Attachment 8.04

Revisions to the Type 5 and Type 6 Metering Services Proposal

January 2015

Ausgrid revised regulatory proposal attachment

Contents

1 Summary

This attachment responds to the AER's decision set out in Attachment 16 of the Draft Determination. It both supports areas of our proposal which we have not revised in response to the AER's decision as well as those areas where we have accepted the AER's decision and revised our proposal. This attachment should be read in conjunction with Attachment 8.15 (Type 5 & 6 metering services proposal) from Ausgrid's initial proposal.

Ausgrid summarises the AER draft determination as follows:

- Accepted our proposed structure of metering charges, that is, to charge an upfront fee representative of the upfront capital cost for new and upgraded connections and an annual charge that varies by tariff class;
- Accepted the capital expenditure revenue building block approach;
- Accepted the forecast metering capital by volume and cost, except for the meter hardware prices;
- Did not accept forecast metering operating expenditure;
- Did not accept the Metering Regulated Asset Base (RAB) calculation; and,
- Did not accept our proposal to charge an exit fee (administrative cost) to exiting customers, however the AER accepted that an incremental administration cost component is appropriate if further justification is provided.

In the sections that follow we provide further detail to respond to the issues raised by the AER in their Draft Determination, presenting our reasons where we are not accepting their decisions but also confirming where we accept the AER's findings. We also present our updated and revised metering prices and the basis for the revision.

Additional revised supporting attachments are provided in Appendix 1, Table A-1, with the initial proposal documents relating to Type 5 and 6 Metering Services given in Table A-2.

2 Structure of Metering Charges

Ausgrid's high level structure of meter charges was accepted by the AER. This consists of:

- Charging upfront for new and upgraded meter connections; and
- An annual charge that varies by tariff class.

We have not revised this high level structure in our revised proposal.

Furthermore, Ausgrid initially proposed an Exit Fee, as recommended in the AEMC's Power of Choice review[1] but not considered by the AER in their Stage 1 Framework and Approach. This was designed to account for costs associated with customers wishing to exit Ausgrid's Type 5 and 6 Metering service, in particular a sunk asset cost component along with an administrative component. Ausgrid has accepted the AER's draft decision to recover administrative costs only in Alternative Control Services, and consistent with this we have revised our proposal to include the *Meter Transfer Fee* to replace the Exit Fee. Further detail supporting the Meter Transfer Fee is set out in section 9. We have also accepted the AER's proposal to recover residual capital from all customers through Standard Control Services despite this being an artificial cost burden on customers.

3 Type 5 and 6 Metering Services Regulated Asset Base

During the AER's consideration of Ausgrid's regulatory proposal, Ausgrid and the AER have agreed on a number of amendments to Ausgrid's Distribution Roll Forward Model, which have had consequential impacts on the Type 5 and 6 Metering Regulated Asset Base (RAB). The effect of these amendments is that the opening 2014/15 Metering RAB was adjusted from $260.8 million ($ 2013/14) initially proposed by Ausgrid to $267.2 million ($ 2013/14).

[1] AEMC Final Report "Power of choice review - giving consumers options in the way they use electricity", 30 November 2012, page 87

The main drivers of this change include the following:

1. The FY10 opening RAB was amended for the allocation of the Work in Progress (WIP) asset class to remaining system assets. This had a consequential impact on the FY15 distribution opening RAB, and more specifically the Metering RAB;

2. Disposals and capital contributions were adjusted in agreement with the AER between FY10 and FY14;

3. FY14 disposals, capital contributions and gross capex were adjusted for actual expenditure following the finalisation of regulatory accounts.

Table 1 provides details of the revised Metering RAB.

Table 1- Opening Type 5 & 6 metering services RAB at 1 July 2014 ($ million, 2013/14)

Asset	Opening Metering RAB	Remaining Life (yrs)	Standard Life (yrs)
Customer Metering (Mechanical/Electromechanical)	126.0	14.5	25.0
Customer Metering (Digital)	100.9	12.9	15.0
Furniture, fittings, plant and equipment	1.0	12.5	17.4
Land (non-system)	0.3	n/a	n/a
Other non-system assets	1.6	7.7	29.4
IT systems	29.3	3.3	5.0
Motor vehicles	2.6	6.3	10.2
Buildings	5.1	15.0	15.0
Equity Raising Costs	0.6	15.0	15.0
Total	**267.2**		

With respect to the asset lives, the AER did not accept Ausgrid's proposed 15 year remaining lives for Buildings and Equity Raising Costs. These were manually reduced by Ausgrid to align with the metering assets (i.e. 14.5 years remaining life associated with Customer Metering (Mechanical/Electromechanical)), indicating that all current assets in the Metering RAB will not be recovered beyond the current metering asset fleet. Ausgrid has not revised its position on these assets lives and maintains the position in its initial Regulatory Proposal.

