FINAL DECISION
Ausgrid distribution determination 2015−16 to 2018−19

Attachment 16 – Alternative control services

April 2015

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: (03) 9290 1444
Fax: (03) 9290 1457

Email: AERInquiry@aer.gov.au

AER reference: 52294

Note

This attachment forms part of the AER's final decision on Ausgrid's revenue proposal 2015–19. It should be read with other parts of the final decision.

The final decision includes the following documents:

Overview

Attachment 1 - Annual revenue requirement

Attachment 2 - Regulatory asset base

Attachment 3 - Rate of return

Attachment 4 - Value of imputation credits

Attachment 5 - Regulatory depreciation

Attachment 6 - Capital expenditure

Attachment 7 - Operating expenditure

Attachment 8 - Corporate income tax

Attachment 9 - Efficiency benefit sharing scheme

Attachment 10 - Capital expenditure sharing scheme

Attachment 11 - Service target performance incentive scheme

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Attachment 13 - Classification of services

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Attachment 17 - Negotiated services framework and criteria

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Attachment 20 - Analysis of financial viability

Contents

Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DRP	debt risk premium
DMIA	demand management innovation allowance
DMIS	demand management incentive scheme
distributor	distribution network service provider
DUoS	distribution use of system
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
Expenditure Assessment Guideline	expenditure forecast assessment Guideline for electricity distribution
F&A	framework and approach
MRP	market risk premium
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
RBA	Reserve Bank of Australia
repex	replacement expenditure
RFM	roll forward model

Shortened form	Extended form
RIN	regulatory information notice
RPP	revenue and pricing principles
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
WACC	weighted average cost of capital

16 Alternative control services

Alternative control services are those that are provided by distributors to specific customers. They do not form part of the distribution use of system revenue allowance provide by us to each distributor. Rather, distributors recover the costs of providing alternative control services through a selection of fees, most of which are charged on a 'user pays' basis.

This section describes the AER's determination on the charges that distributors can levy customers for the provision of ancillary network services, public lighting and metering.

16.1 Ancillary network services

Ancillary network services are non-routine services distributors provide to individual customers on an 'as needs' basis.

In the 2009–14 regulatory control period, we classified ancillary network services as standard control services. Ausgrid called these 'miscellaneous' and 'monopoly' services. The Independent Pricing and Regulatory Tribunal (IPART) originally set the fees and labour rates for these services in 1999. The fees have since been indexed by inflation (in 2009 labour escalation was also taken into account).[1]

As we discussed in the stage 1 F&A and confirm in this final decision, we classify ancillary network services as alternative control services.[2]

For the avoidance of doubt, this final decision refers to ancillary network services for which a charge is approved as 'fee-based services'. That is, we determined the fee using the cost of providing the service (labour rates) and the average time to perform the service. These services fees are fixed and apply irrespective of the actual time on-site to perform the service, even if that time varies from the benchmark we consider in this decision.

By contrast, quoted services are once off and specific to a particular customer's request. The cost of these services will depend on the actual time taken to perform the service (rather than the benchmark we consider in this final decision). With the hourly rate set, the longer it takes the distributor to perform the service, the more the customer will pay.[3]

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1 AER, *Final decision: New South Wales distribution determination 2009–10 to 2013–14*, 28 April 2009, pp. 57-58.

2 AER, *Stage 1 framework and approach paper: Ausgrid, Endeavour Energy and Essential Energy: Transitional regulatory control period 1 July 2014 to 30 June 2015, Subsequent regulatory control period 1 July 2015 to 30 June 2019,* March 2013, p. 32.

3 This is analogous to engaging a plumber to fix drainage problems in a house. The plumber's hourly rate is known in advance but the time taken to perform the fix is variable and will determine the final bill.

16.1.1 Final decision

We do not approve Ausgrid's revised proposed fees for ancillary network services.

Ausgrid's proposed fees are higher than fees based on maximum rates for the distributor's labour types which we consider efficient for providing these services. More detail on our reasoning is in section 16.1.4.

Appendix 0 sets out our final decision on the fees Ausgrid can charge for ancillary network services.

Appendix 0 sets out fees for fee-based services and quoted services, as well as labour rates for quoted services.

Form of control

Our final decision is to apply a price cap for the form of control to ancillary network services, consistent with the stage 1 F&A. Figure 16.1 and Figure 16.2 set out the control mechanism formulas for fee based services and quoted services, respectively. They are consistent with the formulas we set out in the draft decision[4] and which Ausgrid agreed in its revised regulatory proposal. [5]

Form of control—fee based services

Under this form of control, we set a schedule of prices for the first year. For the following years the previous year's prices are adjusted by CPI and an X factor.

The form of control for fee based ancillary network services is:

Figure 16.1 Fee based ancillary network services formula

$\bar{p}_i^t \geq p_i^t$ i=1,...,n and t=1, 2, 3, 4

$\bar{p}_i^t = \bar{p}_i^{t-1}(1 + \Delta CPI_t)\left(1 - X_i^t\right) + A_i^t$

Where:

$\bar{p}_i^t$ is the cap on the price of service i in year t. However, for 2015–16 this is the price as determined in appendix 0 escalated by ΔCPI and the X-factor.

p_i^t is the price of service i in year t.

$$\Delta CPI_t = \left[\frac{CPI_{Mar,t-2} + CPI_{Jun,t-2} + CPI_{Sep,t-1} + CPI_{Dec,t-1}}{CPI_{Mar,t-3} + CPI_{Jun,t-3} + CPI_{Sep,t-2} + CPI_{Dec,t-2}}\right] - 1$$

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4 AER, *Draft decision: Ausgrid distribution determination 2015–16 to 2018–19: Attachment 16: Alternative control services*, November 2014, pp. 14–16.

5 Ausgrid, *Revised regulatory proposal: 1 July 2014 to 30 June 2019*, 20 January 2015, p. 212.

CPI means the all groups index number for the weighted average of eight capital cities as published by the ABS, or if the ABS does not or ceases to publish the index, then CPI will mean an index which the AER considers is the best estimate of the index.

X_i^t is the value of X for the year t in the regulatory control period, as Table 16.1 sets out.

Table 16.1 AER final decision on X factors for each year of the 2015–19 regulatory control period (per cent)

	2015–16	2016–17	2017–18	2018–19
X factor	–1.02	–1.07	–1.11	–1.10

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.

$\bar{p}_i^1$ is the cap on the price of service i in the first year of the subsequent regulatory control period. See appendix 0.

A_i^t is an adjustment factor for residual charges when customers choose to replace assets before the end of their economic life. For ancillary network services we consider the value for A is zero.

Form of control—quoted services

Figure 16.2 Quoted services formula

Price = labour + contractor services + materials

Contractor services (including overheads)—reflects all costs associated with the use of external labour in the provision of the service, including overheads and any direct costs incurred as part of performing the service. The contracted services charge applies the rates under existing contractual arrangements. The direct costs incurred as part of performing the service, for example permits for road closures or footpath access, are passed on to the customer. Contractor services are escalated annually by ΔCPI.

Materials (including overheads)—reflects the cost of materials directly incurred in the provision of the service, material storage and logistics on-costs and overheads. Materials are escalated annually by ΔCPI.

Labour is the maximum hourly charge out rate including on-costs and overhead. Labour is escalated annually by $(1 - X_t)(1 + \Delta CPI_t)$.[6]

[6] The definition of X and ΔCPI for Figure 16.2 are the same as for Figure 16.1.

Table 16.2 sets out the escalation rates for each year that can apply to the labour rates.[7]

Table 16.2 AER final decision on labour escalation factor to apply to maximum labour charge out rates for quoted services (per cent)

	2015–16	2016–17	2017–18	2018–19
X factor	–1.02	–1.07	–1.11	–1.10

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.

16.1.2 Ausgrid's revised proposal

Ausgrid proposed to not revise the labour rates for ancillary network services that it submitted in its original regulatory proposal.[8] It only proposed to apply updated cost escalators to ancillary network service charges.[9] Ausgrid submitted:

- the charges it proposed for ancillary network services in its original regulatory proposal are cost-reflective and efficient.[10]
- its time and labour rate inputs represent efficient costs of providing ancillary network services.[11]

Ausgrid submitted that it applied its overheads and on-costs in accordance with its approved cost allocation method.[12] It submitted that maintaining our draft decision to cap overhead rates would have consequences for the cost allocation method.[13] Ausgrid also stated maintaining our draft decision would affect Ausgrid's recovery of efficient operational costs and capitalised non-system expenditure.[14]

Ausgrid submitted that in making our draft decision, we should not have relied on the benchmark labour rates Marsden Jacob Associates (Marsden Jacob) developed.[15]

16.1.3 Assessment approach

This final decision continues to adopt the draft decision approach of focussing on the key inputs in determining prices for ancillary network services. We considered:

- Ausgrid's revised proposal.[16]

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7 Our opex rate of change attachment discusses the escalation factors.

8 Ausgrid, *Revised regulatory proposal*, 20 January 2015, p. 209.

9 Ausgrid, *Revised regulatory proposal– Attachment 8.08*, 20 January 2015, p. 4.

10 Ausgrid, *Revised regulatory proposal*, 20 January 2015, p. 209.

11 Ausgrid, *Revised regulatory proposal*, 20 January 2015, p. 211.

12 Ausgrid, *Revised regulatory proposal– Attachment 8.08*, 20 January 2015, p. 5.

13 Ausgrid, *Revised regulatory proposal*, 20 January 2015, p. 211.

14 Ausgrid, *Revised regulatory proposal*, 20 January 2015, p. 211.

15 Ausgrid, *Revised regulatory proposal– Attachment 8.08*, 20 January 2015, p. 8.

- Marsden Jacob's analysis of ancillary network services, including recommended maximum total labour rates for NSW.[17]

As with the draft decision, we consider labour is the key input in determining an efficient level of fees for ancillary network services. We focused on comparing Ausgrid's proposed total labour rates against maximum total labour rates that Marsden Jacob developed. In this final decision, 'total labour rates' comprise raw labour rates, on costs, and overheads. Our final decision maximum total labour rates apply the following labour components to arrive at a maximum total labour rate (for particular labour types).

- a maximum raw labour rate,
- a maximum on cost rate, and
- a maximum overhead rate

As we explain in more detail in section 16.1.4, Marsden Jacob obtained ranges (that is, minimum and maximum rates) for each of these components. Marsden Jacob then applied the maximum from these ranges to derive the maximum total labour rate.[18] We consider that using Marsden Jacob's recommended maximum labour rates to determine appropriate fees for services will provide Ausgrid with a reasonable opportunity to recover at least the efficient costs it incurs in providing these services. It will promote the efficient provision of electricity services and allow a return commensurate with the regulatory and commercial risks associated with the provision of those services.[19]

Where Ausgrid's proposed total labour rates exceeded the maximum total labour rates we regarded as efficient, we applied our maximum total labour rates to determine ancillary network services charges. Equally, we adopted Ausgrid's proposed total labour rates where they sat below Marsden Jacob's maximum total labour rates.

As a further check of our analysis, we also compared components of Ausgrid's proposed labour costs with those of the Victorian distributors. We consider the latter's costs closer to efficient levels.[20]

In coming to conclusions about the fees for Ausgrid's most frequently requested ancillary network services, we also assessed the times taken to perform the service.

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16 Ausgrid, *Revised regulatory proposal*, 20 January 2015, p. 209 and Ausgrid, *Revised regulatory proposal – Attachment 8.08*, 20 January 2015, pp. 8-17.

17 'Raw' labour rates do not include on-costs and overheads.

18 Marsden Jacob, *Final: Provision of advice in relation to Alternative Control Services – Public version: Advice prepared for the Australian Energy Regulator*, 20 October 2014, pp. 1–6.

19 NEL, s7A and 16.

20 Deloitte Access Economics, *NSW distribution network service providers labour analysis–Addendum to 2014 report*, April 2015.

In its revised proposal, Ausgrid took issue with our application of labour rates in the draft decision. We have addressed these specific issues in section 0 of this final decision.

16.1.4 Reasons for final decision

We do not approve Ausgrid's revised proposed fees for ancillary network services. Proposed fees exceed those based on maximum total labour rates for Ausgrid's labour types which we consider efficient for providing these services.

As we set out in section 16.1.3, we compared Ausgrid's total labour rates against Marsden Jacob's maximum (rather than, for example, average) total labour rates. We note ancillary network services comprise a relatively small portion of Ausgrid's revenue. This is because a relatively small number of Ausgrid's customers request ancillary network services in any given regulatory year. Hence, we consider it prudent to use maximum total labour rates as an input to derive prices for ancillary network services. Maximum total labour rates act as 'ceilings' on the rates we consider Ausgrid should pay for the various labour types. Where Ausgrid reveals rates lower than the maximum total labour rates, we consider those lower rates should be the inputs for deriving ancillary network services prices.. We consider this ensures the distribution business has a reasonable opportunity to recover at least its efficient costs, while also allowing a return commensurate with the regulatory and commercial risks in providing the services.

Our final decision prices for ancillary network services are generally lower than the prices Ausgrid included in its revised proposal (see appendix 0). These reductions reflect our assessment that Ausgrid's proposed total labour rates exceeded those that Marsden Jacob recommended for Ausgrid's senior engineer, administration, and technical labour categories.

Our assessment focused on the inputs to the methods Ausgrid used to derive its fees for ancillary network services. In particular, labour is the major input to their proposed ancillary network services fees. Ausgrid stated it based its labour rates on actual information and its current enterprise bargaining agreement labour rates. Where there are inefficiencies in actual costs, these will be carried through in the derivation of proposed fees. We found proposed labour rates were inefficient. Hence, we adjusted Ausgrid's total labour rates where they exceeded the maximum total labour rates that Marsden Jacob developed and recommended (see section 16.1.3).

Each of the NSW and ACT distributors used different labour category names and descriptions. However, Marsden Jacob found that the types of labour distributors used to deliver ancillary network services broadly fell into one of five categories:

- administration
- technical services
- engineers
- field workers, and

- senior engineers.[21]

Table Table 16.3 shows Ausgrid's proposed total labour rates.[22] Table Table 16.3 also shows the maximum total labour rates Marsden Jacob developed. We consider these maximum total labour rates should be used to assess Ausgrid's proposed charges for ancillary network services.

Marsden Jacob developed and recommended total maximum labour rates for each of these labour categories. They assessed raw labour rates, overheads, and on costs separately and derived maximum rates for each component. Marsden Jacob then applied these maximum rates to produce the maximum total labour rates.

We used these maximum total labour rates to determine whether Ausgrid's proposed fees for ancillary network services reflect the underlying cost of an efficient labour rate. We consider this to be a prudent approach. It provides the distribution business with a reasonable opportunity to recover at least its efficient costs. We consider fees based on labour rates higher than the maximum total labour rates would be inefficient.

Table 16.3: Ausgrid's proposed total hourly labour rates (including on costs and overheads), and final decision ($2014–15)

Category	Description	Ausgrid proposed total labour rates ($ per hour, $2014–15)	AER maximum allowed total labour rates ($ per hour, $2014–15)
Admin	Admin support	130.66	89.06
Technical	Technical specialist R2	172.91	142.81
Engineer	EO 7 / engineer	166.44	177.52
Field worker	Field worker R4	132.40	133.8
Senior engineer	Senior engineer	231.25	210.96

Source: Ausgrid, *Revised regulatory proposal—Attachment 8.10*,20 January 2015, p. 20; Marsden Jacob Associates, *Provision of advice in relation to alternative control services—public version*, 20 October 2014, p. 6; Marsden Jacob Associates, Email advice to the AER, 1 October 2014.

Ausgrid submitted that its labour input costs were prudent and efficient when compared to distributors.[23] It also stated that the benchmarks used in our draft decision are not necessarily reliable and produce a spectrum of results.[24]

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[21] Marsden Jacob, *Final: Provision of advice in relation to Alternative Control Services – Public version: Advice prepared for the Australian Energy Regulator*, 20 October 2014, p. 1.

[22] Table 1 also shows Ausgrid's total labour rates as the sum of the raw labour rates, on costs and overheads.

[23] Ausgrid, *Revised Regulatory Proposal, 20 January 2015, pp. 210, and Ausgrid, Revised Regulatory Proposal – Attachment 8.08*, 20 January 2015, p. 7.

We agree that benchmarking can produce a spectrum of results because of differences in methods and inputs. However, it is important to consider benchmarking results only if they utilised robust methods and inputs. Ausgrid did not provide any persuasive evidence or critique of the techniques the draft decision relied upon to substantiate these general statements. We consider we can use benchmarking results to determine revenues and/or prices in regulatory determinations where:

- the benchmarking methods and inputs are robust
- where a distributor cannot justify labour rates that are high compared to the benchmarks.

As we noted above, we consider Marsden Jacobs' analysis is robust and represents a prudent approach to assessing Ausgrid's labour rates. We discuss this in more detail below.

Raw labour rates

In developing maximum raw labour rates (that is, excluding on-costs and overheads), Marsden Jacob examined Hays 2014 salary data. The Hays 2014 salary reports draw on information from 2,500 companies across Australia and New Zealand. Australian distributors in the Hays data (who gave permission to be named) were ActewAGL, Jemena, and CitiPower.[25] The Hays rates draw from a wide pool of labour which Ausgrid would likely have access to. We therefore consider these rates provide a good representation of the competitive market rate for appropriate categories of labour.

AGL's submission queried whether these labour rates are efficient or even a current reflection of the NSW labour market. It submitted that the NSW distributors provided no justification as to why local market conditions require much higher labour rates than other states. AGL supported our comparison of labour rates and on-costs against other states as an appropriate means of evaluation and analysis.[26]

This echoes the Energy Users Association of Australia's submission not to allow the NSW distributors to effectively treat their negotiated labour rates in enterprise bargaining agreements as 'pass throughs'.[27]

We do not assume that a wage deal struck through an enterprise bargaining agreement is automatically efficient. If the service provider expected us to use the costs revealed through its enterprise bargaining agreement as the starting point for

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[24] Ausgrid, *Revised Regulatory Proposal, 20 January 2015, pp. 210, and Ausgrid, Revised Regulatory Proposal – Attachment 8.08*, 20 January 2015, p. 8.

[25] A list of contributors to the Hays 2014 salary data who gave permission to be named is available on Hays, *Contributors—Hays 2014 Salary*, accessed 12 February 2015, *Guide* http://www.hays.com.au/salary-guide/HAYS_375078.

[26] AGL, *Submission on NSW distributors draft decisions*, 15 February 2015, p. 4.

[27] Energy Users Association of Australia, *Submission to NSW Electricity Distribution Revenue Proposals (2014/15 to 2018/19)*, 8 August 2014, pp. 9–10; Energy Users Association of Australia, *Submission to NSW DNSP revised revenue proposal to AER draft determination (2014 to 2019)*, 13 February 2015, p. 44.

determining total labour expenditure, it would not have an effective incentive for cost control.[28] Effectively, that would make such expenditures akin to cost of service regulation, rather than the NER's emphasis on incentive regulation.

Discussed below, Marsden Jacob developed its recommendations using labour types and their respective rates that are available in a competitive labour market.

Ausgrid stated Marsden Jacob's analysis ignores the fact that Ausgrid cannot access a national or international labour market.[29] It was not clear to Ausgrid whether the results are driven by lower labour rates in other states, countries or industries.[30]

Marsden Jacob reviewed salary information from all Australian cities. However, Marsden Jacob only used Sydney salary data to develop its recommended maximum raw labour rates in respect of the NSW distributors.[31] Marsden Jacob compared labour rates it developed using the Hays Sydney data against the Hays Victoria data. Marsden Jacob did this as a cross-check to test the reasonableness of its recommended labour rates. Marsden Jacob found its recommended labour rates did not differ significantly from the Hays Victoria raw labour rate data.

In its report, Marsden Jacob also included raw labour rates across the five labour categories for Queensland and Auckland. Marsden Jacob included this data for illustration purposes—labour rates in each category did not vary significantly across these locations. The differences observed probably captured differences between locations including economic conditions, labour laws and population. For these reasons, we consider the Sydney rates alone were acceptable to develop maximum recommended labour rates for ancillary network service charges for the NSW and ACT distributors.

Marsden Jacob used job titles from Hays' energy specific salary guide to develop maximum recommended labour rates.[32] Marsden Jacob supplemented this with data from the Hays office support salary guide.[33] This ensured that the 'administration' category was sufficiently covered.

Marsden Jacob analysed 66 different job titles, then used 36 of these to develop rates for the five labour categories.[34] These 36 labour job titles involved tasks which clearly fell into either the 'administration', 'technical specialist', 'engineer', 'field worker', or 'senior engineer' labour categories. Marsden Jacob excluded job titles that were not

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28 NEL ss. 7, 7A and 16; AER, *Final decision: Powerlink transmission determination 2012–13 to 2016–17*, April 2012, p. 52.

29 Ausgrid, *Revised Regulatory Proposal*, 20 January 2015, pp. 210; Ausgrid, *Revised Regulatory Proposal – Attachment 8.08*, 20 January 2015, p. 8.

30 Ausgrid, *Revised Regulatory Proposal*, 20 January 2015, pp. 210; Ausgrid, *Revised Regulatory Proposal – Attachment 8.08*, 20 January 2015, p. 8.

31 Marsden Jacob, *MJA analysis.*

32 Hays, *The 2014 Hays salary guide: salary & recruiting trends*, 2014.

33 Hays, *The 2014 Hays salary guide: salary & recruiting trends*, 2014.

34 Marsden Jacob, *MJA analysis.*

relevant to electricity distributors such as 'wind farm engineer'. Table Table 16.4 shows the 36 job titles Marsden Jacob used to develop recommended maximum labour rates for each of the five labour categories. We consider these 36 job titles provide Marsden Jacob with a sample of labour rates available in a competitive labour market.

