Price $ (FY19) ex GST
	Authorisation of ASPs			
	Level 1 ASP			
	Authorisation/Re-authorisation (Annual Fee)	Fixed	per service	$311.39
New	Recording of an additional company to existing auth	Fixed	per service	$49.92
New	Upgrade to include additional class	Fixed	per service	$168.17
New	Company Authorisation - Initial	Fixed	per service	$641.19
New	Company Re-authorisation (Annual Fee)	Fixed	per service	$118.25
	Level 2 ASP			
New	Initial Authorisation	Fixed	per service	$740.25
	Re-authorisation (Annual Fee)	Fixed	per service	$339.99
New	Additional authorisation	Fixed	per service	$99.84
	Level 3 ASP			
New	Authorisation/Re-authorisation (Biennial Fee)	Fixed	per service	$74.88

	Services	Type	Units	Price $ (FY19) ex GST
	Network safety services and security			
	Rectification works			
	Rectification of illegal connections	Quoted/Hourly	per hour	$137.48
	Provision of service crew/additional crew	Quoted/Hourly	per hour	$150.00
	Fitting of tiger tails	Quoted/Hourly	per hour	$150.00 + materials
	High load escorts	Quoted/Hourly	per hour	$150.00
	Temporary power	Quoted/Hourly	per hour	$150.00
New	Bushfire mitigation works	Quoted/Hourly	per hour	$150.00
New	Neutral integrity testing	Quoted/Hourly	per hour	$150.00
New	De-energisation of wires for safe approach	Quoted/Hourly	per hour	$150.00
New	Rectification of network related customer fault	Quoted/Hourly	per hour	$150.00
	Cable termination and relocation			
New	11kV cable termination at zone substation	Quoted/Hourly	per hour	$150.00 + materials
New	Subtransmission cable termination at zone substatio	Quoted/Hourly	per hour	$150.00 or $160.10 or $236.51 + materials
New	Complex customer inititaed asset relocation	Quoted/Hourly	per hour	$150.00 or $160.10 or $236.51 + materials
	Consultancy and review services			
New	Engineering consultancy	Quoted/Hourly	per hour	$278.88
New	Approved materials list application	Quoted/Hourly	per hour	$236.51 or $278.88
	Training			
New	Training - 5 to 9 participants	Fixed	per service	$160.10
New	Training - 10 to 14 participants	Fixed	per service	$93.39
New	Training - 15 or more participants	Fixed	per service	$56.04
New	Complex training	Quoted/Hourly	per hour	$331.11