4 Forecast Metering Operating Costs

In the Draft Determination, the AER substituted Ausgrid's proposed $143.4 million (nominal) operating expenditure with a lower figure of $119.1 million (nominal). The AER determined this figure predominantly through a lower annual starting point of $23.3 million (nominal) in 2014/15 by referencing the average operational expenditure for 2009-13 ($24.8 million (nominal per annum)) and also referencing Energex's per customer benchmark metering cost of $14 per customer per annum.

Ausgrid has not accepted the AER's draft decision and has retained the initial operating cost approach, with the only change consisting of updates to cost escalators as indicated in Table 2 below:

Table 2 – Cost Escalators (Real 2013/14)

Escalator	FY15	FY16	FY17	FY18	FY19
Labour (internal)	0.9%	0.9%	1.4%	1.6%	1.4%
Labour Hire	0.7%	1.3%	1.3%	1.2%	1.2%
Contracted Services	0.7%	1.3%	1.3%	1.2%	1.2%
Materials	0%	0%	0%	0%	0%
Other Costs	0%	0%	0%	0%	0%

It should be noted that the internal labour escalator is in line with the AER's Draft Determination labour cost escalator.

Forecast Operating Costs for Meter Maintenance, Meter Reading and Meter Data Services

The AER identified three components of Type 5 and 6 metering services operating costs as follows:

- **Meter Maintenance** - covers works to inspect, test, maintain, repair meters;
- **Meter Reading** - refers to quarterly or other regular reading of a meter; and
- **Meter Data Processing** – the collection, processing, storage and delivery of metering data and the management of relevant NMI Standing Data in accordance with the Rules.

In addition to these operating cost components, there are also IT costs associated with providing meter services and an allocation of shared operating expenditure (related to shared IT, furniture, plant and other non-system assets).The AER utilised a high level approach by averaging the total metering opex of multiple years (FY2009-FY2013) to determine an opex base of Ausgrid's metering operational costs. Ausgrid considers that the AER's approach is not consistent with the revenue and pricing principles as it does not provide an opportunity for Ausgrid to recover its reasonable costs of providing metering services. The AER's approach does not have proper regard to the thorough methodology used by Ausgrid to establish a prudent and efficient base operational expenditure and is unreasonabe because it does not take account of the fact that Ausgrid's metering population has fundamentally changed since FY2009. For the reasons set out below, Ausgrid considers that its proposed approach produces an operational expenditure which is more robust and consistent with the revenue and pricing principles.

Ausgrid has been recording the direct operating expenditure associated with its metering business at a granular level. Thus, the historic costs associated with meter maintenance, meter reading and meter data services for Type 5 and 6 metering installations are available at a detailed level, and therefore we have used a top-down approach based on FY2013 opex to derive the efficient underlying opex base.

We have reviewed these costs with prior years and considered the drivers of variations between years. We also provide more detail regarding historical operating expenditure in Section 4.1.

FY2013 meter maintenance costs are below historical costs due to the diversion of resources to the Smart Grid Smart City (SGSC) program in that year, offset with increased costs associated with compliance catch-up activities in FY2014. In addition, our metering policy from 1 July 2014 changed from supplying Type 5 meters back to accumulation meters for most new and upgraded premises.

Type 5 meters are more feature rich but cost more to operate and maintain. During the 2009-14 period, the proportion of Type 5 meters grew disproportionately compared to Type 6 meters. This means that the meter costs over this period cannot be meaningfully averaged to use as a benchmark, nor do they represent an efficient base for the purpose of forecasting.

The volume of new Type 5 meters on our network will now stay approximately at their current levels. We are therefore not forecasting any growth in Type 5 related costs for the FY2014-19 regulatory period. Given the above, we have determined that using FY2013 is the best representation of current volumes and efficiencies.

Using FY2013 actual operating costs for Type 5 and 6 metering services, we have developed unit costs for meter maintenance, meter reading and meter data services. These unit costs, combined with the appropriate number of

customers, forms the forecast operating expenditure for these three service components for the 2014-19 Regulatory Period.