Table 16.4: Job titles Marsden Jacob used to develop maximum labour rates

Labour category		Job title
Admin	14 data points	Project secretary / Administrator
	(7 job titles)	Client liaison (residential)
		Data entry operator
		Records officer
		Administration assistant (12+ months experience)
		Project administration assistant (3+ years experience)
		Project coordinator
Technical specialist	22 data points	Technician
	(11 job titles)	Control room operator
		Control room manager
		E&I technician
		Protection technician
		Generator technician
		Operator / manager
		Site engineer
		Planner / scheduler
		OHS supervisor
		OHS manager
Engineer	14 data points	Design engineer
	(7 job titles)	Project engineer (EPCM)
		Power systems engineer
		Protection engineer
		Transmission line design engineer
		Asset engineer (3 to 7 years)
		Project engineer
Field worker	14 data points	Leading hand
	(7 job titles)	Electrician

Labour category		Job title
		Mechanical fitter
		Line worker
		G&B linesworker
		Cable jointer
		Cable layer
Senior engineer	8 data points	Senior design engineer
	(4 job titles)	Principal design engineer
		Senior project engineer (EPCM)
		Commissioning Engineer

Source: Marsden Jacob analysis.

Marsden Jacob considered the range of data provided for each labour category across the various job titles. In doing this, Marsden Jacob derived salary ranges for each labour category by:

- identifying the lowest salary from all job titles in the labour category
- identifying the highest salary from all job titles in the labour category

We consider this range represents the full pool of labour (and raw labour rates) that Ausgrid would have access to in a competitive labour market. Marsden Jacob recommended using the maximum raw labour rate for each labour category to develop its maximum total labour rate.[35] We consider this to be a prudent approach. It provides the distribution business with a reasonable opportunity to recover at least its efficient costs, while promoting the efficient provision of services.

Table 16.5: final decision maximum raw hourly labour rates

Marsden Jacob labour category	AER maximum raw labour rate ($ per hour, $2014–15)
Admin	39.0
Technical	59.0
Engineer	69.0
Field worker	47.0
Senior engineer	82.0

Source: Marsden Jacob, *Final: Provision of advice in relation to Alternative Control Services – Public version: Advice prepared for the Australian Energy Regulator*, 20 October 2014, pp. 2–3.

[35] Marsden Jacob, *Final: Provision of advice in relation to Alternative Control Services – Public version: Advice prepared for the Australian Energy Regulator*, 20 October 2014, pp. 2–3.

On–costs

Marsden Jacob recommended a maximum on cost rate of 52.23 per cent. Marsden Jacob developed a 'bottom up' estimate of on costs for the NSW and ACT distributors. Marsden Jacob did this for each of these businesses with reference to the following factors:

- the superannuation levels included in each distributor's enterprise bargaining agreement
- a conservative estimate of workers compensation premium
- standard payroll tax rates in NSW and the ACT
- annual leave loading of 17.5 per cent loading on four weeks annual leave, which equates to 1.35 per cent of total salary
- a conservative long service leave allowance based on three months leave for every ten years of service, equating to 2.5 per cent per year
- an assumed rate of 18.18 per cent standard leave (including annual leave, sick leave, and public holidays) for all businesses.

Based on these factors, Marsden Jacob calculated a maximum on cost rate for the ACT and NSW businesses of 52.23 per cent.[36] It then used this maximum on cost rate to derive its maximum total labour rates. We consider this to be a prudent approach that is consistent with the revenue and pricing principles.

[36] Marsden Jacob, *Final: Provision of advice in relation to Alternative Control Services – Public version: Advice prepared for the Australian Energy Regulator*, 20 October 2014, p. 4.

Overheads

Marsden Jacob applied the maximum overhead rates in Table 16.6 to derive its total labour rates.[37] In recommending these maximum overhead rates, Marsden Jacob compared the overhead rates the NSW and ACT distributors proposed (in their original regulatory proposals). Marsden Jacob found that Ausgrid and Endeavour Energy's overhead rates were significantly higher than those of Essential Energy, and ActewAGL. They were also significantly higher than the Victorian distributors' overhead rates.[38] Marsden Jacob therefore recommended maximum overhead rates based on the maximum of only ActewAGL and Essential Energy's proposed overhead rates. Marsden Jacob's maximum overhead rates are also higher than the rates proposed by the Queensland distributors.[39] This adds further support to using Marsden Jacobs' maximum overhead rates to calculate maximum total labour rates. We therefore consider that Marsden Jacob's total labour rates, which use the overhead rates in Table 16.6 as inputs, are prudent and appropriately reflect the revenue and pricing principles.

Table 16.6 Maximum overhead rates

Labour type	Maximum overhead rates (per cent)
Administration	50.0
Technical specialist	59.0
Engineer	69.0
Field Worker	87.0
Senior Engineer	69.0

Source: Marsden Jacob Associates, *Final: Provision of advice in relation to Alternative Control Services – Public version: Advice prepared for the Australian Energy Regulator*, 20 October 2014, p. 5.

In its discussion of maximum overhead rates, Marsden Jacob noted:

- the nature of the differences in overhead rates may be due to differences in cost allocation methods
- capping the overhead rate may have unintended consequences for the broader cost allocation methodology

[37] Marsden Jacob Associates, *Provision of advice in relation to alternative control services—advice prepared for the Australian Energy Regulator*, 20 October 2014, p. 5.

[38] Marsden Jacob Associates, *Provision of advice in relation to alternative control services—advice prepared for the Australian Energy Regulator*, 20 October 2014, p. 5.

[39] Ergon Energy, *Regulatory proposal 2015-20: 05.06.02—fixed fee services model*, 31 October 2014 (CONFIDENTIAL); Ergon Energy, *Regulatory proposal 2015-20: 05.06.03—quoted price services model*, 31 October 2014 (CONFIDENTIAL); Energex, *Regulatory proposal 2015-20: Alternative control services costing model*, 31 October 2014 (CONFIDENTIAL).

- we should test the method of addressing overhead allocation vis a vis the cost allocation method.[40]

Ausgrid highlighted this in its revised proposal and submitted that capping overheads would also prevent it recovering efficient costs.[41]

As we discussed in section 0, however, we assessed Ausgrid's total labour rates against Marsden Jacobs' total labour rates. We did not compare the individual components of total labour (raw labour, on costs and overheads). The grand total, not the sum of its individual parts, was our method for determining labour rates.

We reviewed the objectives of our cost allocation guideline. The 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.[42] The approval of actual costs is subject to applicable requirements set out in the National Electricity Rules.[43] 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.[44] By extension, proper application of the cost allocation method does not indicate whether the resulting overhead rates represent efficient levels.

Metering related ancillary network services

Meter test fee

In its revised proposal, Ausgrid submitted that the 'technical' labour rate category should be used in calculating a charge for its 'meter test' service.[45] It also submitted that this service also involves a necessary administration component of 0.66 hours.[46] In this final determination, we have used the 'technical' labour rate category to derive a charge for this service. We consider that a time equal to the time CitiPower/Powercor take for administration should be applied. We consider there is no reason Ausgrid's time taken for this service should differ from CitiPower/Powercor.[47]

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40 Marsden Jacob Associates, *Provision of advice in relation to alternative control services—advice prepared for the Australian Energy Regulator*, 20 October 2014, p. 5.

41 Ausgrid, *Revised Regulatory Proposal*, 20 January 2015, p. 210–211 and Ausgrid, *Revised Regulatory Proposal – Attachment 8.08*, 20 January 2015, p. 5.

42 AER, *Electricity distribution network service providers—Cost allocation guidelines*, June 2008, p. 7-11.

43 AER, *Electricity distribution network service providers—Cost allocation guidelines*, June 2008, p. 7-11.

44 AER, *Electricity distribution network service providers—Cost allocation guidelines*, June 2008, p. 7-11.

45 Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 9.

46 Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 9.

47 We have not disclosed the CitiPower/Powercor time taken.

Off peak conversion

Ausgrid submitted that Marsden Jacob incorrectly adopted the 'field worker (R4)' labour rate category in calculating a charge for the 'off peak conversion' service.[48] Ausgrid submitted that this is a technical task, completed by the 'technical (R2)' labour category.[49] We consider that 'field worker' is the correct labour category to perform an off peak conversion. We note that Essential Energy also use this labour category for this service. We have followed our draft decision, and consider that the 'field worker' labour rate should be applied to calculate a charge for this service.

Disconnection/reconnection—disconnection completed

Ausgrid noted an inconsistency between our draft decision disconnection/reconnection charges for:

- 'disconnection/reconnection—disconnection completed', and
- 'vacant property reconnect/disconnect'.[50]

This final decision accepts Ausgrid's revised proposed 'disconnection/reconnection—disconnection completed' fee of $138.67, therefore this inconsistency no longer exists.

Origin Energy submitted it understands Ausgrid combined re-energisation and de-energisation activities within the same fee. A number of submissions highlighted the inequity of this arrangement. Origin Energy did not consider we provided a sufficiently clear explanation of how we assessed the concerns raised by stakeholders.[51] We noted in the draft decision that:

> This fee is charged at the point of disconnection—it is not charged at the point of reconnection, and it only applies when a vacant disconnection is performed. Ausgrid submitted that this service is provided for an individual in an overwhelming percentage of cases, and that instances where Ausgrid disconnect one customer and a new customer takes over the site would be immaterial (less than one per cent).[52]

We consider that the 'disconnection/reconnection—disconnection completed' service is intended to cover the costs of disconnecting a customer for a short time period. For example, people who own a vacant holiday home may want to avoid a service availability charge.

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[48] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 10.

[49] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 10.

[50] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 10.

[51] Origin, *Submission to AER draft determination for NSW electricity distributors*, 13 February 2015, p. 27.

[52] AER, *Draft decision: Ausgrid distribution determination 2015–16 to 2018–19: Attachment 16: Alternative control services*, November 2014, p. 26.

We note that Ausgrid's proposed service charge is higher than the Victorian distributors' disconnection fees. However, disconnection fees in Victoria are lower because most residential customers have smart meters and disconnections can be done remotely. This is not the case in NSW where smart meters do not exist for all households. Ausgrid's proposed disconnection/reconnection fees are consistent with those of the Tasmanian and Queensland distributors.[53] Like NSW, the Tasmanian and Queensland distributors have not rolled out smart meters to the same extent as in Victoria.

Disconnection/reconnection—pillar/pole disconnection

Ausgrid submitted that it wanted to question the method we used to calculate a charge for this service.[54] Ausgrid queried why our draft determination fee for this service was lower than the fee for its 'disconnection/reconnection—pillar/pole site visit' service.[55] We have further reviewed the fee for this service (which is for a disconnection and includes subsequent reconnection). We consider that the time taken to perform this service should be increased from two hours to 2.77 hours. This is comparable to the times taken by the other NSW distributors to perform this service.

Network tariff change requests

In our draft decision, we rejected Ausgrid's proposed 'network tariff change request' charge. We did not nominate an alternative charge for this service.[56] In its revised proposal, Ausgrid submitted that we used the term 'network tariff change request—invalid request' for this charge, however, we should have used the term 'network tariff change request'. Ausgrid also submitted that retailers have visibility to determine if a request is valid, since Ausgrid's network tariff policy is available on its website and tariffs currently being applied are visible via MSATS.[57] Ausgrid propose to only apply this fee to valid network tariff change requests outside of the annual pricing proposal process.[58]

We maintain our draft decision to not adopt a charge for 'network tariff change requests'. This applies whether it is a valid or invalid request. We agree with AGL that this function sits with the distributor and customers should not be charged because the

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[53] In 2014–15, for example, Aurora charged a disconnection fee of $53.77. Energex charged $54.93 and $70.30 (for site visit), while Ergon charged a disconnection fee for short rural of $102.24 and $592.66 for long rural.

[54] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 11.

[55] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 11.

[56] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 11.

[57] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 11.

[58] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 11.

distributor has not placed a customer on the correct network tariff.[59] Origin reiterated these points and supported our draft decision in its submission.[60]

Connection related ancillary network services

Ausgrid submitted that the fees it proposed in its original regulatory proposal—and the labour rates in its original proposal—should apply, instead of the Marsden Jacob labour rates we adopted in our draft decision.[61]As discussed in section 16.1.4, we consider that the labour rates Marsden Jacob developed are prudent and should apply in this final decision.

Design related services & ASP inspections services

Ausgrid submitted that in our draft decision, we did not allocate fees to numerous services in the following ancillary network service categories:

- design related services,[62] and
- ASP inspections services.[63]

We have allocated fees to each of these services in this final decision.

Access permits

Ausgrid submitted that we determined the correct charge for its 'general' service. However, this fee is not an hourly rate, as this is a fee based (not quoted) service.[64] Only the “complex” access permit service is a quoted service. In this final decision, we have specified this charge as a fixed fee amount (not as an hourly rate).

Clearance to work

Ausgrid submitted that we listed its proposed price for its 'clearance to work' service incorrectly. Ausgrid submitted that the charge for this service should have been as per its original regulatory proposal (and the corresponding model).[65] We have calculated a charge for this service using maximum labour rates we consider efficient—the charge is correctly listed in appendix 0.

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[59] AGL, *NSW electricity distribution networks regulatory proposals: 2014- 19: AGL submission to the Australian Energy Regulator*, 8 August 2014, p. 32.

[60] Origin, *Submission to AER draft determination for NSW electricity distributors*, 13 February 2015, p. 27.

[61] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 13–17.

[62] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, pp. 13–14.

[63] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, pp. 14–15.

[64] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 16.

[65] Ausgrid, *Revised regulatory proposal: Attachment 8.08: Revisions to the ancillary network services proposal,* January 2015, p. 16.

16.2 Public Lighting

16.2.1 Final decision

We have approved the majority of Ausgrid revised regulatory proposal in relation to public lighting charges imposed on local councils. Specifically we approve the revised proposal in relation to:

- a three year lamp bulk replacement cycle
- repair time for spot outages of 45.4 minutes
- Labour escalators. We have adopted the escalation of labour prices from our draft decision methodology, and as set out in attachment 7 of this final decision.

There are two elements of the revised proposal that we have not approved. These are:

- failure rates for calculating operating expenditure and instead substitute benchmark failure rates
- a real pre-tax WACC of 7.14 per cent. We instead substitute a WACC of 4.73 per cent as set out in attachment 3

Updated labour escalators have also been calculated and applied using the same methodology adopted in the draft decision.

Form of control

Our final decision is to apply a price cap for the form of control to public lighting, consistent with the stage 1 F&A. Figure 16.3 sets out the control mechanism formulas for public lighting.

Figure 16.3 Public lighting formula

$\bar{p}_i^t \geq p_i^t$ i=1,...,n and t=1, 2, 3, 4

$\bar{p}_i^t = \bar{p}_i^{t-1}(1 + \Delta CPI_t)\left(1 - X_i^t\right) + A_i^t$

Where:

$\bar{p}_i^t$ is the cap on the price of service i in year t. However, for 2015–16 this is the price as determined in appendix A.1.

p_i^t is the price of service i in year t.

$$\Delta CPI_t = \left[\frac{CPI_{Mar,t-2} + CPI_{Jun,t-2} + CPI_{Sep,t-1} + CPI_{Dec,t-1}}{CPI_{Mar,t-3} + CPI_{Jun,t-3} + CPI_{Sep,t-2} + CPI_{Dec,t-2}}\right] - 1$$

CPI means the all groups index number for the weighted average of eight capital cities as published by the ABS, or if the ABS does not or ceases to publish the index, then CPI will mean an index which the AER considers is the best estimate of the index.

X_i^t is the value of X for the year t in the regulatory control period. There are no X-factors for public lighting

A_i^t is an adjustment factor likely to include, but not limited to, adjustments for residual charges when customers choose to replace assets before the end of their economic life. For public lighting we consider the value for A is zero.

16.2.2 Ausgrid's revised proposal

In its revised proposal, Ausgrid accepted the methodology used in our draft decision for calculating labour escalation and some elements of the luminaire failure rates.

Ausgrid did not accept the draft decision in relation to:

- WACC and instead proposed a real pre-tax WACC of 7.14.
- four year bulk lamp replacement.

Ausgrid proposed that the lamp spot failure rates in its operating expenditure model reflect three year bulk replacement and should take account of all luminaire components that fail, not just the globe.[66] The revised failure rates are set out in Table 16.7.

Table 16.7 Failure Rates, per cent

	Revised Proposal
Compact Fluorescent	15.41
High Pressure Sodium 250	13.12
Low Pressure Sodium 100	13.44
Mercury Vapour 80	8.26

Source: Ausgrid revised proposal operating expenditure model.

Ausgrid *sought to continue with a three year bulk lamp replacement program. It considered this was appropriate while it engages with local councils on the replacements of existing globes with LEDs. Ausgrid proposes a three year replacement cycle for its existing sodium high pressure and mercy vapour technology until such time as LEDs are installed.

[66] Failures cited are: Choke, fuse, insulated spigot, globe, light bracket, luminaire, PE cell, service wire, shade, SL wiring (excluding mains), starter and visor. See Ausgrid revised proposal, Attachment 8.01, Revisions to the public lighting proposal, January 2015, p.8.

16.2.3 AER's assessment approach

This final decision applies the same assessment approach used in the draft decision.[67]

16.2.4 Reasons for final decision

In our final decision for public lighting, we have adopted the same estimate of WACC as for standard control services. The reasons for the real pre-tax WACC of 4.73 substituted in place of Ausgrid's proposed 7.14 per cent are discussed in rate of return, attachment 3.

The South Sydney Regional Organisation of Councils submission questions the maintenance assumptions proposed by Ausgrid.[68] We agree that Ausgrid's proposed failure rates are high and observe that they do not compare favourably with the failure rates of Essential Energy or Endeavour Energy.

We consider that the failure rates achieved by Essential Energy and Endeavour Energy are an appropriate benchmark to test Ausgrid against, as these distributors operate many of the same light types.

We do accept Ausgrid's contention that the draft decision did not take account of all luminaire components that fail, other than the globes. This final decision has taken into account the failure rates of all luminaire components. However, we consider that the failure rates proposed by Ausgrid are nevertheless too high. Our final decision on failure rates for Ausgrid are set out in Table 16.8.

Table 16.8 Failure Rates, per cent

	Draft Decision	Final Decision
Compact Fluorescents	6.0	8.53
Compact Fluorescent 42W	6.0	3.53
High Pressure Sodium	5.0	10.88
Low Pressure Sodium	6.0	10.76
Mercury Vapour	4.0	4.47

Source: AER analysis.

The failure rate for Ausgrid's compact fluorescent 42W in the final decision operating expenditure model has however been set at a lower rate of 3.53 per cent. Compact

[67] *Ausgrid draft decision 2015–16 to 2018–19: Attachment 16: Alternative control services*, 27 November 2014, pp. 5455.

[68] SSROC Public Lighting Submission, 13 February 2015, p. 3.

fluorescent 42Ws lamps that fail will not be replaced like for like and will not need opex. This is because in calculating prices for public lighting we have approved forecast capex for Ausgrid to replace these luminaires with LED lamps at the time of failure or earlier.[69]

The draft decision set a four year bulk replacement benchmark for all lamps. However, we accept that distributors need to take account of their population of light types and that Ausgrid's proposed three year bulk replacement of globes is efficient. This is because of the evidence presented that 41,000 of its lights would not be compliant with lighting standards if replaced on a four year cycle rather than the current three years.[70] Ausgrid is prioritising working with local councils to transition to longer life LED technology as an alternative to the status quo. Local councils have called for and are supportive of a move towards LED technology.[71]

Ausgrid's proposed repair time for spot outages of 45.4 minutes was derived from a time and motion study.[72] We accept this evidence because it is the only substantive information available to us and we consider it to be reasonable.

Labour escalators have been updated from the draft decision and are set out in Table 16.9 . As in the draft decision, we have adopted the same labour escalation rates as for standard control services. The reasons for the final decision on labour rates are discussed in opex, attachment 7.

Table 16.9 NSW Labour Escalators, per cent

	2013—14	2014—15	2015—16	2016—17	2017—18	2018—19
Draft Decision	0.58	0.89	0.87	1.40	1.62	1.44
Final Decision	na	1.34	1.02	1.07	1.11	1.10

Source: AER analysis.

The final decision implements a reduction in opex of 25 per cent or $3.8 million in 2015-16, resulting from the application of benchmark failure rates. Our final decision total opex is set out in

[69] As pointed out in SSROC Public Lighting Submission, 13 February 2015, p. 5.
[70] Ausgrid revised proposal, Attachment 8.01, Revisions to the public lighting proposal, January 2015, p. 7.
[71] SSROC Public Lighting Submission, 13 February 2015, p. 14.
[72] Ausgrid revised proposal, Attachment 8.01, Revisions to the public lighting proposal, January 2015, p. 12.

Table 16.10.

Table 16.10 Total opex, $millions

	2015—16	2016—17	2017—18	2018—19
Revised Proposal	19.1	19.6	20.2	20.8
Final decision	15.2	15.6	16.1	16.5

Source: AER analysis.

Our final decision on prices for each light type are set out in appendix X, including a reduction in post 2009 capital charges of 20 per cent from Ausgrid's revised proposal due to a lower WACC.

16.3 Metering

Our final decision on Ausgrid's metering proposal is made in the context of ongoing policy reform. We based our assessment on the National Electricity Rules (NER) in place at the time of this final decision, but have had regard to the likelihood of policy reform in the future through rule changes that will apply during this regulatory period.

Currently, competition in metering is limited to large customers in the national electricity market while regulated distributors have the sole responsibility to provide small customers with metering services.[73]

The Australian Energy Market Commission (AEMC) is undertaking a rule change process to expand competition in metering and related services to help facilitate a market led roll out of advanced metering technology, following proposals from the COAG Energy Council. The increased availability of advanced meters will enable the introduction of more cost reflective network prices and allow consumers to make more informed decisions about how they want to use energy services.

The AEMC published its draft rule on 26 March 2015. It provides that the AER should determine 'the arrangements for a DNSP to recover the residual costs of its regulated metering service in accordance with the existing regulatory framework'.[74] Other key features of the draft rule change include:

- the transfer of the role and responsibilities of the existing 'Responsible Person' to a new type of Registered Participant called a Metering Coordinator
- allowing any person to become a Metering Coordinator, subject to meeting the registration requirements
- permitting a large customer to appoint its own Metering Coordinator

[73] NER clause 7.2.3(a). Small customers refers to any customer with less than 160MWh annual consumption (effectively all residential and small business customers fall into this category).

[74] AEMC, *Draft rule determination: Expanding competition in metering and related services,* 26 March 2015, p. 225.

- requiring a retailer to appoint the Metering Coordinator, except where a large customer has appointed its own Metering Coordinator.[75]

Our final decision takes the AEMC's draft rule into account and establishes a regulatory framework for the 2015-19 regulatory control period which will be robust enough to handle the transition to competition once the rule change takes effect from 1 July 2017.[76] This involves having transparent standalone prices for all new or upgraded meter connections and cost-reflective annual charges.

The key issue in the lead up to competition is how to recover the metering capital costs that risk becoming stranded when metering customers begin to switch to competitive metering providers. Rather than a large upfront exit fee which would create a regulatory barrier to competitive entry, our final decision is that switching customers continue to pay the capital cost component of the regulated annual metering service charge.

16.3.1 Final decision

Structure of metering charges

We classify type 5 and 6 metering services as alternative control services.[77] The control mechanism for alternative control metering services will be caps on the prices of individual services.[78]

Our final decision approves two types of metering service charges:

- Upfront capital charge (for all new and upgraded meters installed from 1 July 2015)
- Annual charge comprising of two components:
    - capital—metering asset base (MAB) recovery
    - non-capital—operating expenditure and tax.

We have not approved a meter transfer fee relating to administrative costs associated with metering customers who switch to a competitive metering provider.

Figure 16.4 depicts how the two regulated annual charge components relate to different metering customers.

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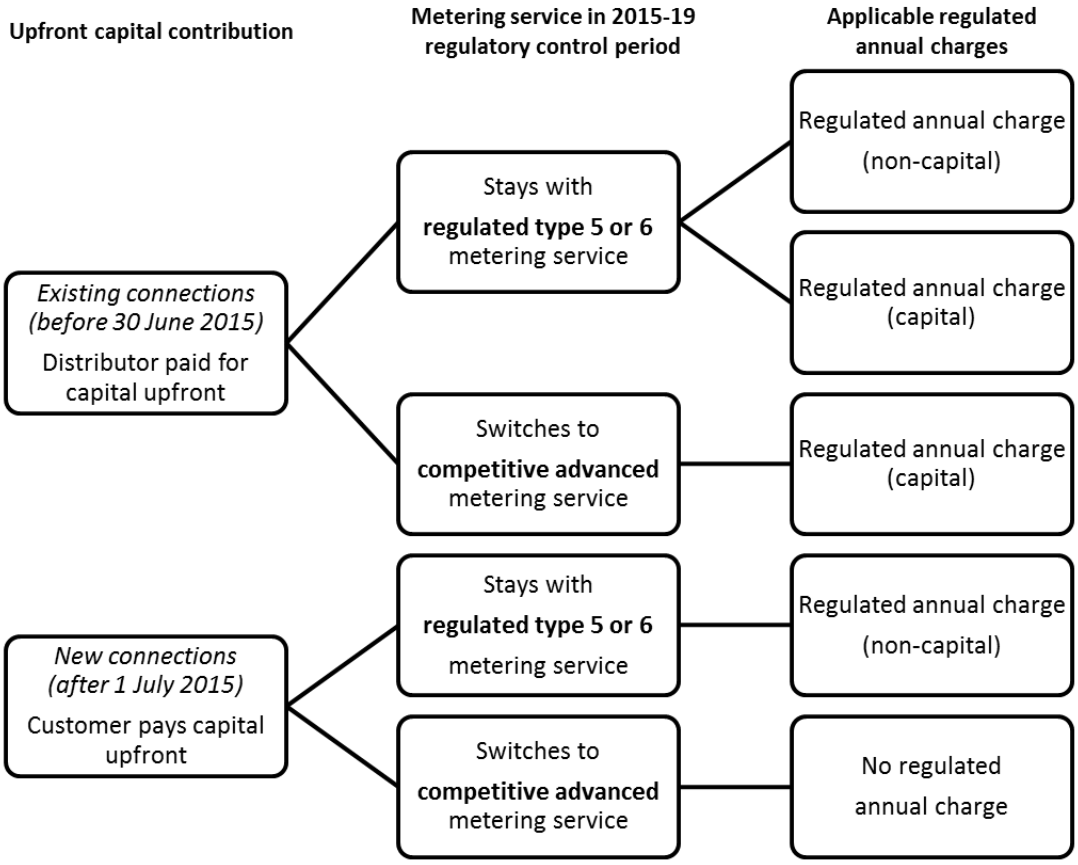
75 AEMC, *Draft rule determination: Expanding competition in metering and related services,* 26 March 2015, p. iii.

76 AEMC, *Draft rule determination: Expanding competition in metering and related services,* 26 March 2015, p. 79.

77 AER, *Draft decision on Ausgrid's regulatory proposal: 2014-15 and 2015–19*, November 2014, p. 16–29.

78 AER, *Draft decision on Ausgrid's regulatory proposal: 2014-15 and 2015–19*, November 2014, p. 16–29.

Figure 16.4 – Applicable regulated annual metering charges



Source: AER analysis.

This diagram shows regulated annual charges only. In addition, customers who switch may incur charges for their competitive advanced metering service. Any such charges are not subject to AER oversight and are not shown in the diagram above.

Existing connections (before 30 June 2015)

For regulated meters installed before 30 June 2015, metering capital costs were amortised. That is, distributors paid upfront for the capital costs which were then added to the asset base and recovered gradually through annual charges.

If a customer with an existing regulated metering connection on their premises receives a regulated type 5 or 6 metering service, they pay the following charges:

- Capital (MAB recovery[79]) component of regulated annual metering charge
- Non-capital (opex and tax) component of the regulated annual metering charge.

[79] The MAB is largely the undepreciated value of all existing meters. It will increase slightly in the 2015–19 regulatory control period to include forecast replacement capex. A meter has to be replaced if it suddenly fails or may have to be proactively replaced because the distributor must comply with AEMO's metrology procedures.

If a customer with an existing regulated metering connection on their premises chooses to switch to a competitive advanced metering service (and no longer receives a regulated type 5 or 6 metering service) they stop paying the non-capital component of the regulated annual metering charge. They will pay the following charges:

- Capital component of the regulated annual metering charge.
- This charge recovers the MAB from all customers with existing connections (from before 30 June 2015) on their premises, whether or not they subsequently switch from their existing regulated meter to an advanced meter. As a result, the diminishing number of customers who remain with their existing regulated meters are not required to pay the entire capital cost of the MAB. This has the benefit of minimising cross subsidies between customers switching to competitive meters and those remaining on regulated meters. It also means the contribution towards the recovery of the metering asset base is relatively small because it is paid through ongoing annual charges rather than an upfront exit fee.
- Any charges payable to their competitive metering provider for advanced metering services. Any such charges are not subject to AER oversight and are not shown in Figure 16.4.

This structure applies even if a customer pays upfront for a meter upgrade to their existing regulated meter after 1 July 2015 (for example, wants to upgrade from a type 6 to a type 5 meter) and then switches to a competitive advanced metering provider. This is because the upfront capital charge recovers the costs of the meter upgrade, but not of the existing meter installed before 30 June 2015.

New connections (after 1 July 2015)

For regulated new meter connections installed after 1 July 2015, the capital costs will be paid upfront by the customer. As such, no capital expenditure related to new meter connections installed after this date will be added to the metering asset base.

If a customer has a new regulated metering connection that was installed on their premises after 1 July 2015 and receives a regulated type 5 or 6 metering service, they pay the following charges:

- Non-capital component of the regulated annual metering charge.
- As they have already paid for their capital component upfront, the only costs relating to their regulated metering service left to be recovered through annual charges are the non-capital costs.

If a customer has a new regulated metering connection on their premises and wants to switch to a competitive advanced metering service (and no longer receives a regulated type 5 or 6 metering service), they stop paying all regulated annual metering charges. They will pay the following charges:

- Any charges payable to their competitive metering provider for advanced metering services. Any such charges are not subject to AER oversight and are not shown in Figure 16.4.

Annual metering service charges

We generally accept Ausgrid's building block approach as the basis for establishing annual metering charges. With respect to each building block, our final decision is:

- Opening metering asset base

  We considered the opening metering asset base (MAB) value. In its revised regulatory proposal, Ausgrid agreed with the substitute MAB value in our draft decision. We therefore accept an opening MAB value as at 1 July 2014 of $267.2 million ($nominal).

- Depreciation

  We accept the proposed remaining lives of each asset category. This includes the proposal for shorter asset lives for buildings and equity raising costs.

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

- Forecast capex

  We accept Ausgrid's proposed forecast capex building block. Our final decision allows $117.8 million in capex for annual metering charges ($2014-15).

- Forecast opex

  In assessing the metering opex building block, we used a base-step-trend approach to developing an alternative forecast. Our cost assessment led us to accept $111.0 million in opex for annual metering charges and substitute that amount for the proposed $142.7 million ($2014-15).

Based on our cost assessment of the individual building blocks we rejected Ausgrid's proposed price caps for annual metering charges. Our substitute price caps are set out in Appendix A.

Upfront capital charges

We accept Ausgrid's proposed price caps for new or upgraded connections, which from 1 July 2015 will be recovered as an upfront charge to customers. The charges we have accepted are set out in Appendix A.

Meter transfer fee

We do not approve a meter transfer fee for Ausgrid. We find that there are no additional tasks or functions these distributors will have to assume when customers change meter provider. Thus there are no incremental costs.

Control mechanism

Our final decision is to apply price caps for individual type 5 and 6 metering services as the form of control. Under this form of control a schedule of prices is set for the first

year. For the following years the previous year's prices are adjusted by CPI and an X factor. The control mechanism formula is set out below:

$$\bar{p}_i^t \geq p_i^t \qquad \text{i=1,...,n and t=1,2,3,4}$$

$$\bar{p}_i^t = \bar{p}_i^{t-1}(1+\Delta CPI_t)(1-X_i^t)$$

Where:

$\bar{p}_i^t$ is the cap on the price of service i in year t. However, for 2015–16 this is the price as determined in Appendix A.

p_i^t is the price of service i in year *t*.

$$\Delta CPI_t = [\frac{CPI_{Mar,t-2} + CPI_{Jun,t-2} + CPI_{Sep,t-1} + CPI_{Dec,t-1}}{CPI_{Mar,t-3} + CPI_{Jun,t-3} + CPI_{Sep,t-2} + CPI_{Dec,t-2}}] - 1$$

CPI means the all groups index number for the weighted average of eight capital cities as published by the ABS, or if the ABS does not or ceases to publish the index, then CPI will mean an index which the AER considers is the best estimate of the index.

X_i^t is:

for the annual metering charges, the factors set out in Table 16.11

for the upfront capital charges, the factors set out in Table 16.12.

Table 16.11 – Approved X–Factors for annual metering charges (percent)

	2016–17	2017–18	2018–19
X factor	1.89	1.89	1.89

Source: AER analysis

Table 16.12 – Approved X–Factors for the upfront capital charges (percent)

	2015–16	2016–17	2017–18	2018–19
X factor	0.0	0.0	0.0	0.0

Source: AER analysis

We will check for compliance with the control mechanism during the annual pricing process. To be compliant, Ausgrid must annually adjust individual price caps in accordance with the control mechanism formula shown above. Further, Ausgrid must show that individual prices are less than or equal to the approved price cap for that individual service through providing a copy of their published price list for that year.

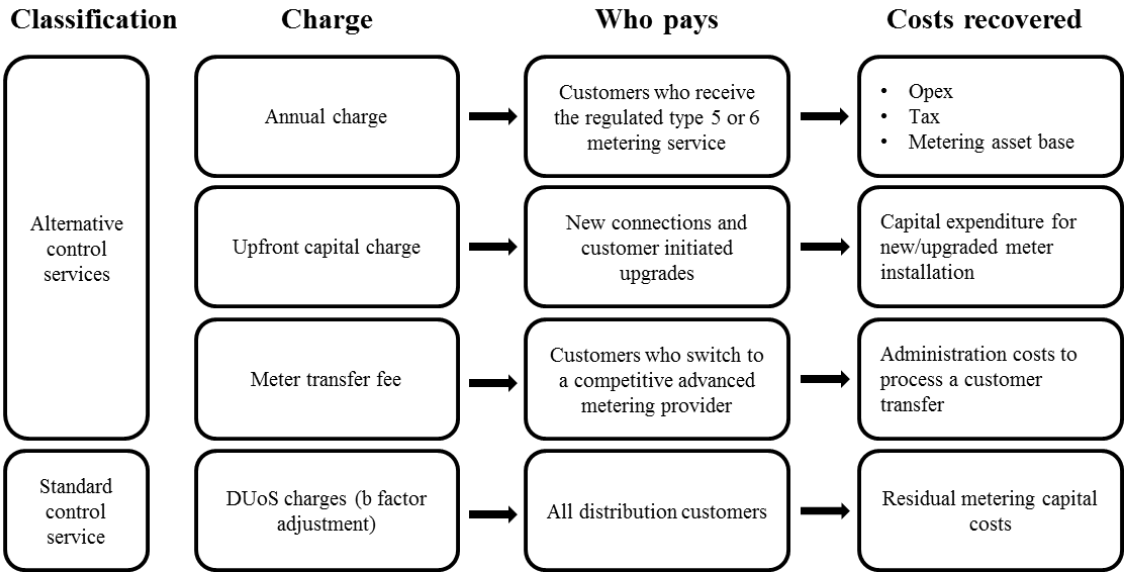
16.3.2 Ausgrid's revised proposal

In January 2014, Ausgrid submitted its revised metering proposal for the 2015–19 regulatory control period. It accepted the proposed service classification and control mechanism outlined in our draft decision.[80] That is, Ausgrid classified types 5 and 6 metering services[81] as alternative control services and proposed price caps on individual services.[82]

Structure of metering charges

Ausgrid had the following structure of metering charges in its revised proposal:

Figure 16.5 – Ausgrid's revised proposal structure of metering charges



Source: AER analysis

Ausgrid's revised proposal was largely consistent with our draft decision.

The key change in Ausgrid's charging structure from the initial to the revised proposal was that Ausgrid accepted our draft decision to recover residual metering capital costs across all distribution customers as a standard control service, notwithstanding their concern that this approach adds "an artificial cost burden on customers."[83]

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80 Ausgrid, *Revised Regulatory Proposal, Attachment 8.04 Revisions to the Type 5 and Type 6 Metering Services Proposa*l, January 2015, p. 3.

81 Includes meter provision and maintenance, meter reading, and data services.

82 Ausgrid, *Revised Regulatory Proposal, Attachment 8.04 Revisions to the Type 5 and Type 6 Metering Services Proposa*l, January 2015, p. 3.

83 Ausgrid, *Revised Regulatory Proposal, Attachment 8.04 Revisions to the Type 5 and Type 6 Metering Services Proposa*l, January 2015, p. 3.

However, the revised proposal differed from our draft decision in two ways.

Firstly, Ausgrid rejected the tolerance limit on the b-factor adjustment. Instead they proposed the tolerance limit should only apply to the DUoS overs and unders account.[84]

Secondly, while Ausgrid noted our preference to have a separate annual charge for new and existing customers[85], it did not incorporate our proposed approach in its revised proposal. This was because their internal modelling resulted in an immaterial difference between new and existing customers each year. Further, Ausgrid stated it would be costly and impractical to set up two different annual charges before 1 July 2015.[86]

Annual metering services

For each tariff class, Ausgrid proposed a price cap for annual metering services. The distribution business built up the costs that constitute the annual metering service charges by applying a 'building block' approach. This involved forecasting the revenue requirement for each of Ausgrid's metering cost categories and then translating this into price caps. Table 16.13 sets out Ausgrid's proposed metering building block requirement. Table 16.14 shows the proposed annual charges for metering services that recover the total proposed revenue.

Table 16.13 – Ausgrid's proposed metering building block revenue requirement ($ million, nominal)

	2014–15	2015–16	2016–17	2017–18	2018–19
Return on capital	23.6	23.8	23.6	24.0	24.4
Return of capital	20.5	23.0	25.4	21.6	20.9
Opex	28.0	29.1	30.1	31.3	32.5
Benchmark tax liability	2.1	3.9	6.0	5.6	3.8
Total	74.2	79.8	85.2	82.5	81.6

Source: Ausgrid, *Revised regulatory proposal, Attachment 8.06, Type 5 and 6 PTRM*, January 2015, p. 12–13.

[84] Ausgrid, *Revised Regulatory Proposal, Attachment 9.01 Application and Demonstration of compliance with control mechanism for standard control services*, January 2015, p. 5.

[85] AER, *Draft decision on Ausgrid's regulatory proposal: 2014-15 and 2015–19*, November 2014, p. 16–29. Under our suggested approach, new customers who pay for their capital costs upfront will have an annual charge that does not include capital costs (opex and tax only). Existing customers who did not pay for their capital costs upfront, will pay an annual charge that includes capital costs.

[86] Augrid, *Revised Regulatory Proposal, Attachment 8.04 Revisions to the Type 5 and Type 6 Metering Services Proposal*, January 2015, p. 13.

Table 16.14 – Ausgrid's proposed prices for annual metering services ($ annual, 2014–15)

Tariff class	Average prices (2014–15 to 2018–19)
Residential inclining block	34.13
Residential time of use	56.14
Controlled load	13.77
Small business inclining block	46.65
Small business time of use	54.68
LV 40–160MWh time of use	86.50
Generator tariff	16.40

Source: Ausgrid, *Revised regulatory proposal, Attachment 8.07, Type 5 and 6 metering pricing model*, January 2015. Converted to $2014-15.

Upfront capital charge

Ausgrid's treatment of new or upgraded connections in its revised regulatory proposal is consistent with its initial proposal. Where Ausgrid installs a meter for a new or upgraded connection at a customer's premises, Ausgrid proposed caps (or ceilings) on the prices it can charge. From 1 July 2015, new or upgraded connections will require a customer to make a full upfront capital contribution.[87]

The change in Ausgrid's capital contribution policy for new and upgraded connections is intended to promote competition. If implemented, Ausgrid noted that it may level the competitive playing field for new and upgraded meters.[88] This is by shifting how the capital costs for new or upgraded meters are recovered, from the annual metering services charge where costs are smeared across all customers, to an upfront payment which new entrants to the market can compete with on price.

87 Ausgrid, *Revised regulatory proposal, Attachment 8.04, Type 5 & 6 metering services proposal*, January 2015, p. 3.

88 Ausgrid, *Regulatory proposal, Attachment 8.21, Energeia's review of Ausgrid's metering tariffs*, May 2014, p. 23.

Table 16.15 sets out Ausgrid's proposed charges for new and upgraded meters. For ease of reference, average prices for the 2015–19 regulatory control period are shown.

Table 16.15 – Ausgrid's averaged proposed new or upgraded meter prices in the 2015–19 regulatory control period ($2014–15)

Meter code	Meter description	Average price (2015–19)
B1	Single phase single element two wire direct connected accumulation watt–hour meter	48.38
B3	Three phase single element four wire direct connected accumulation watt–hour meter	124.58
E1	Single phase single element two wire direct connected interval watt–hour meter	116.82
E2	Single phase dual element two wire direct connected interval watt–hour meter	177.96
E3	Three phase single element four wire direct connected interval watt–hour meter	240.34
E4	Three phase single element CT connected interval watt–hour meter	579.33

Source: Ausgrid, *Revised regulatory proposal, Attachment 8.07, Type 5 and 6 metering pricing model*, January 2015. Converted to $2014-15.

16.3.2.1 Meter transfer fee

Ausgrid proposed a meter transfer fee as an alternative control service that

> …relates to the administrative requirement to change system records to reflect the changed status, the return of the meter and the processing costs of relaying this information from Ausgrid systems to market participants.[89]

Its proposed fee of $36 ($2014–15) was to undertake these activities.[90]

NSW distributors did not make any comments in their initial or revised proposals about attending site to remove old meters. By contrast, their Queensland counterparts included attending site and removal and disposal of meters in their costing. These estimates were provided at a granular level.

Evidence presented by Energex suggested that approximately 15 minutes of administrative time would be needed to undertake necessary meter churn activities. Ergon Energy by comparison proposed 10 minutes of an employee's time to change

[89] Ausgrid, Revised Regulatory Proposal, Attachment 8.04 Revisions to the Type 65 and Type 6 Metering Services Proposal, p. 15.