Table 3 details the forecast operating costs to provide Type 5 and 6 metering services for the regulatory period. As stated above, compared to our initial proposal these have been updated with new cost escalators.

Table 3: Forecast meter maintenance, reading and data processing operating costs for FY15 – FY19 ($ million, $ 2013/14)

Service Category	Meter Type	FY15	FY16	FY17	FY18	FY19	Total
Metering Maintenance	Type 5	3.19	3.23	3.27	3.32	3.36	**16.37**
	Type 6	2.32	2.34	2.37	2.41	2.44	**11.88**
Meter Reading	Type 5	3.27	3.31	3.35	3.40	3.44	**16.77**
	Type 6	4.78	4.83	4.89	4.96	5.03	**24.50**
Metering Data Services	Type 5	3.86	3.90	3.95	4.01	4.06	**19.79**
	Type 6	0.93	0.94	0.96	0.97	0.98	**4.79**
Metering ICT Opex	Type 5	3.17	3.19	3.21	3.24	3.26	**16.07**
	Type 6	1.36	1.37	1.38	1.39	1.40	**6.89**
Opex Overheads (Indirect)[2]	Type 5 and 6	4.43	4.54	4.60	4.66	4.72	**22.95**
Total		**27.32**	**27.66**	**27.99**	**28.35**	**28.69**	**140.01**

Total metering operational forecast costs were prepared by applying a top down approach utilising FY2013 as a base year. This detailed top down approach then analysed all internal orders and segregated costs by:

- Type 5 Metering (Alternate Control)
- Type 6 Metering (Alternate Control)
- Standard Control Services (e.g. Bulk Supply Point related Metering services)
- Ancillary Network Services

The Standard Control Services and Ancillary Network Services related costs have been removed from the total cost for the purpose of reporting Type 5 and 6 Metering within Alternate Control Service.

IT operating costs directly attributable to Type 5 and 6 metering services

Ausgrid incurs operating costs for the IT systems directly attributable to supporting Type 5 and 6 metering services. The functions provided by IT systems relate to the data collection, validation, storage and distribution of data to authorised parties for in-area sites with annual usage of less than 160MWh per annum.

Ausgrid's Information, Communication and Technology (ICT) group manages all aspects of investment in information technology, and does not form part of the separate metering business. This business structure results in Ausgrid's Type 5 and 6 metering services IT costs forming part of a cost centre that also provides Standard Control Services and Unregulated Services. That is, the IT operating costs relating to metering services include:

- Unregulated Services (comprising contestable Type 1-4 metering services);
- Standard Control Services including Type 7 metering services;
- Alternative Control Services (ACS) - Type 5 and 6 metering services; and
- Alternative Control Services (ACS) - metering-related Ancillary Network Services.

[2] Includes Debt Raising Costs

We have applied our Cost Allocation Method, as approved by the AER[3], in preparing our forecast for direct metering related ICT operating expenditures. In the initial proposal supporting document *ID00003 Direct allocation of metering related ICT expenditure*, provided as a supporting document to Chapter 8, we explain in more detail the process of identifying and attributing the ICT portion of metering related costs to Type 5 and 6 metering services. Ausgrid's revised metering ICT opex is detailed above in Table 3.

Allocation of shared operating expenditure to Type 5 and 6 metering services

The shared operating costs relate to the following:

- Shared Information and Communications Technology (ICT) expenditure;
- Finance and compliance functions;
- Insurances;
- Contact Centre, Human Resources, Internal Audit and Corporate Communications;
- Property;
- Safety Management; and
- Networks NSW (NNSW) Management costs.

Forecast operating expenditure that could not be directly attributed to Type 5 and 6 metering services have been allocated based on the application of causal or non-causal allocators as outlined in our Cost Allocation Method[4]. Consequently, we have allocated a portion of the shared operating costs to Type 5 and 6 metering services by utilising FTEs, weighted revenue and floor space resulting in the allocation of $22.95m of shared operating expenditure to Type 5 and 6 metering services over 5 years, as shown in Table 3. Compared to Ausgrid's initial proposal, the main difference is the addition of Debt Raising Costs calculated in the Metering Post Tax Revenue Model (PTRM), which previously were inadvertently excluded. This accounts for approximately $764k ($ 2013/14) over 5 years.