[90] Ausgrid, Revised Regulatory Proposal, Attachment 8.04 Revisions to the Type 65 and Type 6 Metering Services Proposal, p. 17.

the customer's status in data logger and relay information to other parties.[91] An extra 25 minutes would be devoted to removing and disposing of the obsolete meter.[92]

In NSW, the same services varied from 20 minutes to half an hour. South Australia's distributor, SA Power Networks included a total charge however it was not clear how many minutes of staff time made up this charge from the information they provided, while ActewAGL sought a quarter hour. The proposed total costs and fees payable by customers in the first year of the regulatory control period are set out in Table 16.16. We have not included the proposed charges for subsequent years; suffice to say that they increase each year. Those charges are included in the distributors' revised regulatory proposals.

Table 16.16 Distributors' proposed year one meter transfer fee ($2014–15)

Distributor	Time (hours)	Hourly rate	Total charge per meter, including overheads
Ausgrid	0.41	86.15	35.87
Endeavour Energy	0.33	64.20 to 86.73	64.91
Essential Energy	0.45	105.96	48.87
ActewAGL	0.25	82.39	30.79
SA Power Networks	Not provided	Not provided	69.50
Energex	0.25	63.57	30.97
Ergon Energy	0.58	87.12	50.53

Source: NSW/ACT distributors revised proposals, Qld and South Australia distributors' initial proposals.

16.3.2.2 Control mechanism

Ausgrid did not accept our draft decision that the X factor should be set at zero, but rather, that it should vary across the individual price caps.[93] It considers that internal labour, labour hire, contracted services and material escalators should apply.[94]

Ausgrid did not accept our draft decision CPI calculation. It contends that CPI should be calculated in the same way as CPI for distribution standard control services is calculated which is based on four quarters of the year, and not just December quarter.[95]

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91 Ergon Energy, 05.03.01 Default Metering Services Summary (Type 5 & 6 Meters), p.32.

92 Ergon Energy, 05.03.01 Default Metering Services Summary (Type 5 & 6 Meters), p.32.

93 Ausgrid, *Revised Regulatory Proposal, Attachment 8.04 Revisions to the Type 5 and Type 6 Metering Services Proposal*, January 2015, p 17.

94 Ausgrid, *Revised Regulatory Proposal, Attachment 8.04 Revisions to the Type 5 and Type 6 Metering Services Proposal*, January 2015, p 18.

95 Ausgrid, *Revised Regulatory Proposal, Attachment 8.04 Revisions to the Type 5 and Type 6 Metering Services Proposal*, January 2015, p 19.

16.3.3 Assessment approach

Ausgrid has proposed price caps on three categories of metering services. These are annual metering services, upfront capital charges for new or upgraded connections, and a meter transfer fee.

Structure of metering charges

AEMC Draft Rule Change

AEMC's draft rule change does not specify a method, but considered that the AER should determine how distributors recover residual capital costs of its regulated metering service in accordance with the existing regulatory framework.[96]

National Electricity Law

We had regard to the national electricity objective and the revenue and pricing principles which include providing a distribution business with a reasonable opportunity to recover at least its efficient costs.[97]

National Electricity Rules

We had regard to the distribution pricing principles set out in 6.18.5 which includes the requirement that revenue recovered should be between standalone and avoidable cost of serving that customer group.

In determining the appropriate structure of metering charges we have made decisions on the classification of the service and the control mechanism. The classification and control mechanism to recover metering capital costs that risk becoming stranded if a customer switches was not explicitly considered in our Stage 1 Framework and Approach.[98] Our final decision classification and control mechanism has been made with regard to the factors set out in clauses 6.2.2(c) and 6.2.5 (c) of the NER. We had particular regard to:

- how the classification/control mechanism may influence the potential for competition in unregulated metering
- a method that provides administrative simplicity for customers, Ausgrid and the AER where possible
- the extent to which costs can be directly attributable to individual customers in order to minimise cross subsidies.

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96 AEMC, *Draft Rule Determination (Expanding competition in metering and related services)*, 26 March 2015, p 225

97 NEL, Revenue and Pricing Principles, 7A (2).

98 NER, cl. 6.12.3 (b) (cl). We may depart from the classification and control mechanism decisions made in our framework and approach paper if we consider there have been unforeseen circumstances. The unforeseen circumstance in this case was that there previously was no stranding risk because customers had no choice to exit regulated metering. As such, we did not consider residual metering costs in our framework and approach paper (March 2013) which was released prior to SCER metering rule change request (October 2013).

We also have a preference for a nationally consistent approach. Our approach to the classification of services is discussed in Attachment 13.

Annual metering service charges

We assessed Ausgrid's proposed opening MAB, depreciation, operating and capex components associated with the annual metering service.

Opening metering asset base

In assessing Ausgrid's proposed opening MAB, we reviewed how Ausgrid had separated its proposed opening metering regulatory asset base (RAB) as at 1 July 2014, from the RAB for standard control services.

Depreciation

With respect to depreciation, we considered the remaining asset lives Ausgrid proposed and had regard to the opening of competition to metering services.

Forecast capex

In assessing the proposed forecast capex, our assessment approach did not change from our draft decision. We reviewed Ausgrid's unit costs and volume forecasts. More specifically, we assessed Ausgrid's proposed 'material' and 'non–material' unit costs and the forecast volume of reactive and proactive replacements. Material costs relate to the hardware used to provide metering services. Non–material costs relate to the labour activities which Ausgrid must perform to install a new or replaced meter.

From 1 July 2015, Ausgrid's customers will incur an upfront payment recovering the capital cost of meters installed at 'new or upgraded connections'. The commencement date for the upfront payment (1 July 2015) is the earliest available under the NER. This provides that the existing cost allocation approach leading up to the placeholder year must be retained into 2014–15.[99] In the case of new or upgraded connections, the capital cost of the meters must be recovered under the general network charge for standard control services. However from 1 July 2015, Ausgrid proposed to change its capital contribution policy so that such costs are recovered directly from customers.

New or upgraded connections in 2014-15 formed part of our assessment of Ausgrid's proposed capex building block for annual metering services. However the 'true–up' of any differences between the capital costs Ausgrid recovered in the 2014–15 placeholder year with our assessment of what we consider to be prudent and efficient will be recovered under the general network service charge.

[99] NER, cl. 6.15.2(7).

Forecast opex

We applied the same approach to assessing Ausgrid's proposed opex, as in our draft decision.

Opex refers to the operating, maintenance and other non–capital costs, including labour, incurred in the provision of metering services.

After determining Ausgrid's efficient base opex, and accounting for any (positive or negative) step changes, we trended forward that amount over the 2015–19 regulatory control period. This is known as the ‘base, step and trend’ approach.

Base

As opex is largely recurrent in nature, we considered Ausgrid's historical costs to be a useful starting point to establish a base to forecast future costs. We also used benchmarking to assess the relative efficiency of the base year compared with comparable network businesses in the national electricity market.

Our base assessment uses historical data over a five year period, rather than selecting a single base year. Given that we do not apply an efficiency benefit sharing scheme (EBSS) to alternative control services, we consider an average of multiple years to be a better measure of a business’ efficient base; it avoids any incentive to ‘load’ a single base year with expenditure going forward.

We used 'opex for metering' data collected in our economic benchmarking regulatory information notices (RIN). This audited data is suitable for comparison because the data provided by the distributors was prepared according to a consistent set of instructions and definitions.[100]

Our metering assessment relates to annual charges for default metering services common to all regulated type 5 and 6 metering customers. There are also ancillary metering services paid for by customers specifically requesting a service like an off-cycle meter read or a meter accuracy test. However, the economic benchmarking metering opex data does not distinguish between ancillary and default metering services. We did not make this adjustment for the draft decision, but have adjusted base metering opex data to exclude ancillary metering service costs for the final decision.

With this adjusted base data, we then performed our benchmarking analysis. We used a partial performance indicator for our benchmarking analysis. This compared historic annual metering opex per customer across non-Victorian distributors[101] in the national electricity market.

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[100] AER, *Economic benchmarking RIN for distribution network service providers - Instructions and Definitions - Sample*, November 2013.

[101] Victorian distributors rolled out advanced metering technology in the last regulatory period. These costs are not comparable to other distributors which have type 5 and 6 meters.

Our benchmarking analysis for metering is a simpler version than what we used to assess standard control opex. This reflects the generally lighter handed regulatory approach to alternative control services compared with standard control services. For example, our econometric modelling results we used to assess standard control opex were based on data for network services and therefore do not strictly apply to metering services.

As with our draft decision, we adjusted the benchmarking results for customer density. This is a network characteristic exogenously influences opex requirements.

We also took Ausgrid's revised regulatory proposal into account. In particular, we considered if Ausgrid had demonstrated whether any further exogenous influences, other than customer density, should be taken into account.[102]

Step changes

When assessing a distributor's proposed step changes, we consider whether they are needed for the total opex forecast to reasonably reflect the opex criteria.[103] Our assessment approach is consistent with our *Expenditure forecast assessment guideline*.[104]

We generally consider an efficient base level of opex is sufficient for a prudent and efficient distributor to meet all existing regulatory obligations. This is the same regardless of whether we forecast an efficient base level of opex based on the service provider's own costs or the efficient costs of comparable benchmark providers. We only include a step change in our opex forecast if we are satisfied a prudent and efficient service provider would need an increase in its opex.

Step changes should generally relate to a new obligation or some change in the service provider's operating environment beyond its control. It is not enough to simply demonstrate an efficient cost will be incurred for an activity that was not previously undertaken.

Trend

We then trended forward base opex (plus any step changes) by considering forecast changes in output, price and productivity.

For both capital and operating expenditure, we had regard to the capital and operating expenditure objectives and criteria in chapter 6 of the NER.[105] Though these considerations relate to standard, as opposed to alternative, control services, they are

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[102] AER, *Draft decision on Ausgrid's regulatory proposal: 2014–15 and 2015–19*, November 2014, p. 16–43; AER, *Draft decision on Endeavour Energy's regulatory proposal: 2014–15 and 2015–19*, November 2014, p. 16–43; AER, *Draft decision on Essential Energy's regulatory proposal: 2014–15 and 2015–19*, November 2014, p. 16–43.

[103] NER, clause 6.6.5(c).

[104] AER, *Expenditure assessment forecast guideline*, November 2013, p.11, 24.

[105] NER, cll. 6.5.6 and 6.5.7.

helpful and relevant in providing a general framework for assessing a building block expenditure forecast. Among other things, when considering a distribution business's forecast, the capital and operating expenditure objectives and criteria state we should consider:

- the efficient costs required
- the costs a prudent operator would incur
- whether the proposed cost inputs are realistic.[106]

Upfront capital charge

To assess the reasonableness of the proposed charges from 1 July 2015, we analysed Ausgrid's unit costs. We did not consider the forecast volumes of new or upgraded connections for the 2015–19 regulatory control period; they have no bearing on the quantum of the upfront charge.

Meter transfer fee

Our draft decision did not make an explicit decision on the meter transfer fee proposed by Ausgrid. It sought more evidence from distributors as to the quantum and rationale for these fees. Stakeholders' views were also sought.

We must balance revenue recovery for the efficient costs of the distributor's service provision with identifying and removing barriers to entry and competition, consistent with the proposed metering rule change submitted by the COAG Energy Council and currently being deliberated by the Australian Energy Market Commission.[107]

We undertook a cost assessment underlying the proposed meter transfer fees to determine the efficiency of those costs. To asses costs we considered the activities either required, or reasonably expected to be required, for a meter transfer, by both a distributor and a competing metering provider. We had regard to the costs estimated to be incurred from such activities in New South Wales, the Australian Capital Territory, Queensland and South Australia. Victorian distributors are under a State Government mandated smart meter roll out, and so meter transfer is not a comparable activity that can be presently undertaken and therefore benchmarked.

We consulted with first and second tier retailers and the Australian Energy Market Operator to ascertain those activities necessary for the efficient transfer of meter customers among service providers. The New South Wales and Australian Capital Territory distributors' revised revenue proposals, and the initial proposals from Queensland and South Australia's distributors, outlined the activities they would undertake to transfer customers.

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[106] NER, cll. 6.5.6(c) and 6.5.7(c).

[107] Australian Energy Market Commission, Draft rule determination, Expanding competition in metering and related services, 26 March 2015.

16.3.4 Interrelationships

Our final decision should provide Ausgrid with an opportunity to recover at least its efficient costs.[108] This includes, where relevant, providing enough expenditure for the business to repay its debt financing costs and earn a reasonable return on its investments.

Our final decision on Ausgrid's alternative control metering proposal, therefore, interrelates with our assessment of its proposed rate of return. Refer to attachment 3 of this preliminary decision for the rate of return we accept for direct control services, [109] along with our reasons. Unlike standard control services, we will not be annually adjusting for the return on debt for alternative control services. The only annual changes for price caps for alternative control services will be consistent with our price control mechanism formula set out in 16.3.1.

16.3.5 Reasons for final decision

Our reasons for decision on the structure of metering charges, annual metering service charges, upfront capital charges for new or upgraded connections, and the meter transfer fee are discussed in this section.

Structure of metering charges

Our final decision approves two types of charges:

- Upfront capital charge (for all new and upgraded meters installed from 1 July 2015)
- Annual charge comprising two components
    - capital—metering asset base (MAB) recovery
    - non-capital—operating expenditure and tax.

We approve an upfront capital charge for two reasons. Firstly, it directly attributes the capital costs to the customer who initiates the meter installation. Secondly, it is appropriate in the context of expanding competition in metering. It is difficult to forecast the number of new regulated type 5 and 6 meters that will be installed in the upcoming 2015–19 regulatory control period. By charging upfront, we avoid having to forecast capital expenditure for new and upgraded metering installations that may not eventuate.

To better meet the distribution pricing principles, it important for annual charges to be set on a cost-reflective basis. It is particularly significant in the context of expanding competition in metering. Previously, metering was a standard control service and the related metering costs were bundled into general network tariffs. There was no transparency around the costs of providing regulated metering services. By setting

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[108] NEL, Revenue and Pricing Principles, 7A (2).

[109] Direct control services include standard and alternative control services.

cost-reflective regulated metering charges, customers will be able to compare the costs of their current regulated service with offers from alternative metering providers when competition begins.

We consider that a cost-reflective annual charge for new metering connections installed after 1 July 2015 should only consist of non-capital costs (operating expenditure and tax). This is because the capital cost of meters installed after 1 July 2015 would have been fully customer funded. In contrast, pre 30 June 2015 customers on a regulated type 5 or 6 metering service who have not paid for the meter upfront should contribute to the MAB recovery through their annual charge. That is, they pay a cost-reflective annual charge that includes both capital and non-capital components. This is the way such customers pay for their regulated metering services now.

However, if a customer chooses to switch to a competitive metering provider, the capital component of the annual charge would become stranded for the distributor. That is unless there is a mechanism for recovering that cost. It is important to recognise that customers pay the capital costs of a meter on an annual basis, they represent an amortised cost (that is, have been paid for upfront by the distributor and then recovered gradually over time from customers). Past capital expenditure is a fixed cost because it does not vary with how many customers switch; the capital costs have already been incurred by the distributor to provide a regulated metering service. This is in contrast to metering operating expenditure, such as meter reading costs, which are largely variable. This means the distributor can avoid those costs if a customer switches.[110]

QCOSS considers "*it would be inappropriate to recover residual costs associated with a service that customers are not getting any benefit from…. distributors should not be allowed to recover such costs from consumers - either through a charge which is allocated across all customers nor via individual exit fees*."[111] But this effectively means that the distributor would be unable to recover the undepreciated residual value of those meters. The revenue and pricing principles provide that distributors should have a reasonable opportunity to recover at least their efficient costs. We therefore consider it appropriate that distributors recover their fixed capital costs that were incurred in providing regulated metering services.

Accordingly, we considered the most appropriate way to recover metering capital costs incurred in providing regulated metering services that risk becoming stranded if a customer switches.

Ausgrid (and other distributors) initially proposed to charge an upfront exit fee when a customer wished to switch to a competitive metering provider. This would ensure they

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[110] Although the capital costs of the meter remain to be recovered by the distributor, there is no longer any need to read the meter, thus providing an opex saving.

[111] QCOSS, *Submission to AER Consultation Paper (Recovery of Residual Metering Costs)*, 31 March 2015, p 2

recovered their metering capital costs for existing meters that would otherwise become stranded.

However various stakeholders raised concerns that a large upfront exit fee would be a barrier to competitive entry and to the take up of advanced metering.[112] In particular, it potentially creates a first mover disadvantage because a market-led smart meter rollout is predicated on the customer not having to pay any charges upfront.[113] Therefore, the first mover competitive metering provider may have to pay for both an exit fee as well as the new smart meter—and bear the risk of those sunk costs if the customer decided to move to another competitive metering provider. We find that exit fees create a regulatory barrier to a market-led roll out of advanced metering.

There are several methods of ensuring distributors can recover capital costs incurred in providing regulated metering services. After extensive consultation with stakeholders[114], we decided on a method that we considered best balances the objectives of distributors and customers and meets regulatory objectives to promote competition in metering services.

Based on economic principles, the efficient investment signal to switch to unregulated metering would be to set individual exit fees based on the remaining economic value of the individual meter associated with the customer making the decision to switch. The remaining economic value would vary with the capability of the meter (the meter type) and remaining life (the age) of the meter. This would ensure that an existing meter would only be replaced if the new meter delivers sufficient additional economic value to cover its own cost and any remaining economic value of the existing regulated meter.

Although we considered that at a theoretical level this option has merit, at a practical level it has substantial shortcomings for a range of reasons. Firstly there is limited information as most distribution businesses do not record information about asset type or age at the individual customer level. Secondly, we are not satisfied that the amount distribution businesses are entitled to recover (based on actual costs) necessarily corresponds to the remaining economic value of a meter. For example, if a meter fails, distributors are still allowed to recover the capital costs that were incurred to provide

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[112] Consumer Challenge Panel, *Updated submission on NSW DNSPs regulatory proposals 2014-19*, 15 August 2014, pp. 36-7.
Vector Limited, *Submission on DNSPs regulatory proposals*, 8 August 2014 p. 4.
ERAA, *Submission on Issues paper NSW electricity distribution regulatory proposals*, 8 August 2014, p. 2.
Origin Energy*, Submission on NSW electricity distributors regulatory proposal (attachment 1)*, 8 August 2014, p. 33.
AGL, *Submission on NSW electricity distribution networks regulatory proposals*, 8 August 2014, p. 21.
PIAC, *Submission on NSW electricity distribution network price determination*, 8 August 2014, p. 105.

[113] Vector Limited, *Submission on DNSPs regulatory proposals*, 8 August 2014 p. 4.

[114] In addition to our normal consultative process which allows stakeholders to provide submissions on the distributor's proposal and our draft decision, we also held a metering workshop on 11 September 2014 and released a consultation paper (on the alternative approach to the recovery of the residual metering capital costs through an alternative control services annual charge) in March 2015. We received submissions from consumer groups, potential competitive metering providers, retailers and distributors.

that meter originally–even though the meter is no longer in service and therefore has no economic value. Also, regulated historic metering costs may not be efficient, as distribution businesses have not faced competitive pressures. Finally, we were concerned that it may be inappropriate to charge customers different exit fees that would vary with meter type and age because such investment decisions were made by distribution businesses, not customers.

Our draft decision involved recovering residual metering capital costs through charges for standard control services based on actual customer switching. These residual capital costs would then be recovered from the general distribution customer base through making a b-factor adjustment to annual revenue requirements, which would have the effect of (all things equal) increasing network tariffs. To mitigate network tariff price volatility that may arise if many customers switched in the one year, we proposed a tolerance limit on the b-factor.[115]

Our draft decision approach received wide support from most stakeholders.[116] Despite having some reservations, NSW distributors largely accepted our draft decision, but did not agree with the operation of the b-factor and the tolerance limit. ActewAGL did not support our approach primarily on the basis that there may be legal concerns on whether our draft decision approach would be permissible under the NER. In particular, whether residual capital costs can be recovered through standard control services in the way proposed. Ergon Energy shared the same concern.[117]

In response to the concerns raised, we consulted on alternatives that would not require moving residual capital costs through to the standard control RAB.[118] We settled on our final decision approach because it responds to and addresses the main concerns raised by the NSW and ACT distributors and in our view also better meets the national electricity objective.

Distributors recover the same amount overall under both our draft and final decision approaches. The difference is which particular customer class pays. Under our draft decision, a switching customer did not directly have to pay for the residual metering

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115 AER, *Draft decision on Ausgrid's regulatory proposal: 2014-15 and 2015–19*, November 2014, p. 16–46.

116 Vector Limited, *Submission on the AER's Draft Decisions on NSW and ACT Electricity Distributors' Regulatory Proposals for 2015-16 to 2018-19*, p. 3.
ERAA, *Submission on NSW DNSPs draft decision*, 13 Feb 2015, p. 1.
Origin, *Submission on NSW draft decisions*, 15 Feb 2015, p. 22.
Consumer Challenge Panel, *Submission to AER Responding to NSW draft determination and revised proposals*, Feb 2015, p.41.
AGL, *Submission to AER on NSW electricity distribution network determinations 2014-19: AER draft decisions and revised regulatory proposals*, Feb 2015, pp.1-3.
TEC, Submission to AER on the draft determination on NSW DB's regulatory proposals 2014-19, Feb 2015, p.2.
NCOSS, Submission to the AER draft determination on NSW distribution business's revised regulatory proposals 2014–19, February 2015, p.7.

117 Ergon Energy, *Submission on the draft decisions: NSW and ACT distribution determinations 2015-16 to 2018-19*, Feb 2015, p. 35.

118 AER, *Consultation paper - Recovering the residual metering capital costs through an ACS annual charge*, March 2015

capital costs related to their regulated metering service. Instead, residual capital costs would be recovered from all distribution customers through network (DUoS) tariffs, including larger customers who have never received these metering services. Switching customers only indirectly paid for a small fraction of the residual metering capital costs through the increase in network tariffs (the same increase faced by all distribution customers).

This has been amended in our final decision, such that a metering customer switching from the distributor directly shares in the recovery of residual capital costs associated with their past regulated metering service with all other metering customers. They do so by continuing to pay the same capital component of the regulated annual charge as all other metering customers until the metering asset base is fully depreciated.

Our final decision addresses the NSW businesses concerns because it ensures steady cost recovery without the need for annual corrections through a b-factor adjustment or the application of tolerance limits. It also avoids the potential legal concerns raised by ActewAGL.

We consider our final decision to have switching customers continue to pay for the capital costs associated with the regulated metering service, on balance, better meets the regulatory objectives under the NEL and NER, than either Ausgrid's initial proposal or our draft decision approach. We considered:

- Impact on competition
    - The structure and quantum of regulated metering charges impact competitive entry (both upfront exit fees and the regulated annual charge).
    - Like our draft decision, our final decision removes the upfront exit fee which was identified as the primary barrier to competitive entry by stakeholders.
    - Like our draft decision, our final decision removes concerns about first mover disadvantage that would arise if the first mover had to pay the upfront exit fee and risk being undercut by another competitive provider that does not face the exit fee. Under the final decision, the customer is charged the capital component of the regulated annual metering charge directly.
    - Relative to our draft decision, our final decision increases the costs to switch to a competitive metering provider.[119] A higher switching cost relatively lowers the incentive to switch to a competitive metering provider, so our final decision approach may result in slightly slower uptake of competitive metering services, depending on how compelling an offer is by a competitive metering provider.

[119] Under our draft decision, a customer who switched only had to pay metering charges related to a competitive metering provider for their new advanced meter and a small proportion of residual metering capital costs through increased DUoS charges. Under our final decision, a customer who switches continues to pay the regulated annual charge (capital), in addition to any new advanced metering charge. The switching cost is therefore higher under our final decision.

- Administrative simplicity:
    - Our final decision makes use of existing information that Ausgrid has, rather than relying on further information on the remaining economic or technical life of individual metering assets which would be difficult to determine.
    - It is less complex than the draft decision which involved making annual adjustments to the b-factor and the standard control services RAB. Further, tolerance limits are no longer needed because there will be no price volatility under our final decision approach.
- The directly attributed cost to minimise cross subsidies.
    - Our final decision involves continuing to charge switching customers an ongoing regulated annual charge to recover metering capital costs associated with their past regulated metering service. We considered whether it was appropriate to continue to charge a regulated annual charge when a customer is no longer receiving an active regulated metering service. We consider that it is appropriate to charge switched customers for fixed capital costs associated with their past regulated metering services because it more directly attributes cost recovery to the customer group that caused those costs to be incurred and ensures that the distributor has an opportunity to at least recover its efficient costs. We consider this also strikes an appropriate balance to promote efficient investment as set out in the revenue and pricing principles.
    - Our draft decision involved cross subsidising residual costs across the general distribution customer base. For example, the network tariff paid by a large industrial customer who has never used a type 5 or 6 regulated metering service[120] would contribute towards paying off residual metering capital costs associated with switching customers.
    - Under our final decision, only customers at premises which currently or previously had a type 5 or 6 metering service will be paying for the capital costs incurred in providing type 5 and 6 metering services.
    - Nonetheless, our final decision still involves some cross subsidy. This is because the capital component of the annual charge is based on the average depreciated value of the MAB. We consider this is appropriate given that we do not have granular information on the customer's specific meter asset type or age.
    - Another form of cross subsidy is that the regulated annual charge (capital) a switching customer will pay for includes some recovery of forecast replacement capital expenditure that is not linked to the switched customer's past regulated metering service. The opening MAB value is based on past capital expenditure. The MAB is not forecast to grow much because from 1 July 2015, all new and upgraded meters will be paid for upfront and will

[120] Type 5 and 6 metering services are for smaller customers who consume less than 160MWh annually.

therefore not be included in the MAB. However, some forecast capital expenditure relating to replacement meters will be added to the MAB.[121] However, this is expected to be an interim issue as it is likely that distributors will not be able to install replacement meters after the metering rule change comes into effect on 1 July 2017.[122]

- Our final decision to charge for new and upgraded meters upfront removes the risk of future cross subsidy. This is because by charging capital costs upfront, it is directly attributed and paid for by the customer choosing to install that meter. There is no risk of metering capital costs becoming stranded.

Our final decision signals a relatively higher switching cost compared to our draft decision as we explain above. This may result in slower entry by competitive entrants than our draft decision. However, we consider it appropriate that our final decision signals a lower avoidable annual cost for two reasons.

Firstly, the avoidable cost signalled under our final decision is closer to the actual avoidable cost faced by the distributor. Actual avoidable costs are variable costs the distributor no longer incurs when a customer switches. Non-capital costs (for example, meter reading) are largely variable costs. Under our existing regulatory framework, distributors are entitled to recover capital costs incurred in providing regulated metering services. Thus, the recovery of capital costs cannot be avoided even if a customer switches.

Our draft decision therefore signalled a higher than actual avoidable cost to the switching customer, which arguably might promote greater switching than what is efficient. Under the draft decision, the avoidable cost signalled to the switching customer was equal to the entire annual charge (based on both the variable non-capital and fixed capital components). Under the final decision, the avoidable cost is only the variable non-capital component of the annual charge, closer to the true avoidable cost.

Secondly, the impact on competition is not the only regulatory objective. We are required to balance a number of considerations under the NER, including the need for efficient price signals and thus minimising cross subsidies. When making our draft decision, we accepted this cross subsidy (which resulted in the relatively higher avoidable annual costs). This was preferable to the alternative of accepting a large exit fee because of the negative impact on competition. However, we consider that our final decision better balances the various objectives than both our draft decision and the initial proposal from network businesses to charge a high upfront exit fee. Our final

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[121] Capital expenditure related to replacement meters is added to the MAB and recovered from all metering customers through the annual charge, rather than charged upfront. We consider this is appropriate because replacement is not initiated or controlled by the customer. A meter has to be replaced if it suddenly fails or may have to be proactively replaced because the distributor must comply with AEMO's metrology procedures.

[122] AEMC, *Expanding competition in metering and related services, Draft Rule Determination*, 26 March 2015, p. 79.

decision removes the main barrier to competition (a high upfront exit fee) while being administratively simpler and minimising cross subsidies and therefore leading to a more efficient outcome.

Annual metering service charges

- Our final decision is to not accept Ausgrid's total proposed building block requirement for annual metering services. We maintain our draft decision accepting a building block approach to setting charges. We also accept the proposed:
- opening MAB (since it complies with our draft decision adjustments)
- approach to depreciation
- forecast capex.

However, we do not accept Ausgrid's forecast opex for annual metering services. This has led us to revise the proposed annual metering service charges.

Our substitute price caps are set out in appendix A.

Opening metering asset base

Our final decision is to accept Ausgrid's revised opening MAB as at 1 July 2014 of $267.2 million ($ nominal). This follows on from engagement between the AER and Ausgrid.

At the draft decision stage we adjusted Ausgrid's initially proposed opening MAB. These adjustments related to amendments we made to Ausgrid's roll forward model for standard control services in our draft decision, which had a consequential impact on the MAB for type 5 and 6 meters.

Since our draft decision we have engaged with Ausgrid. Through this engagement Ausgrid has agreed to adopt the adjustments made in our draft decision. This resulted in it proposing a revised opening MAB equal to the amount in our draft decision. That is, $267.2 million ($ nominal). Our final decision thereby accepts Ausgrid's revised opening MAB; it includes adjustments we consider should be made following its separation for the asset base for standard control services.

Depreciation

Consistent with our final decision for standard control services, we specify that forecast, as opposed to actual, depreciation will apply to Ausgrid's MAB. We also accept the proposed remaining lives of each MAB asset category. This includes the proposal for shorter remaining lives for buildings and equity raising costs.

With respect to asset lives, our draft and final decisions differ. In our draft decision we did not accept Ausgrid's proposed 15 year remaining lives for buildings and equity raising costs. Since then however, Ausgrid has provided further information supporting the shortening of the remaining lives of these asset categories.

In sum, Ausgrid considers it preferable for the lives of its MAB assets to be set at a similar length. For buildings and equity raising costs this means shortening their asset

lives from 30 or 40 years, to 15 years. Ausgrid considers this preferable because the 'current assets in the [MAB] will not be recovered beyond the current metering asset fleet'.[123]

We agree with Ausgrid that there are advantages to its proposal for consistent asset lives. This is because it will avoid customers having to pay for some assets in the years following the point at which Ausgrid's fleet of type 5 and 6 meters have been fully depreciated. We thereby accept Ausgrid's proposal for the implementation of 15 year asset lives for buildings and equity raising costs.

Forecast capex

Our final decision sets an amount of $117.8 million in capex for annual metering services ($2014–15). Table 16.17 sets out Ausgrid's proposed and approved capex, for each cost category.

Table 16.17 – Proposed and substitute capex for metering annual services ($ million 2014–15)

	Revised proposal	Adjustment (unit costs)	Adjustment (volume forecast)	Final decision
New or upgraded connections (2014-15 only)	5.0	0.0	0.0	5.0
Replacements	80.3	0.0	0.0	80.3
IT and other capex	32.4	0.0	0.0	32.4
Total	117.8	0.0	0.0	117.8

Source: Ausgrid, *Revised regulatory proposal, Attachment 9.4, Revisions to the Type 5 and Type 6 metering services proposal*, January 2015. Converted to $2014-15.

Unit costs

- We accept Ausgrid's proposed unit costs. Our draft decision accepted Ausgrid's proposed forecasts for non–material unit costs (i.e. labour) and therefore we have not revisited this aspect of its proposal. Our consultant, Marsden Jacob, found that Ausgrid's forecast hardware prices are within the observed market ranges, and hence they have been accepted.
- At the draft decision stage, we engaged Marsden Jacob to assist us in assessing Ausgrid's forecast material unit costs. This involved the consultant considering the 'maximum rate that should be applied for each meter hardware category based on consideration of the rates applied across the business and a comparison against current market rates'.[124] These rates were sourced from online advertised prices

[123] Ausgrid, *Revised regulatory proposal, Attachment 8.04, Revisions to the Type 5 and Type 6 metering services proposal*, January 2015, p. 4.

[124] Marsden Jacob Associates, *Consultant report to the AER on Alternative Control Services*, October 2014, section 2.1.1.

and through direct engagement with major suppliers.[125] Marsden Jacob took into consideration volume discounts which would reasonably be expected to apply to metering hardware purchases made by Ausgrid.[126]

Marsden Jacob found that the majority of Ausgrid's material unit costs were within the range of current market rates for metering hardware.[127] The only unit cost which falls outside of that range is a type 6 single phase accumulation meter. But this is by only $0.06 ($2014–15), which is highly immaterial. Table 16.18 sets Ausgrid's proposed material unit costs and our final decision on each.

Table 16.18 – Ausgrid's forecast material unit costs, Marsden Jacob's observed market rates, and our substitute forecast ($2014–15)

Description	Forecast	Markets rates	Final decision
Type 6 meters			
Single phase, direct connected, accumulation meter	23.06	18.69 – 23.00	Accept
Three phase, direct connected, accumulation meter	96.09	86.50 – 100.00	Accept
Type 5 meters			
Single phase, dual connected interval meter	88.06	63.72 – 100.00	Accept
Single phase, dual element, direct connected interval meter	147.26	126.00 – 150.00	Accept
Three phase, direct connected interval meter	202.00	189.27 – 220.00	Accept
Three phase, current transformer connected interval meter	519.00	Insufficient information	Accept

Source: Marsden Jacob Associates, Consultant report to the AER on Alternative Control Services, October 2014, section 2.1.1.

Our final decision to accept Ausgrid's capex in full differs to our draft determination. At the draft determination stage, we considered the bottom end of the observed market ranges to be the benchmark for Ausgrid.[128] We reached this conclusion on the basis

[125] Marsden Jacob Associates, *Consultant report to the AER on Alternative Control Services*, October 2014, section 2.1.1.

[126] Marsden Jacob Associates, *Consultant report to the AER on Alternative Control Services*, October 2014, section 2.1.1.

[127] Marsden Jacob Associates, *Consultant report to the AER on Alternative Control Services*, October 2014, section 2.1.1.

[128] AER, *Draft decision on Ausgrid's regulatory proposal: 2014–15 and 2015–19*, November 2014, p. 16–38.

that Ausgrid is likely to benefit from volume discounts when it transfers, along with Essential Energy and Endeavour Energy, its procurement processes to Networks NSW.[129]

In Ausgrid's revised regulatory proposal, the distribution business noted that price is only one determining factor in its procurement processes.[130] Other factors include the likelihood of lower ongoing operating costs if higher quality meters are acquired. We accept that this is likely to be the case. Moreover, since our consultant observed that Ausgrid's unit costs are within the market range,[131] our final decision is not to make any adjustments to the proposed revised capex, but to accept it in full.

Forecast volumes

We maintain our draft decision accepting Ausgrid's forecast volumes of new or upgraded connections, reactive replacements, and proactive replacements. Our reasoning is set out in our draft decision.[132] In summary, we approve the forecast volume of new connections and reactive replacements because the amounts proposed reflect historical trends. With regard to the forecast proactive replacement volumes, the proposed amount (255 487) is supported by sample testing data. It shows that certain makes and models of Ausgrid's meters have failed accuracy standards and need to be replaced. Table 16.19 shows the volumes we approve.

Table 16.19 – Approved volumes of meters for new/upgraded connections, reactive replacements, and proactive replacements (per meter)

	Volume
New and upgraded connections (2014–15 only)	49 181
Reactive replacements	65 547
Proactive replacements	255 487

Forecast opex

We have set an amount of $111.0 million in opex for annual metering services and substitute that amount for Ausgrid's proposed $142.7 million ($2014–15). This is more than three-quarters of Ausgrid's total proposed opex.

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129 Ausgrid, *Regulatory proposal, Attachment 8.21, Energeia's review of Ausgrid's metering tariffs*, May 2014, p. 57.

130 Ausgrid, *Revised regulatory proposal: Attachment 8.04*, January 2015, p. 9.

131 Marsden Jacob Associates, Consultant report to the AER on Alternative Control Services, October 2014, section 2.1.1.

132 AER, *Draft decision on Ausgrid's regulatory proposal: 2014–15 and 2015–19*, November 2014, p. 16–39.

Base expenditure

To assess this, we observed Ausgrid's opex over a five year period (2008–09 to 2012–13). This is the same approach we applied in the draft decision but different to how Ausgrid developed its base; which involved using a single year of opex (2012–13).

In its revised regulatory proposal, Ausgrid stated that its single year approach to developing its base would better reflect its future costs compared to our multi–year approach.[133] It reasoned that the five years we selected captures costs in a period when Ausgrid's type 5 population of meters was disproportionately increasing compared to its type 6 installations. By contrast, Ausgrid stated that the growth in type 5 meters settled in the single year it selected as its base (2012–13). And hence, according to Ausgrid, its single year approach provides the 'best representation of current volumes and efficiencies'.[134]

We nonetheless consider our multi–year approach to be more robust than Ausgrid's single year method. By taking multiple years of costs into account, we avoid any incentive on Ausgrid, going forward, to load a single year with expenditure. This is important given that we do not apply an efficiency benefit sharing scheme with respect to alternative control metering services.

We also do not agree with Ausgrid's claim that type 5 meters are more expensive to operate than type 6 installations. There is no material difference in the cost of operating type 5 and 6 meters as both have to be manually read. This involves visiting an installation, reading from a numeric display, and recording the information on a handheld device. This process takes only a few minutes at each site and is not materially different between type 5 and 6 meters.

Since the majority of the expenditure associated with operating meters relates to the cost of reading them, we do not consider Ausgrid's claim that its growth of type 5 meters justifies the use of its single year approach to the base. Capturing multiple years of costs, inclusive of a time when Ausgrid's type 5 meter population was increasing, should not have a material effect on our analysis.

For type 5 meters, we accept that more stringent data validation obligations may exist under AEMO metrology procedure requirements. However, we consider that the data validation can be met through putting the appropriate computer systems in place. The requirements, therefore, should not have a recurrent effect on Ausgrid's base opex for type 5 and 6 metering services. And while more type 5 meters may require investment in computer systems, our final decision should allow Ausgrid to recover its efficient costs. This is considering that in accepting Ausgrid's metering capex in full we have

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[133] Ausgrid, *Revised regulatory proposal and preliminary submission: Attachment 8.04*, 20 January 2015, p. 5.

[134] Ausgrid, *Revised regulatory proposal and preliminary submission: Attachment 8.04*, 20 January 2015, p. 5.

approved approximately $15.5 million (2014–15) in information technology capex for the provision of Type 5 and 6 metering services.[135]

We therefore conclude that the high growth in type 5 installations in the period between 2008–09 and 2012–13 does not affect our multi–year approach to assessing Ausgrid's efficient base.

Consistent with our approach for standard control services, we further examined the proposed base from another perspective by applying benchmarking.

For the final decision, we applied base adjustments to all distributors' historic metering opex data to remove ancillary metering costs before performing our benchmarking analysis. Thus, our benchmarking analysis for the final decision more accurately compares default metering opex only.

Our calculation of Ausgrid's annual base adjustment came to $4.1m ($ 2014-15).[136] This is less than Ausgrid's proposed base year adjustment of $11.9m ($ nominal).[137] Nevertheless, consistent with our own calculations, we have used our lower base adjustment (that is, we removed less costs from their base opex than if we had accepted Ausgrid's base adjustment calculation) to reflect Ausgrid's historic opex for default type 5 and 6 metering services.

We used a partial performance indicator as our benchmarking method which compared Ausgrid's proposed opex per customer against other non-Victorian distribution businesses in the national electricity market.

When comparing Ausgrid's proposed opex to its peers, we normalised our results by accounting for customer density. We calculated this as the number of customers a distribution business has per kilometre of line length. We took customer density into account because, all things equal, businesses with a low customer density are likely to require higher opex. For example, this could be because of longer travel times to service customers.

Figure 16.6 shows the results of our benchmarking.

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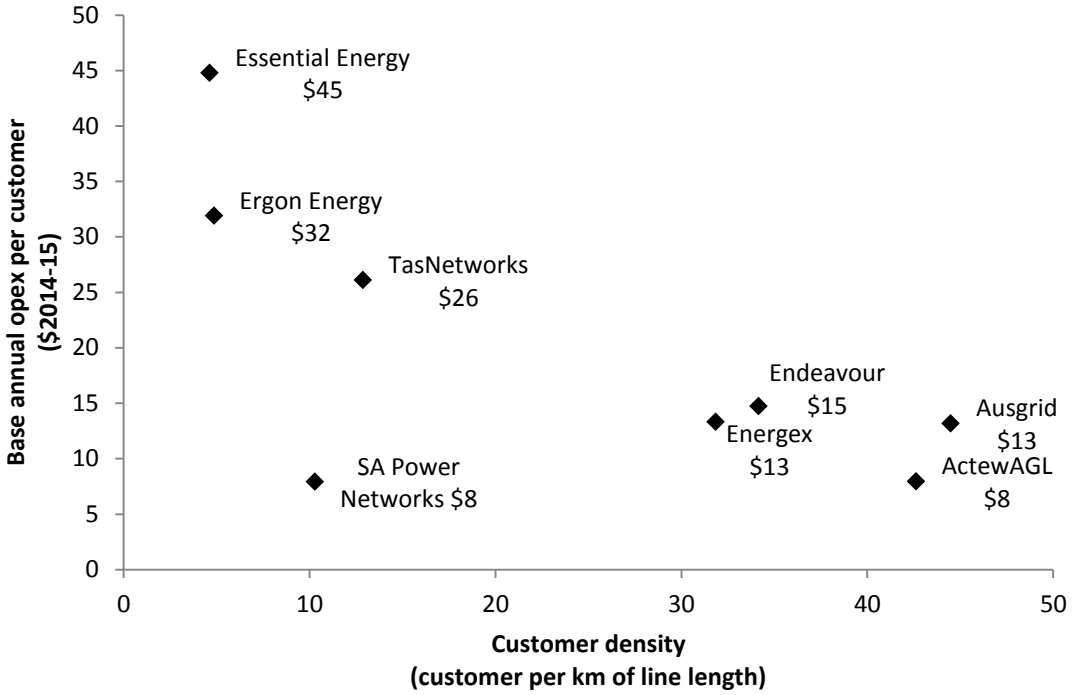
[135] Ausgrid, *Revised Regulatory Proposal 2015–19, Attachment 8.04*, January 2015, p. 11 (table 6); Ausgrid*, Initial Regulatory Proposal 2015–19, Attachment 8.15*, January 2015, p. 15.

[136] We based our calculation on historic metering related fee-based service data provided in Ausgrid's reset RIN.

[137] Ausgrid, *Revised Regulatory Proposal 2015–19, Attachment 8.05 Revised forecast opex for type 5 and 6 metering*, January 2015, 'opex model links' tab

Figure 16.6 – Benchmarking of annual default metering opex per customer ($ 2014–15)



Source: AER analysis.

Ausgrid stated 'the AER has assumed a linear relationship between customer density and costs, which is not necessarily correct'.[138] However, our benchmarking analysis does not rely on there being a perfect linear relationship. What we do observe is a strong correlation between customer density and costs, and so we can reasonably expect Ausgrid to require no more opex per customer than a distribution business with a similarly dense network. Ausgrid and ActewAGL are the closest in customer density. However, our draft decision conservatively compared Ausgrid to Energex which has a far less dense network.