4.1 Historic trends in operating expenditure (FY10-FY14)

In Table 4, we outline historical operating costs for meter maintenance, meter reading and meter data services for the current period FY10 – FY14. During this period all new sites, upgraded sites, and reactive and proactive replacements received a Type 5 meter.

Table 4: Historic Type 5 – 6 metering services operating expenditure ($'000, nominal)

OPEX Category	FY10	FY11	FY12	FY13	FY14	Total
Meter Maintenance	$3,953	$6,114	$6,621	$5,753	$6,263	**$28,704**
Meter Reading	$7,792	$6,942	$7,128	$7,748	$7,525	**$37,135**
Meter Data Services	$3,372	$4,213	$4,434	$4,793	$4,697	**$21,509**
Total	**$15,117**	**$17,270**	**$18,184**	**$18,294**	**$18,485**	**$87,348**

We have reviewed these costs with prior years and considered the drivers of variations between years. As mentioned above, FY2013 meter maintenance costs are below historical costs due to the diversion of resources to the Smart Grid Smart City (SGSC) program in that year, offset with increased costs associated with compliance catch-up activities in FY2014. We have determined that using FY2013 is the best representation of current volumes and efficiencies.

[3] Ausgrid's Cost Allocation Method approved by the AER on 2 May 2014
[4] Ausgrid's Cost Allocation Method approved by the AER on 2 May 2014 and provided at Attachment 5.10.

The FY2013 operating expenditure reflects the most representative from a per unit cost driver perspective, specifically around the distinction between Type 5 and Type 6 metering. In previous financial years, the proportion of Type 5 meters has been lower. For example at the beginning of FY2009, the Ausgrid metering installations were 15% Type 5 but at the end of FY2013 this proportion had increased to 30%. Going forward, with a new strategy of like-for-like replacement and upgrades and default accumulation metering for the majority of new connections, this proportion is likely to stabilise. In selecting a representative cost year, the proportion between Type 5 and Type 6 is key because of the higher per unit cost for Type 5 metering compared to Type 6. For this reason, the FY2013 associated operating expenditure (reflecting the Type 5/6 proportions) is used as the representative year.

Type 5 metering requires a higher annual per customer operating expenditure due to the increased time to read a Type 5 meter, reflected in a probe meter reading surcharge, as well as greater obligations of interval meter data validation as per AEMO metrology procedure requirements. However with this comes the benefit of interval data supplied to the National Electricity Market, supporting cost reflective tariffs, efficient market settlement and better alignment with the National Electricity Objective.

The AER's own analysis supports the efficiency of Ausgrid's proposed operating expenditure. An Ausgrid Type 6 customer attracts an annual operating expenditure of $11.26 (nominal) which is slightly below the trend line of annual metering operating expenditure per customer normalised for customer density[5], and also demonstrates a performance significantly less than the Energex benchmark (of $14 per customer, nominal) which has been used by the AER, as an example of a network with Ausgrid characteristics.

In summary, we investigated the AER's approach of a five-year average of opex costs from FY2009 to FY2013 and have determined that it does not provide an appropriate opex base because of the proportionate growth of Type 5 metering installations. Instead, Ausgrid has retained the FY2013 meter volumes and associated opex as initially proposed to form the efficient base year for future projections. The selection of FY2013 takes into account that FY2014 actual costs were higher than FY2013 due to maintenance activities not carried out in FY2013 as planned. Even though this had the effect of artificially pushing down FY2013 opex costs, our drive for efficiency has meant that FY2013 is the prudent and appropriate year to use.

We have also compared Ausgrid's proposed Type 5 price with SA Power Networks, and the proposed prices for Endeavour and Essential Energy (NSW), which results in Ausgrid having the lowest Type 5 unit cost.

5 Forecast Metering Capital Costs

Ausgrid is responsible for the provision, installation and maintenance of Type 5 and 6 metering installations; and the validation, substitution and estimation of metering data for Type 5 and 6 metering installations in accordance with the Rules and the AEMO Metrology Procedure.[6]

In addition to meeting the requirements of the Rules, Ausgrid invests capital expenditure in metering assets to meet the following objectives:

- To ensure metering equipment remains safe and accurate;
- To comply with all relevant legislative obligations applicable to metering equipment;
- To support network pricing strategies;
- To provide access (through customer opt-in) to more cost reflective pricing, such as time based tariffs; and
- To provide tariff flexibility to new embedded generation (including solar/PV) customers.

The AER accepted Ausgrid's capital expenditure revenue building block approach and the forecast metering capital by volume and cost (except for the meter hardware prices). As such, Ausgrid has not remodelled Type 5 and 6 related metering capex, and the initial proposal Attachment 8.18 – Forecast Capex for Type 5 & 6 Metering[7] still applies.

[5] Figure 166.5 of AER Draft Determination
[6] MPP03 General Specification for Electricity Metering Equipment
[7] This can be found on the AER's website at www.aer.gov.au/node/11483

Prudent and Efficient Meter Hardware Prices

Ausgrid's position remains firm that its meter hardware price, as originally proposed, is an efficient price for a prudent meter selection. Ausgrid considers a prudent operator does not select metering equipment based on up-front price alone. The up-front meter price is only a small fraction of the cost of a metering installation over the whole-of-life cost. For this reason issues of reliability, accuracy, efficiency of reading, ease of installation, functionality, compliance performance and logistics are taken into account in the procurement process – see further detail below:

1. Reliability - Specifying a reliability level better guarantees a stable and reduced replacement expenditure, which is dominated by labour costs, not material costs. Equipment with lesser reliability to the minimum requirement must be considered in light of its higher whole-of-life cost impact.

2. Accuracy - Testing and confirming in-service accuracy performance beyond the "on paper" performance is the key to achieving measurement that is representative of actual consumption, delivering fairness to customers and achieving the underlying objectives of compliance. Testing of lower price devices sometimes reveals reduced accuracy in certain circumstances, such as when carrying high currents. The reduced energy registration in the meter could quickly out-strip the up-front capital cost saving.

3. Efficiency of Reading - Care is taken to select metering equipment that achieves efficient reading i.e. meters that can be easily read by meter readers. For accumulation meters, this means displays must be clear and for interval meters, this means the performance of the optical port must be fast and fault free. The absence of this would increase opex costs, compounding read after read.

4. Ease of Installation - Metering equipment that complies with the NER and related requirements are not necessarily the most efficient to install. Meters that are simpler to install not only save labour time but are significant for the replacement of metering equipment on older meter boards that contain asbestos, where matching mounting holes eliminates drilling of panels and exposing installers to asbestos dust.

5. Functionality - For efficiency through flexibility of functionality, metering equipment that can be configured to multiple functions is favoured. For example, metering equipment that can be programmed for import/export operation allows the same meter to be utilised in the circumstance where the customer has embedded generation (i.e. solar). The meter does not need to be changed.

6. Compliance Performance - Achieving NER compliance includes the accuracy performance of the installation, not just the meter. This is significant for CT installations where overall accuracy is determined by the components of the meters, instrument transformers and secondary circuits. Higher accuracy class meters are often employed to more easily achieve accuracy performance of the overall installation.

7. Logistics - Ausgrid utilises just-in-time logistics process for efficiency. However, running out of metering stock is not acceptable to customers. Ausgrid uses a multi-vendor supply arrangement for metering equipment to guarantee supply.

For the specific selection of an accumulation single phase direct connect meter, the product selected by Ausgrid was based on: a design life of 15 years with a better than 99.5% reliability annually during this time. The product also demonstrated full compliance to the relevant Australian Standards; pattern approval; demonstrated stable accuracy during self-heating and high currents; and finally footprint and mounting holes aligning with the Email BAZ meter targeted for replacement, thus avoiding hazardous drilling of asbestos meter boards. In contrast, the lowest cost product does not have the same reliability track record, has less accuracy stability at higher currents and does not match the mounting hole and footprint of the Email BAZ. For these reasons, the lowest cost product was not considered a prudent selection.

For the specific selection of the interval three phase CT connected meter, the products selected are based on: design life of 15 years; better than 99.5% reliability annually; confirmed efficiency and reliability of probe reading; supporting of additional functionality such as import /export energy flow measurement for embedded generation installations; and a higher accuracy performance (Class 0.5) than the minimum NER class requirement to allow the achievement of NER compliance of overall metering installation error performance without special conditions.

In addition to the above, Ausgrid does not accept the AER's use of the lowest end of the determined market rate range as the prudent hardware price. The AER has drawn this conclusion with the assumption that ongoing

procurement improvements by NNSW will lead to the lowest market price, with little regard for the prudent selection of meter hardware.