Specifically, Ausgrid stated that it has a high proportion of type 5 meters whereas Energex only has type 6 meters in service. Ausgrid submitted that this makes Energex an unreasonable comparator. This is because type 5 meters are more expensive to operate and maintain given that:

- they take longer to read, and
- have more stringent data validation obligations.[139]

[138] Ausgrid, *Revised Regulatory Proposal*, January 2015, p. 205.

[139] Ausgrid, *Revised regulatory proposal and preliminary submission: Attachment 8.04*, 20 January 2015, p. 8.

We nonetheless consider the operating costs associated with type 5 and 6 meters are about the same because they both require being manually read (and meter reading costs are a key component of metering opex). Further the more stringent data validation requirements can be met through putting the appropriate computer systems in place. The requirements, therefore, should not have a recurrent effect on Ausgrid's base opex for type 5 and 6 metering services. We more fully explain our reasons about why we consider opex for type 5 and 6 meters to be similar in the earlier discussion regarding single or mutli-year base.

For our draft decision, Ausgrid's base expenditure was higher than Energex's and so we made a base efficiency adjustment. However, our benchmarking analysis for the draft decision used data that included ancillary metering costs.

For our final decision, we adjusted base metering opex data to remove ancillary metering costs before performing the benchmarking analysis. This is because in the 2015–19 regulatory control period, ancillary metering services will be charged to the customer who requests the service rather than recovered through annual metering charges.

Once ancillary metering service costs were removed from the base, Ausgrid compares well to Energex as both distributors spent $13 per customer per annum for default metering opex. Thus, we did not make a relative efficiency adjustment to Ausgrid's base metering opex.

Step changes

Ausgrid did not propose any step changes.

In our draft decision, we stated that Ausgrid should apply a negative step change to account for ancillary metering services becoming charged upfront to the customer who requests the service through an ancillary network service fee[140] and should therefore not form part of our default type 5 and 6 metering opex assessment.

Ausgrid confirmed in its revised proposal that they had removed ancillary network service costs from its historic metering opex and that no further step change was required.[141]

We agree with Ausgrid that ancillary metering costs should be removed from the base (historic expenditure) rather than applied as a step change. We applied base adjustments to all distributors' historic metering opex data to remove ancillary metering costs to refine our benchmarking analysis so it more accurately compares only default metering historic opex.

Therefore, for our final decision, we did not apply a negative step change for ancillary metering services as we accounted for this through making a base adjustment instead.

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[140] AER, *Draft decision on Ausgrid's regulatory proposal: 2014–15 and 2015–19*, November 2014, p. 16–43.

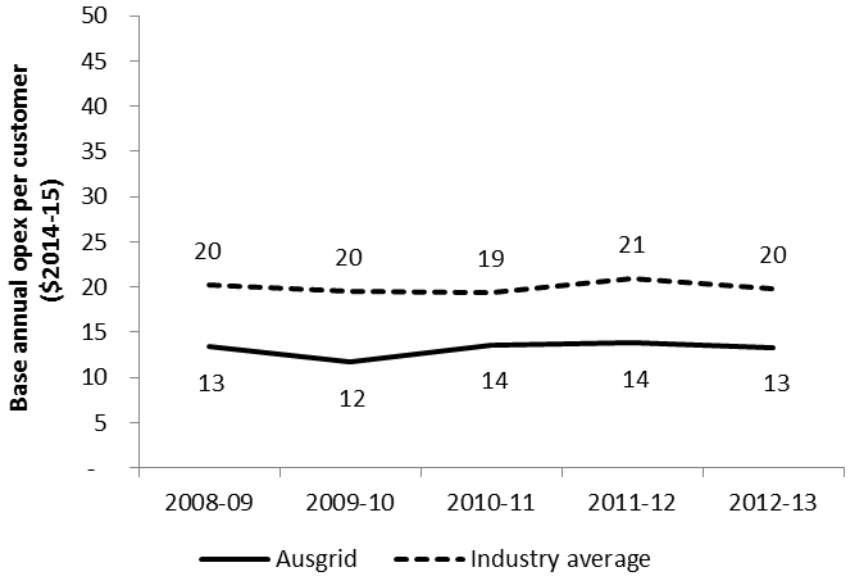
[141] Ausgrid, *Revised Regulatory Proposal 2015–19, Attachment 8.04*, January 2015, p. 204.

Trend

We trended the base forward for forecast metering customer growth. Consistent with our draft decision, we have applied zero forecast real price and productivity growth.

Our analysis for base metering opex used average data from 2008–09 to 2012–13. We looked at the annual data as well. Figure 16.7 shows that over 2008–09 to 2012–13, Ausgrid's metering opex per customer did not increase. This is consistent with the industry average. This implies that either there were no real price increases over this period, or the distributors were able to offset these real price increases with productivity improvements.

Figure 16.7 – Base annual opex per customer



Given that opex is largely recurrent and metering opex per customer did not increase over the 2008–09 to 2012–13 period, we do not forecast metering opex per customer to increase in the 2015–19 regulatory control period. Therefore, we apply zero real price and productivity growth.

Our alternative forecast accepts 78 percent of what Ausgrid proposed. Our alternative forecast is based on Ausgrid maintaining metering opex per customer levels. We consider this to be reasonable, since in providing metering services Ausgrid should, at the very least, be as efficient as it has been in the past. For that reason, we consider our substitute opex forecast to better reflect Ausgrid's likely future requirements.

Upfront capital charge

We accept that all meter provision initiated by the customer (for new connections and upgrades) be recovered upfront from customers. We also accept the value of the upfront charge Ausgrid proposed. Appendix A contains our approved prices for upfront capital charge for new and upgraded connections.

Ausgrid did not include a forecast volume of new and upgraded connections for the 2015–19 regulatory control period because the charge will be recovered as a capital contribution from 1 July 2015. We consider this to be appropriate. We have therefore based our assessment of Ausgrid's proposed price caps on 'unit costs' only.

Our reasons for accepting Ausgrid's proposed material unit costs are the same as those set out in our assessment of Ausgrid's capex building block for the annual metering service charge. Namely our consultant, Marsden Jacob, recommended that we approve Ausgrid's proposed material unit costs because they each fit within the observed market range.

We considered whether the upfront capital charges should be annually adjusted for labour price changes. Our final decision is that no such adjustment should take place. The approved upfront capital charge is mostly made up of material costs, with only a small labour component. We therefore do not consider an annual adjustment for changes in labour prices to be reasonably required.

Meter transfer fee

We do not approve a meter transfer fee for Ausgrid. We find that there are no additional tasks or functions these distributors will have to assume when customers change meter provider. Thus there are no incremental costs.

In assessing all distributors' revised proposed meter transfer fees our main focus is on the types of activities that are undertaken by retailers, distributors and metering providers in the National Electricity Market when a customer churns from a distributor owned meter. We also looked at the methodologies distributors adopted to establish the fee. Furthermore, because there is an alternative provider to that of the distributor, those providers' approach to dealing with customer meter churn and any associated costs should provide a direct comparator for that of the monopoly business.[142]

Our New South Wales and Australian Capital Territory draft decisions sought further information from distributors and the market about the veracity of meter transfer fees.

Retailers submitted that any activities undertaken by the distributors was no different from existing data entry/system management functions undertaken as part of normal business practice and that any incremental costs associated with 'administration' would be absorbed by the entity acquiring the metering customer.[143]

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[142] Retailers in the National Electricity Market can and do provider metering services to the contestable elements of the market, namely the medium and large businesses. Distributors at this stage maintain a monopoly provision to household customers but this will change with advent of the AEMC competition in metering rule change.

[143] Vector Limited, submission on the AER's draft decision on New South Wales and ACT Electricity Distributors' Regulatory Proposals for 2015–16 to 2019–20, pp. 5, 6-8, 13 February 2015, p.p. 6-7; AGL, Alternative approach to the recovery of the residual metering capital costs through an alternative control service annual charge, 27 March 2015, p.2; AGL, email to AER staff, AGL Presentation to AER staff—metering regulation & transition to competition, 13 March 2015.

Oakley Greenwood, in its report to Origin Energy corroborated stakeholders view's by contending that changing information in the distributors systems, is likely limited to a change in information about the entity that is responsible for the meter; the identity of the metering coordinator; and sufficient information about meter type to enable its verification for tariff assignment, was probably all that was required.[144]

We tested this with retailers, many of whom are already providing metering services to large customers, which is a contestable market. Simply Energy did not agree with the imposition of administration fees; nor did Origin Energy. The latter was concerned that all three NSW distributors used vastly different inputs and therefore required testing against efficient benchmarks before a reasonable costs could be determined.[145] The retailer considered that a consistent approach to the calculation of administrative costs was most appropriate.[146]

Simply Energy observed their current role in churning meters (type 4) in the competitively provided commercial market involved administrative transaction costs that were immaterial to it. They also advised that distributors were not currently charging them a meter transfer fee where the customer switched from the distributor to the retailer as metering provider.[147]

Commenting on the New South Wales distributors proposals, Simply Energy stated that there appeared no assumption of batch processing. Instead, the proposed charges assumed each meter was being processed individually. Simply Energy noted that if put in the position of the distributors, it would review processes in detail to determine the optimum batch size, which would be at least 20 meters (i.e. customers) per batch.[148] In such circumstances, multiplying Endeavour Energy's proposed five minutes per meter by 20 minutes equates to 100 minutes per batch for each manual process. Simply Energy proposed that 10 minutes was a more credible time.[149] This was also appropriate for other distributors.

Furthermore, Simply Energy advised that the reasonable activities it would have to incur to process a batch of 20 meters and the time taken for each were:

- Meter provider database update—10 minutes
- Banner system meter update—25 minutes
- Metering business system update—25 minutes

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144 Oakley Greenwood, Review of NSW DBs Regulatory Submission, 8 August 2014, p. 7 in Origin Energy, Submission to NSW Electricity distributors' regulatory proposals, 8 August 2014, (attachment 2).

145 Origin Energy, Ausgrid, Endeavour, Essential initial 2015–19 initial regulatory proposals, Origin submission, August 2014, (attachment 1)p. 36.

146 Origin Energy, Ausgrid, Endeavour, Essential initial 2015–19 initial regulatory proposals, Origin submission, August 2014, (attachment 2), p. 7.

147 Meeting between respective staff of Simply Energy and AER on 16 March 2015.

148 Simply Energy, metering question and churning, email to AER staff, 23 March 2015.

149 Simply Energy, metering question and churning, email to AER staff, 23 March 2015.

- Banner system final read update—10 minutes.[150]

This amounts to 70 minutes for a batch of 20 meters; or a total time per meter of 3.5 minutes. This is substantially less than the times proposed by any of the distributors. Given this, Simply Energy submitted that the imposition of a meter transfer fee in the residential metering market of the magnitude distributors had proposed was not justified. Rather, Simply Energy argued that the administrative costs are negligible.

Retailers as the acquirers of a new meter customer bear the costs of acquisition and must provide all relevant information to the entity that has lost the customer, in this case the distributor. This includes attending the site, removing the meter and sending it to the distributor's depot or alternative location. The retailer has an incentive to keep those costs down and to work with the business that has lost the customer—be they distributors or other retail rivals once a competitive market is established—to ensure smooth market operation. This has been the case since inception of the national electricity market for large customers. We do not find that the costs proposed by the distributors are reflective of this cost minimisation incentive.

This is confirmed by the Australian Energy Market Operator who has a new set of meter churn procedures due to commence September 2015.[151] This new procedure simplifies the meter churn procedure and places the onus on the Financial Responsible Market Participant (as the incoming Responsible Person) and their Metering Provider to update Market Settlement and Transfer Solutions and administer the transfer. The distributor's role is minimised, especially for the displacement of Type 6 legacy meters. Type 5 meters will require a final read. It could be expected that competing meter providers will be sufficiently encouraged to work with distributors to provide them with the necessary final read data. This is because to do otherwise will reduce their profit margins and potentially put them at risk of failing to meet their obligations to provide relevant data to ensure market settlement in a timely manner.[152] It is reasonable to assume that the new meter churn procedures will carry forward into the residential metering market, the competitive metering element of which is now in its infancy.

Vector agreed with the views expressed in our draft decision that Ausgrid's forecast of additional transfer costs of $59.8 million if all customers churned in 2015–19, requiring 65 extra staff, was not realistic given the relatively simple administrative task involved to process a transferred customer.

As a metering provider with experience in competitive metering markets, Vector commented on Endeavour Energy's cost assumptions in its revised revenue proposal.

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150 Simply Energy, metering question and churning, email to AER staff, 23 March 2015.

151 See http://www.aemo.com.au/Consultations/National-Electricity-Market/Second-Stage-Notice-of-Consultation--Meter-Churn-Package, accessed 26 March 2015 and http://www.aemo.com.au/Consultations/National-Electricity-Market/~/media/Files/Other/consultations/gas/Churn%20Package%202014/Meter%20Churn%20Procedure%20FRMP%20v10%20clean.ashx accessed 26 March 2015.

152 We are aware of instances where some distributors are alleged to have deliberately stalled or frustrated attempts by large commercial users to switch meter provider. However, this is a separate issue of specific business conduct, rather than of efficient billing systems per se.

These are reproduced in Table 16.20 where both organisations responses can be compared.

Table 16.20 Endeavour Energy meter transfer fee build up and Vector response

Endeavour Energy Task	Endeavour Energy Time	Vector Comment
Administration Officer updates the meter removal in the Meter Provider Database.	5 min	Valid distributor activity that is currently carried out regularly now. Could not be delivered by Metering Service Provider but could be automated via distributor integration to market systems
Network Billing Data Analyst updates the meter removal and the new metering details (for the non-Endeavour Energy asset) in the Banner billing system.	5 min	Valid distributor activity that is currently carried out regularly. Could not be delivered by Metering Service Provider but could be automated by distributor via integration to market systems
Network Billing Data Analyst updates the new metering details in the Metering Business System (MBS), which will allow network billing activities to occur.	5 min	Valid distributor activity that is currently carried out regularly. Could not be delivered by Metering Service Provider but could be automated by distributor via integration to market systems
Metering Officer obtains the final read for the meter and inputs the details of the final read into Banner billing system.	5 min	Valid distributor activity that is currently carried out regularly
The ASP returns the Endeavour Energy removed asset back to the designated Endeavour Energy depot. Endeavour Energy process dictates that the meter is double bagged and goose necked to ensure safe transportation of asbestos contaminated materials. The consumables required to meet these requirements are supplied by Endeavour Energy.		Metering Service Provider could carry out on behalf of the distributor if permitted by latter. Metering Service Providers anticipate funding this activity themselves.
Cost of meter disposal.		Metering Service Provider could carry out on behalf of the distributor if permitted by latter. Metering Service Providers anticipate funding this activity themselves.

Source: Endeavour Energy; Vector Limited.

Vector advised that their response to the activities listed in Table 16.20 was that the tasks were not unique to distributors. Alternative meter service providers can now, and will in the future, undertake many of these tasks. Furthermore, they noted that Endeavour Energy could integrate these activities and tasks with electronic transactions that they presently receive from AEMO.[153] Vector says this is how it operates in the market today and did not see why distributors should not do the same. Given that distributors were performing these functions now as standard business

[153] Vector Limited, Urgent - meter churn procedures, email to AER staff, 20 April 2015.

practice, Vector could not anticipate what incremental costs would arise as a result of competitive metering.[154]

We do not agree with the distributors' position that that an increase in staff will be required within the regulatory periods commencing 1 July 2015. We also find that it will be the meter service provider, as the financially responsible market participant, who will bear the additional costs associated with meter churn, not the distributors.

We find that customers would not be paying an efficient level of costs for meter churn if the distributors proposed transfer fees were approved. A meter transfer fee of the order proposed ($36) could amount to a de-facto exit fee that would act as a barrier to competition and the uptake of new advanced meters. While the national electricity law requires us to ensure distributors have the opportunity to recover at least their efficient costs we are not persuaded by the evidence that distributors have material incremental costs to recover in amending records to take account of customer churn. Any incremental costs will be borne by the acquirer of the new meter customer—at the moment, retailers. Furthermore it is noteworthy that distributors are churning type 6 meters for interval meters for customers installing Solar Photovoltaic systems in large numbers without imposing any administrative fees for the meter transfer.

Further support to our findings that the proposed transfer fees are disproportionate to the activities to be undertaken is in comparing the per customer meter opex fee which we have approved in this decision. Our final decision will see Ausgrid recover $13 annually for metering opex per customer for meter data services, truck rolls, reading and processing, a share of information technology costs and including overheads. It does not follow that a proposed transfer fee equal or greater than this is reasonable.[155]

We do not approve a meter transfer fee for the regulatory control period commencing 1 July 2015.

Control mechanism

We accept Ausgrid's approach to apply a consistent CPI calculation used for standard control services for the metering control mechanism.

However, we do not accept that X-factors should be allowed to recover real price escalators for internal labour, labour hire, contracted services and materials as Ausgrid proposed for annual metering charges or upfront capital charges.[156]

We do not accept allowing for real price escalators as part of the X-factor for annual metering charges in principle. This is because we considered whether real price growth adjustments were necessary as part of our building block revenue assessment of the

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[154] Vector Limited, Urgent - meter churn procedures, email to AER staff, 20 April 2015

[155] This logic also applies if we take Ausgrid's proposed average annual metering opex per customer $17.

[156] Ausgrid, *Revised regulatory proposal, Attachment 8.04: Revisions to the Type 5 and Type 6 metering services proposal*, January 2015, p. 18.

annual metering charges. Accounting for real price escalators in both our building block revenue assessment and the price cap would lead to double counting.

For upfront capital charges, we accept in principle that X-factors incorporate real price escalators, if forecast real price growth can be substantiated. We set the X-factor at zero because the cost build-up of the upfront capital charges is mostly materials, and we forecast materials growth to be no more than CPI so no real materials escalator is required.

A Appendix

A.1 Public Lighting

A.1.1 Public Lighting Prices 2015-16

Opex			Post 2009 Annuity Charge		
Type	Revised Proposal	Final decision	Type	Revised Proposal	Final decision
Connection - O/U (P09)	$92.80	$92.8	0.5 Bracket	$10.85	$8.15
Connection - O/U	$92.81	$92.81	0.6 Bracket	$10.58	$7.95
Connection - UGR1	$85.07	$85.07	1 Bracket	$9.95	$7.48
Connection - UGR1 (P09)	$85.07	$85.07	1.2 Bracket	$10.85	$8.15
Connection - UGR2	$30.93	$30.93	1.5 Bracket	$28.17	$21.16
Connection - UGR2 (P09)	$30.93	$30.93	2 Bracket	$15.34	$11.52
Lamp - EMPTY	$24.84	$24.84	2.5 Bracket	$16.47	$12.37
Lamp - INC1x100	$42.89	$42.94	3 Bracket	$24.01	$18.03
Lamp - INC1x1000	$97.17	$97.25	3.5 Bracket	$23.83	$17.90
Lamp - INC1x1440	$36.55	$36.60	4 Bracket	$29.30	$22.01
Lamp - INC1x150	$41.98	$42.03	4.5 Bracket	$25.53	$19.18
Lamp - INC1x150 (P09)	$41.98	$42.03	5 Bracket	$33.52	$25.17
Lamp - INC1x200	$41.98	$42.03	6 Bracket	$33.70	$25.31
Lamp - INC1x300	$52.84	$52.89	6.5 Bracket	$47.88	$35.95
Lamp - INC1x40	$42.89	$42.94	7 Bracket	$47.88	$35.95
Lamp - INC1x500	$52.84	$52.89	8 Bracket	$47.88	$35.95
Lamp - INC1x60	$42.89	$42.94	1x40W TF	$25.51	$20.93
Lamp - INC1x75	$42.89	$42.94	1x80W TF	$23.45	$19.24
Lamp - INC3x100	$52.10	$52.15	1000W MBF	$123.30	$101.11
Lamp - LED1x237	$26.03	$26.04	1000W SON	$123.30	$101.11
Lamp - LED1x29	$24.64	$24.65	1000W SON FLOODLIGHT	$101.09	$82.91
Lamp - MBF1x1000	$106.24	$106.35	1000W/1500W MBI	$136.52	$111.95

Opex				Post 2009 Annuity Charge		
				FLOODLIG		
Lamp - MBF1x1000 (P09)	$106.24	$106.35		100W MBI	$47.03	$38.58
Lamp - MBF1x125	$59.85	$40.72		100W MBI FLOODLIG HT	$50.85	$41.71
Lamp - MBF1x125 (P09)	$59.85	$40.72		100W SON	$50.01	$41.02
Lamp - MBF1x160	$37.50	$37.53		100W SON - PARKVILLE	$134.21	$110.05
Lamp - MBF1x250	$67.47	$45.09		100W SON FLOODLIG HT	$72.96	$59.84
Lamp - MBF1x250 (P09)	$67.47	$45.09		100W SON -PLAIN	$50.01	$41.02
Lamp - MBF1x400	$69.79	$45.09		125W MBF	$37.01	$30.37
Lamp - MBF1x400 (P09)	$69.79	$45.09		125W MBF - BOURKE HILL	$99.01	$81.20
Lamp - MBF1x42	$63.97	$37.39		125W MBF - HYDE PARK	$76.55	$62.78
Lamp - MBF1x42 (P09)	$63.97	$37.39		125W MBF - NOSTALGI A	$100.91	$82.75
Lamp - MBF1x50	$71.82	$40.72		125W MBF - PARKVILLE	$122.75	$100.66
Lamp - MBF1x50 (P09)	$71.82	$40.72		125W MBF BOLLARD	$68.14	$55.89
Lamp - MBF1x500	$88.10	$88.16		125W MBF -PLAIN	$37.01	$30.37
Lamp - MBF1x700	$88.10	$88.16		125W/250W MBF FLOODLIG HT	$48.30	$39.62
Lamp - MBF1x80	$47.96	$39.50		135W SOX	$53.40	$43.80
Lamp - MBF1x80 (P09)	$47.96	$39.50		150W SON	$50.45	$41.38
Lamp - MBF1x800	$88.10	$88.16		150W SON - HYDE PARK	$76.55	$62.78
Lamp - MBF2x125	$116.42	$59.58		150W SON -	$134.21	$110.05