The AER's substitute price is contradictory to the advice received by the AER from its consultant (Marsden Jacobs Associates) who recommended "that metering hardware costs proposed by each of the businesses should be accepted where the proposed costs are below Marsden Jacob's recommended maximum". The report goes on to state "Where the rates are above the current market rates and Marsden Jacob's maximum proposed rates, we recommend the allowable costs be capped at Marsden Jacob's recommended rate for the particular category and type of meter"[8] .

Four of the six Ausgrid proposed meter hardware prices fell well within the Marsden Jacob Associates (MJA) maximums[9]:

- Accumulation 3 phase Direct Connected - Ausgrid proposed $96.09 against MJA maximum of $100.00
- Interval 1 phase Direct Connected - Ausgrid proposed $88.06 against MJA maximum of $100.00
- Interval 1 phase Dual Element Direct Connected - Ausgrid proposed $147.26 against MJA maximum of $150.0
- Interval 3 phase Direct Connected - Ausgrid proposed $202.00 against MJA maximum of $220.00.

Two of the six Ausgrid proposed meter hardware prices were outside the Marsden Jacob Associates maximums[10]:

- Single Phase Direct Connected Accumulation Meter which exceeded the maximum by $0.06 ($23.06 versus the $23.00 maximum)
- Three Phase, Current transformer connected interval meter ($519.00 versus the $400.00 maximum) which represents a comparatively small volume of meters purchased.

Ausgrid considers the Marsden Jacob approach appropriately consistent with Ausgrid's holistic metering business and existing prudent and efficient practices. The only meter that fell materially outside the Marsden Jacob review was the most complex three phase current transformer connected meter where the price of $519 (nominal) is inclusive of an onboard modem to align to Ausgrid's solution for these sites. The total cost of $519 inclusive of a modem is competitive and provides for an overall safe and efficient solution.

5.1 Revised metering capex

The capital costs by driver associated with new and modified connections, reactive replacements and proactive replacements are shown in Table 5, and are unchanged from Ausgrid's initial proposal.

Table 5: New, upgrade and replacement capex FY15 - FY19 ($ million, $ 2013/14, no cost escalators applied)

Capex category	FY15	FY16	FY17	FY18	FY19	TOTAL Capex
New and upgrade connections[11]	4.92	5.28	8.54	8.47	5.11	**32.32**
Reactive replacement	5.16	5.16	5.05	5.04	5.08	**25.47**
Proactive replacement	4.32	7.74	13.59	13.55	13.71	**52.91**

[8] https://www.aer.gov.au/sites/default/files/Marsden%20Jacob%20Associates%20-%20Provision%20of%20advice%20in%20relation%20to%20alternative%20control%20services%20-%2020%20October%202014.pdf
[9] Marsden Jacob report, table 15, Summary of Proposed Meter Costs
[10] Marsden Jacob report, table 15, Summary of Proposed Meter Costs
[11] New & Upgrade Connections capex is recovered through the Upfront Charge from FY16

Ausgrid has applied updated cost escalators to all forecast capex, with the impact shown in Table 6 below. Also presented are shared capital expenditure associated with shared IT, furniture, plant and non-system assets that are allocated to Type 5 and 6 metering services using the CAM.

Table 6: Meter capex by asset class FY15 - FY19 ($ million, $ 2013/14, cost escalators applied)

Asset Class	FY15	FY16	FY17	FY18	FY19	TOTAL
Customer Metering and Load Control	7.71	8.53	14.61	14.72	14.88	**60.46**
Customer Metering (digital)	6.87	4.66	4.59	4.62	4.64	**25.38**
Furniture, fittings, plant and equipment	0.16	0.10	0.13	0.13	0.16	**0.67**
Land (non-system)	0.00	0.00	0.00	0.00	0.00	**0.00**
Other non-system assets	0.00	0.00	0.00	0.00	0.00	**0.00**
IT systems	4.38	2.85	5.16	2.40	2.20	**16.99**
Motor vehicles	0.10	0.07	0.08	0.10	0.09	**0.44**
Buildings	1.90	3.26	2.40	1.29	0.11	**8.96**
Equity raising costs	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**21.12**	**19.47**	**26.97**	**23.26**	**22.07**	**112.89**

Table 7 shows the capital contributions related to the new and upgrade connections capex from FY16 onwards (recovered through the upfront charges).