Opex			Post 2009 Annuity Charge		
			PARKVILLE		
Lamp - MBF2x125 (P09)	$116.42	$59.58	150W SON - PARKWAY 1	$59.95	$49.17
Lamp - MBF2x160	$46.30	$46.36	150W SON FLOODLIGHT	$58.86	$48.28
Lamp - MBF2x175	$46.30	$46.36	150W SON GEC 'BOSTON 3'	$122.75	$100.66
Lamp - MBF2x400	$106.40	$59.58	150W/250W MBI FLOODLIGHT	$89.75	$73.60
Lamp - MBF2x80	$69.55	$52.05	180W SOX	$59.18	$48.55
Lamp - MBF3x160	$50.91	$77.40	2x14W TF - T5 PIERLITE M	$37.98	$31.16
Lamp - MBF3x250	$141.27	$77.40	2x175W MBF - PARKWAY 2	$149.03	$122.20
Lamp - MBF3x400	$146.65	$77.40	2x20W TF	$25.43	$20.86
Lamp - MBF3x80	$89.73	$65.65	2x20W TF - WAVERLEY	$25.43	$20.86
Lamp - MBF4x1000	$336.67	$280.83	2x250W SON FLOODLIGHT	$82.34	$67.53
Lamp - MBF4x80	$108.63	$79.25	2x26W TF MACQUARIE DEC.	$116.30	$95.37
Lamp - MBF6x125	$243.52	$130.88	2x400W MBF - PARKWAY 2	$149.03	$122.20
Lamp - MBF6x160	$64.72	$130.88	2x400W MBI FLOODLIGHT	$151.22	$124.01
Lamp - MBF9x160	$78.53	$184.35	2x400W SON FLOODLIGHT	$163.03	$133.69

Opex				Post 2009 Annuity Charge		
Lamp - MBI1x100	$52.92	$52.98		2x40W TF	$39.43	$32.34
Lamp - MBI1x100 (P09)	$52.92	$52.98		2x70W SON - BOURKE HILL	$158.26	$129.77
Lamp - MBI1x1000	$88.10	$88.16		2x80W MBF - BOURKE HILL	$79.08	$64.85
Lamp - MBI1x1000 (P09)	$88.10	$88.16		250W MBF	$49.57	$40.67
Lamp - MBI1x150	$88.10	$88.16		250W MBF - PARKVILLE	$125.87	$103.22
Lamp - MBI1x150 (P09)	$88.10	$88.16		250W MBF - PARKWAY 1	$59.95	$49.17
Lamp - MBI1x1500	$88.10	$88.16		250W MBI - SMARTPOLE	$24.45	$20.07
Lamp - MBI1x250	$52.01	$52.07		250W SON	$50.45	$41.38
Lamp - MBI1x250 (P09)	$52.01	$52.07		250W SON - PARKVILLE	$144.86	$118.79
Lamp - MBI1x3745	$36.55	$36.60		250W SON - PARKWAY 1	$59.95	$49.17
Lamp - MBI1x400	$52.01	$52.07		250W SON FLOODLIGHT	$58.86	$48.28
Lamp - MBI1x400 (P09)	$52.01	$52.07		250W SON GEC 'BOSTON 3'	$125.06	$102.55
Lamp - MBI1x500	$88.10	$88.16		2X14W TF - T5 PIERLIGHT	$37.98	$31.16
Lamp - MBI1x70	$48.72	$48.76		3x400W MBF - PARKWAY 3	$149.03	$122.20
Lamp - MBI1x70 (P09)	$48.72	$48.76		4x1000W MBF	$130.04	$106.64
Lamp - MBI1x70 II	$52.92	$52.98		4x20W TF	$62.49	$51.25
Lamp - MBI2x400	$65.82	$65.88		4x20W TF - WAVERLE	$62.49	$51.25

Opex			Post 2009 Annuity Charge		
			Y		
Lamp - MBI4x150	$226.20	$226.25	4x250W SON	$92.53	$75.88
Lamp - SON1x100	$86.61	$86.79	4x40W TF	$74.16	$60.82
Lamp - SON1x100 (P09)	$86.61	$86.79	4x40W TF - WAVERLEY	$68.88	$56.49
Lamp - SON1x1000	$92.64	$92.70	4x600W SON	$140.23	$114.99
Lamp - SON1x1000 (P09)	$92.64	$92.70	400W MBF	$39.93	$32.76
Lamp - SON1x120	$56.49	$56.56	400W MBF - PARKWAY 1	$82.34	$67.53
Lamp - SON1x150	$87.93	$72.55	400W MBF FLOODLIGHT	$90.44	$74.17
Lamp - SON1x150 (P09)	$87.93	$72.55	400W MBI - SMARTPOLE	$24.45	$20.07
Lamp - SON1x150 AR	$64.63	$64.73	400W MBI FLOODLIGHT	$68.45	$56.14
Lamp - SON1x220	$55.58	$55.65	400W SON	$54.71	$44.87
Lamp - SON1x250	$90.12	$76.13	400W SON - PARKWAY 1	$59.95	$49.17
Lamp - SON1x250 (P09)	$90.12	$76.13	400W SON FLOODLIGHT	$58.86	$48.28
Lamp - SON1x250 AR	$65.73	$65.82	40W SOX	$25.51	$20.93
Lamp - SON1x310	$55.58	$55.65	42W MBF SYLVANIA SUB ECO	$34.84	$28.58
Lamp - SON1x360	$55.58	$55.65	500W MBI FLOODLIGHT	$86.51	$70.95
Lamp - SON1x400	$96.06	$72.55	50W MBF	$26.10	$21.42
Lamp - SON1x400 (P09)	$96.06	$72.55	50W MBF - BOURKE HILL	$79.08	$64.85
Lamp - SON1x400 AR	$91.13	$91.24	50W MBF - NOSTALGI	$79.08	$64.85

Opex			Post 2009 Annuity Charge		
			A		
Lamp - SON1x50	$51.24	$51.28	50W MBF - PLAIN	$26.10	$21.42
Lamp - SON1x50 (P09)	$51.24	$51.28	50W MBF BOLLARD	$49.85	$40.88
Lamp - SON1x70	$66.98	$67.08	50W SON	$25.23	$20.70
Lamp - SON1x70 (P09)	$66.98	$67.08	50W SON - BOURKE HILL	$88.52	$72.59
Lamp - SON2x250	$148.62	$132.16	50W SON - NOSTALGI A	$39.76	$32.61
Lamp - SON2x250 (P09)	$148.62	$132.16	60W SOX	$25.51	$20.93
Lamp - SON2x400	$158.65	$121.17	700W MBF	$53.18	$43.62
Lamp - SON2x70	$105.92	$106.11	70W MBI	$32.83	$26.93
Lamp - SON3x70	$142.04	$151.54	70W MBI - MACQUARI E DEC.	$137.10	$112.43
Lamp - SON4x250	$246.90	$247.53	70W SON	$28.73	$23.57
Lamp - SON4x600	$261.22	$261.90	70W SON - BOURKE HILL	$88.52	$72.59
Lamp - SON4x70	$175.64	$175.98	70W SON - GEC BOSTON 2	$103.65	$84.99
Lamp - SON8x70	$290.16	$290.71	70W SON - NOSTALGI A	$82.50	$67.65
Lamp - SOX1x135	$55.58	$55.65	70W SON - PARKVILLE	$103.65	$84.99
Lamp - SOX1x150	$55.58	$55.65	70W SON - REGAL/FLI NDERS	$146.52	$120.14
Lamp - SOX1x180	$92.64	$92.70	70W SON BOLLARD	$62.82	$51.52
Lamp - SOX1x90	$51.24	$51.28	70W SON FLOODLIG HT	$34.78	$28.53
Lamp - TF1x16	$42.89	$42.94	70W SON - PLAIN	$28.73	$23.57
Lamp - TF1x176	$48.29	$48.37	750W MBI FLOODLIG	$86.51	$70.95

Opex				Post 2009 Annuity Charge		
				HT		
Lamp - TF1x20	$42.89	$42.94		80W MBF	$24.86	$20.40
Lamp - TF1x236	$48.29	$48.37		80W MBF - PLAIN	$24.86	$20.40
Lamp - TF1x26	$42.89	$42.94		80W MBF - BEGA+CURVE BRA	$129.62	$106.28
Lamp - TF1x40	$64.85	$64.99		80W MBF - BOURKE HILL	$60.38	$49.52
Lamp - TF1x40 (P09)	$64.85	$64.99		80W MBF - GEC BOSTON 2	$103.65	$84.99
Lamp - TF1x60	$42.89	$42.94		80W MBF - NOSTALGIA	$77.75	$63.76
Lamp - TF1x80	$42.89	$42.94		80W MBF - REGAL/FLINDERS	$141.31	$115.87
Lamp - TF2x14 T5	$47.49	$47.55		80W MBF - SYLVANIA SUBUR	$24.86	$20.40
Lamp - TF2x14 T5 (P09)	$47.49	$47.55		80W MBF BOLLARD	$49.85	$40.88
Lamp - TF2x20	$57.11	$57.20		80W MBF TOORAK	$70.88	$58.13
Lamp - TF2x20 (P09)	$57.11	$57.20		90W SOX	$70.76	$58.04
Lamp - TF2x26	$47.49	$47.55		BOLLARD	$39.01	$29.28
Lamp - TF2x26 (P09)	$47.49	$47.55		C4	$64.76	$48.62
Lamp - TF2x40	$47.49	$47.55		COLUMN 10.5M-13.5M	$734.30	$551.79
Lamp - TF2x58	$47.49	$47.55		COLUMN 14M-15M	$734.30	$551.79
Lamp - TF2x80	$47.49	$47.55		COLUMN 2.5M-3.5M	$661.06	$496.81
Lamp - TF3x20	$52.10	$52.15		COLUMN 4-6.5M ORION WATE	$675.42	$507.59
Lamp - TF3x40	$52.10	$52.15		COLUMN 4M-6.5M	$698.58	$524.98

Opex			Post 2009 Annuity Charge		
Lamp - TF3x80	$52.10	$52.15	COLUMN 7M-10M	$686.91	$516.22
Lamp - TF4x20	$56.70	$56.75	DECORATIVE COLUMN	$713.48	$536.16
Lamp - TF4x40	$56.70	$56.75	DEDICATED SUPPORT & COND	$671.30	$504.49
Lamp - TF4x40 (P09)	$56.70	$56.75	HYDE PARK STANDARD	$767.51	$576.72
Lamp - TF4x80	$56.70	$56.75	INCANDESCENT	$19.75	$16.21
Lamp - TF5x58	$61.30	$61.36	MACQUARIE STANDARD	$46.49	$34.90
Lamp - TF5x65	$61.30	$61.36	MAST 15.5M-30M	$694.45	$521.88
Lamp - TF5x80	$61.30	$61.36	MAST 23M	$694.45	$521.88
Lamp - TF6x20	$65.91	$65.96	MAST 25M	$694.45	$521.88
Lamp - TF6x36	$65.91	$65.96	NIL	$5.11	$3.84
Lamp - TF6x80	$65.91	$65.96	O/U	$10.40	$8.53
Lamp - TH1x1000	$59.15	$59.23	ORION DOUBLE ARM	$31.57	$23.70
Lamp - TH1x1500	$59.15	$59.23	POLO 10.5M DECORATIVE 2M	$62.83	$47.17
Lamp - TH1x400	$59.15	$59.23	POLO 4.5M DECORATIVE 1.2	$62.83	$47.17
Lamp - TH1x500	$48.29	$48.37	ROCKS STANDARD	$683.52	$513.67
Lamp - TH1x500 (P09)	$48.29	$48.37	SMARTPOLE DOUBLE	$5.11	$3.84
Lamp - TH1x750	$59.15	$59.23	SMARTPOLE SINGLE LONG	$5.11	$3.84
			SMARTPOLE SINGLE SHORT	$5.11	$3.84

Opex	Post 2009 Annuity Charge		
	SUSPENDED	$15.88	$11.92
	T1	$21.35	$16.03
	T2	$28.68	$21.53
	T2A	$28.68	$21.53
	T3	$28.68	$21.53
	T3A	$28.68	$21.53
	T4	$28.95	$21.74
	T5	$28.95	$21.74
	T6	$33.70	$25.31
	T7	$33.70	$25.31
	TH FLOODLIGHT	$146.94	$120.49
	UGORDA	$10.40	$8.53
	UGR1	$14.44	$11.84
	UGR2	$10.40	$8.53
	UGS	$10.40	$8.53
	EMPTY	$16.27	$13.36
	PRIVATE	$5.11	$3.84
	PRIVATE	$16.27	$13.36
	0.5 (P09)	$10.85	$8.15
	1.2 (P09)	$10.85	$8.15
	1000W SON (P09)	$123.30	$101.11
	100W SON (P09)	$50.01	$41.02
	100W SON Floodlight (P09)	$72.96	$59.84
	100W SON -PLAIN (P09)	$50.01	$41.02
	125W MBF (P09)	$37.01	$30.37
	125W MBF -PLAIN	$37.01	$30.37

Opex	Post 2009 Annuity Charge		
	(P09)		
	150W SON - Parkway 1 (P09)	$59.95	$49.17
	150W SON (P09)	$50.45	$41.38
	150W SON Active Reactor	$73.60	$60.37
	150W SON Floodlight (P09)	$58.86	$48.28
	1x29W LED	$46.34	$38.01
	2.0 (P09)	$15.34	$11.52
	250W SON - Parkway 1(P09)	$59.95	$49.17
	250W SON (P09)	$50.45	$41.38
	250W SON Active Reactor	$73.60	$60.37
	250W SON Floodlight (P09)	$58.86	$48.28
	2x14W TF - T5 Pierlight (P09)	$37.98	$31.16
	3.0 (P09)	$24.01	$18.03
	3.5 (P09)	$23.83	$17.90
	4.0 (P09)	$29.30	$22.01
	400W SON - Parkway 1(P09)	$59.95	$49.17
	400W SON (P09)	$54.71	$44.87
	400W SON Active Reactor	$82.34	$67.53
	400W SON Floodlight (P09)	$58.86	$48.28

Opex	Post 2009 Annuity Charge		
	42W MBF - Sylvania Suburban Ec (P09)	$34.84	$28.58
	70W MBI II	$28.83	$23.66
	70W MBI II AERO	$29.93	$24.55
	70W SON - Nostalgia (P09)	$82.50	$67.65
	70W SON (P09)	$28.73	$23.57
	70W SON Floodlight (P09)	$34.78	$28.53
	70W SON - PLAIN (P09)	$28.73	$23.57
	80W MBF - Bourke Hill (P09)	$60.38	$49.52
	80W MBF - PLAIN (P09)	$24.86	$20.40
	80W MBF - Sylvania Suburban (P09)	$24.86	$20.40
	Column 10.5m-13.5m (P09)	$734.30	$551.79
	Column 2.5m-3.5m (P09)	$661.06	$496.81
	Column 4m-6.5m (P09)	$698.58	$524.98
	Column 7m-10m (P09)	$686.91	$516.22
	Dedicated Support & Conductor (P09)	$52.96	$39.75
	Macquarie Standard (P09)	$46.49	$34.90

Opex	Post 2009 Annuity Charge		
	O/U (P09)	$10.40	$8.53
	Orion Double Arm (P09)	$31.57	$23.70
	Suspended (P09)	$10.77	$8.09
	T1 (P09)	$23.92	$17.96
	T2A (P09)	$28.68	$21.53
	T3 (P09)	$28.68	$21.53
	T4 (P09)	$28.95	$21.74
	T5 (P09)	$28.95	$21.74
	T6 (P09)	$33.70	$25.31
	T7 (P09)	$33.70	$25.31
	UGR1 (P09)	$14.44	$11.84
	UGR2 (P09)	$10.40	$8.53

Table 166-16.21: Pre-2009 capital charge

Customer	FY16		FY17		FY18		FY19	
	Revised proposal	Final decision	Revised proposal	Final decision	Revised proposal	Final decision	Revised proposal	Final decision
Customer 1	$211,219	$210,972	$159,491	$159,118	$120,431	$120,008	$90,937	$90,512
Customer 2	$0	$0	$0	$0	$0	$0	$0	$0
Customer 3	$477,006	$476,448	$465,345	$464,256	$453,969	$452,376	$442,871	$440,801
Customer 4	$0	$0	$0	$0	$0	$0	$0	$0
Customer 5	$1,073,877	$1,072,619	$998,965	$996,627	$929,279	$926,019	$864,454	$860,413
Customer 6	$266	$266	$185	$184	$128	$128	$89	$88
Customer 7	$313,694	$313,327	$278,116	$277,465	$246,573	$245,708	$218,607	$217,585
Customer 8	$206,654	$206,412	$205,682	$205,200	$204,714	$203,996	$203,751	$202,798
Customer 9	$711,356	$710,523	$692,919	$691,298	$674,960	$672,592	$657,466	$654,393
Customer 10	$9,843	$9,831	$8,060	$8,041	$6,600	$6,576	$5,404	$5,379
Customer 11	$222,481	$222,221	$215,877	$215,372	$209,470	$208,735	$203,252	$202,302
Customer 12	$445,947	$445,425	$435,827	$434,807	$425,936	$424,442	$416,270	$414,324
Customer 12 2	$0	$0	$0	$0	$0	$0	$0	$0
Customer 14	$640,182	$639,433	$583,137	$581,773	$531,175	$529,312	$483,844	$481,582
Customer 15	$1,446,136	$1,444,442	$1,345,948	$1,342,799	$1,252,702	$1,248,308	$1,165,916	$1,160,466
Customer 16	$2,702	$2,699	$2,301	$2,295	$1,959	$1,952	$1,668	$1,660
Customer 17	$2,906	$2,903	$2,848	$2,841	$2,790	$2,781	$2,734	$2,722

Customer	FY16		FY17		FY18		FY19	
Customer 18	$0	$0	$0	$0	$0	$0	$0	$0
Customer 19	$0	$0	$0	$0	$0	$0	$0	$0
Customer 20	$4,953	$4,947	$5,364	$5,351	$5,809	$5,789	$6,291	$6,262
Customer 21	$0	$0	$0	$0	$0	$0	$0	$0
Customer 22	$0	$0	$0	$0	$0	$0	$0	$0
Customer 23	$0	$0	$0	$0	$0	$0	$0	$0
Customer 24	$0	$0	$0	$0	$0	$0	$0	$0
Customer 25	$0	$0	$0	$0	$0	$0	$0	$0
Customer 26	$0	$0	$0	$0	$0	$0	$0	$0
Customer 27	$0	$0	$0	$0	$0	$0	$0	$0
Customer 28	$0	$0	$0	$0	$0	$0	$0	$0
Customer 29	$675	$674	$605	$603	$542	$540	$485	$483
Customer 30	$0	$0	$0	$0	$0	$0	$0	$0
Customer 31	$0	$0	$0	$0	$0	$0	$0	$0
Customer 32	$19,881	$19,858	$17,095	$17,055	$14,700	$14,648	$12,640	$12,581
Customer 33	$1,096,757	$1,095,473	$1,093,802	$1,091,242	$1,090,855	$1,087,028	$1,087,916	$1,082,830
Customer 34	$0	$0	$0	$0	$0	$0	$0	$0
Customer 35	$1,148,474	$1,147,130	$1,127,434	$1,124,796	$1,106,779	$1,102,896	$1,086,502	$1,081,423
Customer 36	$88,011	$87,908	$84,510	$84,312	$81,148	$80,864	$77,921	$77,556

Customer	FY16		FY17		FY18		FY19	
Customer 37	$464,333	$463,790	$453,577	$452,515	$443,069	$441,515	$432,805	$430,782
Customer 38	$0	$0	$0	$0	$0	$0	$0	$0
Customer 39	$350,843	$350,433	$346,529	$345,718	$342,267	$341,067	$338,058	$336,478
Customer 40	$776,094	$775,185	$676,473	$674,890	$589,640	$587,572	$513,953	$511,550
Customer 41	$684,656	$683,854	$692,045	$690,426	$699,515	$697,061	$707,064	$703,759
Customer 42	$175,818	$175,613	$144,522	$144,184	$118,796	$118,379	$97,650	$97,193
Customer 43	$318,324	$317,951	$295,144	$294,453	$273,652	$272,692	$253,726	$252,539
Customer 44	$528,980	$528,361	$619,609	$618,159	$725,765	$723,219	$850,109	$846,135
Customer 45	$194,471	$194,243	$157,175	$156,807	$127,031	$126,586	$102,669	$102,189
Customer 46	$0	$0	$0	$0	$0	$0	$0	$0
Customer 47	$0	$0	$0	$0	$0	$0	$0	$0
Customer 48	$131,639	$131,485	$123,797	$123,508	$116,423	$116,015	$109,488	$108,976
Customer 49	$421,181	$420,688	$364,494	$363,641	$315,436	$314,330	$272,981	$271,705
Customer 50	$104,465	$104,342	$109,757	$109,501	$115,318	$114,914	$121,161	$120,595
Customer 51	$506	$505	$485	$484	$465	$463	$445	$443
Customer 52	$502	$502	$427	$426	$363	$361	$308	$307
Customer 53	$502	$502	$427	$426	$363	$361	$308	$307
Customer 54	$1,694	$1,692	$1,697	$1,693	$1,699	$1,693	$1,702	$1,694
Customer 55	$0	$0	$0	$0	$0	$0	$0	$0

Customer	FY16		FY17		FY18		FY19	
Customer 56	$1,720	$1,718	$1,732	$1,728	$1,744	$1,738	$1,756	$1,747
Customer 57	$0	$0	$0	$0	$0	$0	$0	$0
Customer 58	$1,091,792	$1,090,514	$1,120,469	$1,117,847	$1,149,898	$1,145,864	$1,180,101	$1,174,585
Customer 59	$0	$0	$0	$0	$0	$0	$0	$0
Customer 60	$0	$0	$0	$0	$0	$0	$0	$0
Customer 61	$0	$0	$0	$0	$0	$0	$0	$0
Customer 62	$0	$0	$0	$0	$0	$0	$0	$0
Customer 63	$0	$0	$0	$0	$0	$0	$0	$0
Customer 64	$0	$0	$0	$0	$0	$0	$0	$0
Customer 65	$905	$904	$896	$894	$887	$884	$878	$874
Customer 66	$864	$863	$777	$775	$698	$695	$627	$624
Customer 67	$266,651	$266,339	$204,259	$203,781	$156,466	$155,917	$119,855	$119,295
Customer 68	$0	$0	$0	$0	$0	$0	$0	$0
Customer 68 2	$0	$0	$0	$0	$0	$0	$0	$0
Customer 70	$0	$0	$0	$0	$0	$0	$0	$0
Customer 71	$160	$160	$143	$142	$127	$127	$114	$113
Customer 72	$5,244	$5,237	$5,172	$5,160	$5,101	$5,083	$5,031	$5,008
Customer 73	$168,637	$168,440	$132,487	$132,177	$104,086	$103,721	$81,773	$81,391
Customer 74	$0	$0	$0	$0	$0	$0	$0	$0

Customer	FY16		FY17		FY18		FY19	
Customer 75	$282,252	$281,922	$313,306	$312,572	$347,776	$346,555	$386,038	$384,233
Customer 76	$43	$43	$24	$24	$13	$13	$8	$7
Customer 77	$1,012	$1,011	$528	$527	$276	$275	$144	$143
Customer 77 2	$0	$0	$0	$0	$0	$0	$0	$0
Customer 77 3	$0	$0	$0	$0	$0	$0	$0	$0
Customer 80	$827,659	$826,690	$803,026	$801,147	$779,127	$776,394	$755,939	$752,405
Customer 81	$25,929	$25,899	$29,094	$29,026	$32,645	$32,530	$36,629	$36,458
Customer 82	$633,164	$632,423	$617,813	$616,367	$602,833	$600,718	$588,217	$585,467
Customer 83	$129	$129	$42	$42	$14	$14	$4	$4
Customer 84	$0	$0	$0	$0	$0	$0	$0	$0
Customer 85	$0	$0	$0	$0	$0	$0	$0	$0
Customer 86	$0	$0	$0	$0	$0	$0	$0	$0
Customer 87	$261	$260	$156	$155	$93	$93	$56	$55
Customer 88	$132,834	$132,679	$147,449	$147,104	$163,672	$163,098	$181,679	$180,830
Customer 89	$7,843	$7,833	$7,390	$7,373	$6,963	$6,939	$6,561	$6,531
Customer 90	$196,724	$196,494	$180,823	$180,399	$166,207	$165,623	$152,772	$152,058
Customer 91	$1,635,789	$1,633,874	$1,610,327	$1,606,558	$1,585,261	$1,579,700	$1,560,585	$1,553,290
Customer 92	$0	$0	$0	$0	$0	$0	$0	$0
Customer 93	$53,585	$53,522	$56,017	$55,885	$58,558	$58,353	$61,215	$60,929

Customer	FY16		FY17		FY18		FY19	
Customer 93 2	$0	$0	$0	$0	$0	$0	$0	$0
Customer 93 3	$0	$0	$0	$0	$0	$0	$0	$0
Customer 96	$0	$0	$0	$0	$0	$0	$0	$0
Customer 97	$25,657	$25,627	$23,463	$23,408	$21,456	$21,381	$19,621	$19,530
Customer 98	$70,800	$70,717	$69,671	$69,508	$68,561	$68,320	$67,468	$67,153
Customer 99	$753,213	$752,331	$676,479	$674,896	$607,563	$605,432	$545,668	$543,117
Customer 100	$346,975	$346,569	$326,071	$325,308	$306,426	$305,351	$287,965	$286,619
Customer 101	$398,230	$397,764	$385,668	$384,765	$373,502	$372,191	$361,719	$360,028
Customer 102	$407,729	$407,252	$368,220	$367,359	$332,540	$331,374	$300,318	$298,914
Customer 103	$1,016,057	$1,014,868	$1,022,407	$1,020,014	$1,028,796	$1,025,187	$1,035,225	$1,030,386
Customer 104	$0	$0	$0	$0	$0	$0	$0	$0
Total	$20,628,888	$20,604,738	$19,813,573	$19,767,207	$19,131,609	$19,064,494	$18,569,411	$18,482,604

A.2 Ancillary network services

Table 16.22: Maximum hourly labour rates (including on costs and overhead) for quoted services ($2014–15)

Category	AER final decision maximum hourly labour rate—includes on-cost and overhead ($2014–15)
Admin	89.06
Technical	142.81
Engineer	166.44
Field worker	132.40
Senior engineer	210.96

Source: Marsden Jacob

Table 16.23: AER final decision X factors for ancillary network services (per cent)

	2015–16	2016–17	2017–18	2018–19
X factor	–1.02	–1.07	–1.11	–1.10

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.

Table 16.24: Ancillary network services—final decision ($2014–15)

Service		Proposed Price	AER Final Decision	(final cf proposed, per cent)
Metering Site Establishment	Fee-Based	52.40	52.40	0.0
Special Meter Reading	Fee-Based	9.73	9.69	-0.4
Type 5-6 Meter Test	Fee-Based	548.62	548.31	-0.1
Franchise current transformer (CT) meter install	Quoted	Quoted	Quoted	NA
Types 5-7 non-standard Meter Data Services	Fee-Based	13.83	13.83	0.0
Emergency maintenance of failed metering equipment not	Fee-Based	156.78	156.78	0.0

Service		Proposed Price	AER Final Decision	(final cf proposed, per cent)
owned by the network				
Off peak conversion	Fee-Based	198.71	198.39	-0.2
Disconnection Visit (Site Visit Only)	Fee-Based	42.20	41.89	-0.7
Disconnection Completed	Fee-Based	138.67	138.67	0.0
Disconnection Visit (Disconnection Completed- Technical/ Advanced)	Fee-Based	233.20	233.20	0.0
Pillar/ Pole Top Disconnection Completed	Fee-Based	742.07	370.44	-50.1
Pillar/Pole Top Site Visit	Fee-Based	309.33	309.33	0.0
Reconnection/ Disconnection Outside Normal Business Hours	Fee-Based	95.53	95.53	0.0
Network Tariff Change Request	Fee-Based	46.89	No charge	NA
Recovery of Debt Collection Costs- Dishonoured Transactions	Fee-Based	24.40	24.40	0.0
Attendance at customers' premises to perform a statutory right where access is prevented	Fee-Based	75.32	75.32	0.0
Vacant Property Disconnection	Fee-Based	136.06	136.06	0.0
Vacant Property Site Visit	Fee-Based	34.73	34.73	0.0
Design information				
1 to 5 lots/ poles	Fee-Based	518.74	428.43	-17.4
6 to 10 lots/ poles	Fee-Based	691.65	571.24	-17.4
11 to 40 lots/poles	Fee-Based	1210.39	999.67	-17.4
Over 40 lots/ poles	Fee-Based	1556.22	1285.29	-17.4
Kiosk/ HVC/ PT	Fee-Based	648.42	535.54	-17.4
Chambers	Quoted/ Hourly Rate	172.91	142.81	-17.4

Service		Proposed Price	AER Final Decision	(final cf proposed, per cent)
Certification				
Certification	Fee-Based	1556.22	1285.29	-17.4
Design certification- underground urban residential subdivision (vacant lots):				
1 to 5 lots	Fee-Based	345.83	285.62	-17.4
6 to 10 lots	Fee-Based	518.74	428.43	-17.4
11 to 40 lots	Fee-Based	864.57	714.05	-17.4
Over 40 lots	Fee-Based	1037.48	856.86	-17.4
Design certification- rural overhead subdivisions and rural extensions:				
1 to 5 poles	Fee-Based	345.83	285.62	-17.4
6 to 10 poles	Fee-Based	518.74	428.43	-17.4%
11 or more poles	Fee-Based	864.57	714.05	-17.4%
Design certification- underground commercial and industrial or rural subdivisions (vacant lots- no development):				
Up to 10 lots	Fee-Based	518.74	428.43	-17.4
11 to 40 lots	Fee-Based	691.65	571.24	-17.4
Over 40 lots	Fee-Based	1037.48	856.86	-17.4
Certification Kiosk/HVC/PT	Fee-Based	1037.48	856.86	-17.4
Certification Suburban/CBD Chambers	Quoted/ Hourly Rate	172.91	142.81	-17.4
Design certification - commercial & industrial developments	Quoted/ Hourly Rate	R3 per hour	R3 per hour	0.0
Design certification - asset relocation or street lighting	Quoted/ Hourly Rate	R2 per hour or R3 per hour	R2 per hour or R3 per hour	0.0
Design certification - chambers, multi kiosk,	Quoted/ Hourly Rate	R2 per hour	R2 per hour	0.0

Service		Proposed Price	AER Final Decision	(final cf proposed, per cent)
CBD chambers				
Design Rechecking				
Underground urban residential subdivision (vacant lots)	Quoted/ Hourly Rate	R2 per hour	R2 per hour	0.0
Rural overhead subdivisions and rural extensions	Quoted/ Hourly Rate	R2 per hour	R2 per hour	0.0
Underground commercial and industrial or rural subdivisions (vacant lots - no development)	Quoted/ Hourly Rate	R2 per hour	R2 per hour	0.0
Commercial and industrial developments	Quoted/ Hourly Rate	R3 per hour (or R5 per hour for major connection)	R3 per hour (or R5 per hour for major connection)	0.0
Asset relocation or street lighting	Quoted/ Hourly Rate	R3 per hour (or R5 per hour for major connection)	R3 per hour (or R5 per hour for major	0.0
Inspection Fees Level 2 ASP				
A-grade	Fee-Based	41.31	29.41	-28.8
B-grade	Fee-Based	67.25	50.83	-24.4
C-grade	Fee-Based	205.58	165.08	-19.7
Reinspection of Installation Work in relation to Customer Assets	Quoted/ Hourly Rate	172.91	142.81	-17.4
Substation commissioning				
Underground Urban Residential Subdivision	Fee-Based	2025.02	1799.25	-11.1
Rural Overhead Subdivisions & Extensions	Fee-Based	1256.33	1060.66	-15.6
Underground Commercial & Industrial or Rural Subdivisions	Fee-Based	2753.95	2392.72	-13.1
Commercial and	Quoted/ Hourly	172.91	142.81	-17.4

Service		Proposed Price	AER Final Decision	(final cf proposed, per cent)
Industrial Developments	Rate			
Asset Relocation or Street Lighting	Quoted/ Hourly Rate	172.91	142.81	-17.4
Complex & Chamber Substations (New)	Quoted/ Hourly Rate	172.91	142.81	-17.4
Access Permits				
General	Fee-Based	2085.8	1820.47	-12.7
Complex	Quoted/ Hourly Rate	172.91	142.81	-17.4
Clearance to Work	Fee-Based	1123.94	928.27	-17.4
Access (standby person)	Quoted/ Hourly Rate	132.40	132.40	0.0
Notices of arrangement	Fee-Based	492.03	464.42	-5.6
Authorisation of ASPs				
ASPs Level 1	Fee-Based	642.41	541.11	-15.8
ASPs Level 2	Fee-Based	476.49	374.68	-21.4
Administration services relating to work performed by ASPs, including processing work				
Underground urban residential subdivision (vacant lots) Up to 5 Lots	Fee-Based	522.66	356.24	-31.8
Underground urban residential subdivision (vacant lots) 6 - 10 Lots	Fee-Based	653.32	445.30	-31.8
Underground urban residential subdivision (vacant lots) 11 - 40 Lots	Fee-Based	914.65	623.42	-31.8
Underground urban residential subdivision (vacant lots) Over 40 Lots	Fee-Based	1045.31	712.48	-31.8
Rural overhead	Fee-Based	522.66	356.24	-31.8

Service		Proposed Price	AER Final Decision	(final cf proposed, per cent)
subdivisions and rural extensions Up to 5 Poles				
Rural overhead subdivisions and rural extensions 6 - 10 Poles	Fee-Based	653.32	445.30	-31.8
Rural overhead subdivisions and rural extensions 11 or more Poles	Fee-Based	1175.98	801.54	-31.8
Underground commercial and industrial or rural subdivisions (vacant lots - no development Quoted Rate	Quoted/ Hourly Rate	130.66	89.06	-31.8
Commercial and industrial developments Quoted Rate	Quoted/ Hourly Rate	130.66	89.06	-31.8
Asset relocation or street lighting Quoted Rate	Quoted/ Hourly Rate	130.66	89.06	-31.8
Subdivision involving substation/s (NEW)	Fee-Based	156.80	106.87	-31.8
Additional services required by ASP/Applicant e.g Guarantee of revenue, clarification meetings, variations to contract, reinspections etc. (NEW) Quoted Rate	Quoted/ Hourly Rate	130.66	89.06	-31.8
Supply of Conveyancing Information				
Desk Inquiry	Fee-Based	35.65	29.64	-16.9
Field Inquiry	Fee-Based	285.30	230.33	-19.3
Customer Interface Coordination for contestable works	Quoted/ Hourly Rate	215.05	199.83	-7.1
Preliminary Enquiry Service	Quoted/ Hourly Rate	218.29	202.06	-7.4
Connection offer				

Service		Proposed Price	AER Final Decision	(final cf proposed, per cent)
service				
Basic (excluding 100A Connections requiring load slip or Basic Micro EG Connections >5kW or Over 100A Connection Offer (new or existing site))	Fee-Based	10.89	7.42	-31.9
Basic 100A Connections requiring a load slip or Basic Micro EG Connections >5kW or Over 100A Connection Offer (new or existing site)	Fee-Based	199.10	188.70	-5.2
Standard Off-Site or On-Site Augmentation Work	Fee-Based	199.10	188.70	-5.2
Standard Offer ASP1 Connections	Fee-Based	241.33	241.33	0.0
Standard Embedded Generation >5MVA capacity	Quoted/ Hourly Rate	231.25	210.96	-8.8
Rectification Works				
Rectification of illegal connections	Fee-Based	794.36	749.78	-5.6
Provision of service/additional crew	Quoted/ Hourly Rate	264.79	264.79	0.0
Fitting of tiger tails	Hourly Rate + hire charge for tiger tails	132.40	132.40	0.0
High load escorts	Quoted/ Hourly Rate	142.52	135.00	-5.3
Connection/ Relocation Process Facilitation	Fee-Based	218.29	202.06	-7.4
Services to supply and connect temporary supply to one or more customers				
break & remake HV LL links	Fee-Based	5900.12	5177.64	-12.2

Service		Proposed Price	AER Final Decision	(final cf proposed, per cent)
break & remake HV bonds	Fee-Based	3091.14	2579.39	-16.6
Break & remake LV bonds	Fee-Based	1862.37	1862.37	0.0
Connect & disconnect MG to OH mains	Fee-Based	2584.74	2584.74	0.0
Connect & disconnect MG to LV board in Kiosk	Fee-Based	2021.03	2021.03	0.0
Planning Studies and analysis relating to distribution (incl sub-transmission & dual function assets) connection applications	Quoted/ Hourly Rate	231.25	210.96	-8.8
Services involved in obtaining deeds of agreement in relation to property rights	Quoted/ Hourly Rate	231.25	210.96	-8.8
Investigation, review and implementation of remedial actions associated with ASP's connection work	Quoted/ Hourly Rate	231.25	210.96	-8.8

ASP Inspection Services- L1 Inspections and L1 & L2 reinspections:

	Grade:	A (hrs/lot)	B (hrs/lot)	C (hrs/lot)	Grade	Proposed Price	AER Decision	(final cf proposed, per cent)
Underground urban residential subdivision (vacant lots)	First 10 lots:	0.5 @R2	1.2 @ R2	2.5 @ R2	A.	86.46	71.41	-17.4
					B.	207.50	171.37	-17.4
					C.	432.28	357.03	-17.4
	Next 40 lots:	0.3 @ R2	0.7 @ R2	1.5 @ R2	A.	51.87	42.84	-17.4
					B.	121.04	99.97	-17.4
					C.	259.37	214.22	-17.4

	Remainder:	0.1 @ R2	0.4 @ R2	0.7 @ R2	A.	17.29	14.28	-17.4
					B.	69.17	57.12	-17.4
					C.	121.04	99.97	-17.4
	Plus flat fee travel time	plus 0.5 hr @ R2 travel time				86.46	71.41	-17.4
	Grade:	A (hrs/lot)	B (hrs/lot)	C (hrs/lot)				
Rural overhead subdivisions and rural extensions	1-5 poles	0.6 @ R2	1.2 @ R2	2.2 @ R2	A.	103.75	85.69	-17.4
					B.	207.50	171.37	-17.4
					C.	380.41	314.18	-17.4
	6-10 poles	0.5 @ R2	1.0 @ R2	2.0 @ R2	A.	86.46	71.41	-17.4
					B.	172.91	142.81	-17.4
					C.	345.83	285.62	-17.4
	11+ poles	0.4 @ R2	0.7 @ R2	1.5 @ R2	A.	69.17	57.12	-17.4
					B.	121.04	99.97	-17.4
					C.	259.37	214.22	-17.4
	Plus flat fee travel time	plus 0.5 hr @ R2 travel time				86.46	71.41	-17.4
	Grade:	A (hrs/lot)	B (hrs/lot)	C (hrs/lot)				
Underground commercial and industrial or rural subdivisions (vacant lots - no development)	First 10 lots:	0.5 @R2	1.2 @ R2	2.5 @ R2	A.	86.46	71.41	-17.4
					B.	207.50	171.37	-17.4
					C.	432.28	357.03	-17.4
	Next 40 lots:	0.5 @R2	1.2 @ R2	2.5 @ R2	A.	86.46	71.41	-17.4
					B.	207.50	171.37	-17.4

					C.	432.28	357.03	-17.4
	Remainder:	0.5 @R2	1.2 @ R2	2.5 @ R2	A.	86.46	71.41	-17.4
					B.	207.50	171.37	-17.4
					C.	432.28	357.03	-17.4
	Plus flat fee travel time	plus 0.5 hr @ R2 travel time				86.46	71.41	-17.4

A.3 Metering

Table 16.25 Annual metering charge – Final decision ($ nominal)

Tariff class	Costs	2015/16	2016/17	2017/18	2018/19
Residential inclining block	Non–capital	9.75	9.80	9.84	9.88
	Capital	20.04	20.13	20.22	20.31
Residential TOU	Non–capital	25.20	25.32	25.43	25.54
	Capital	22.31	22.41	22.51	22.61
Controlled load	Non–capital	0.82	0.82	0.83	0.83
	Capital	11.13	11.18	11.23	11.28
Small business inclining block	Non–capital	10.06	10.11	10.15	10.20
	Capital	30.64	30.78	30.91	31.05
Small business TOU	Non–capital	24.97	25.09	25.20	25.31
	Capital	21.29	21.38	21.48	21.58
LV 40–160MWh TOU (system)	Non–capital	44.44	44.64	44.84	45.04
	Capital	27.72	27.85	27.97	28.10
Generator tariff	Non–capital	2.59	2.60	2.61	2.62
	Capital	11.49	11.54	11.59	11.64

Source: AER analysis.

Note: Prices for 2016–17 to 2018–19 are indicative only and will be adjusted for actual CPI during the AER's annual pricing approval processes.

Table 16.26 AER final decision X factors for annual metering charges (per cent)

	2016–17	2017–18	2018–19
X factor	1.89	1.89	1.89

Source: AER analysis.

Meter code	Meter description	Meter code	Upfront capital charge ($ 2014–15)
B1	Single phase single element two wire direct connected accumulation watt–hour meter	B1	47.18
B3	Three phase single element four wire direct connected accumulation	B3	122.64

Meter code	Meter description	Meter code	Upfront capital charge ($ 2014–15)
	watt–hour meter		
E1	Single phase single element two wire direct connected interval watt–hour meter	E1	114.96
E2	Single phase dual element two wire direct connected interval watt–hour meter	E2	175.50
E3	Three phase single element four wire direct connected interval watt–hour meter	E3	237.28
E4	Three phase single element CT connected interval watt–hour meter	E4	572.98

Source: AER analysis.

Table 16.27 AER final decision X factors for upfront capital charge (per cent)

	2015–16	2016–17	2017–18	2018–19
X factor	0.0	0.0	0.0	0.0

Source: AER analysis.