Table 7: Capital Contributions for New and Upgrade Connections from FY16 - FY19 ($ million, $ 2013/14, cost escalators applied)

Asset Class	FY15	FY16	FY17	FY18	FY19	TOTAL
Customer Metering and Load Control	0.00	2.94	2.78	2.76	2.79	11.27
Customer Metering (digital)	0.00	2.41	5.86	5.82	2.35	16.44
Total	**0.00**	**5.35**	**8.64**	**8.58**	**5.14**	**27.71**

Meter volumes

To develop forecast expenditure for the next five year period, we have forecast volumes over the next 5 year regulatory period 2014-19 in the following categories;

- New and modified connections;
- Reactive replacement volumes; and

- Proactive replacement volumes.

Ausgrid supplies different meters, dependent on the physical supply arrangements at the customer's premises. Table 8 describes the different types of meters that Ausgrid currently provides.

Table 8: Different type 5 and 6 meters sourced by Ausgrid

Meter Code	Meter Type	Description
B1	Type 6	Single phase, direct connected, accumulation meter
B3	Type 6	Three phase, direct connected, accumulation meter
E1	Type 5	Single phase, direct connected interval meter
E2	Type 5	Single phase, dual element, direct connected interval meter
E3	Type 5	Three phase, direct connected interval meter
E4	Type 5	Three phase, current transformer connected interval meter

The AER has accepted Ausgrid's proposal in relation to the forecast of new and upgrade connections, reactive and proactive replacement volumes for 2014-19. Ausgrid has not made any changes to these volumes in the revised proposal.

6 Revenue Requirements for the Type 5 and 6 Metering Service

In the sections above we have discussed how we have established the value of the existing meter asset base and the basis of developing forecast capital expenditure and operating costs. These are inputs into the calculation of the revenue we are proposing for the provision of Type 5 and 6 metering services for the next five years. This revenue requirement is the basis for the annual prices that we propose to charge customers.

In addition to the direct capital expenditure forecast for Type 5 and 6 metering services, there is an allocation of shared capex recoverable through Alternative Control Services (as per the CAM). The annual amounts of shared capital expenditure allocated to Type 5 and 6 metering services are shown in Table 7 above.

The AER accepted our 'building block' approach to determine the future revenue requirements for Type 5 and 6 metering services. The building block approach calculates the total revenue requirements by summing up the return of and on capital, annual operating expenditure requirements and other costs (such as tax and incentive schemes).

In the revised proposal, Ausgrid has maintained this approach but has revised the Weighted Average Cost of Capital (WACC) in line with SCS to 8.85% (nominal vanilla).

The impact of the revised Metering RAB, capex, opex and WACC results in an update to the revenue requirement for metering shown in Table 9.

Table 9: Building block revenue components ($ million, nominal)

Building Block	FY15	FY16	FY17	FY18	FY19
Return on capital	23.6	23.8	23.6	24.0	24.4

Return of asset (regulatory depreciation)	20.5	23.0	25.4	21.6	20.9
Opex	28.0	29.1	30.1	31.3	32.5
Carry-over amounts	0.0	0.0	0.0	0.0	0.0
Benchmark Tax liability	2.1	3.9	6.0	5.6	3.8
Revenue Requirement	**74.2**	**79.8**	**85.2**	**82.5**	**81.6**

It should be noted that the revenue we forecast to collect from multiplying the Type 5 and 6 metering services prices and customer volumes is slightly below the total building block revenue shown in Table 9. The variation is due to the way we have allocated revenue to the various metering service components to achieve cost-reflective prices. For example, we have allocated meter maintenance revenue based on the number of meters per tariff, whereas revenue required for meter reading costs has been allocated by meter type and meter reading frequency.

7 Annual Prices for Type 5 and 6 Metering Services

Ausgrid proposed a single set of annual prices for all new and upgrade customers (post 1 July 2015) and existing (pre 1 July 2015) customers, and has retained this approach as part of the revised proposal. Ausgrid reviewed the AER's preference for charging new and upgrade customers differently to existing customers, but found this approach to be unjustified.

Our modelling resulted in an immaterial difference between new and existing customers each year.Additionally, it would be costly and impractical to implement this approach given the significant IT system changes required in such short time (i.e. by 1 July 2015).

As a result, Ausgrid maintains the position of a single set of annual charges applicable to all Type 5 and 6 metering customers.

The revision to the metering revenue requirement has triggered an update to the schedule of annual prices. In addition, the prices have been impacted by an update to customer volumes (Network Access Charge volumes) which are also used for Standard Control Services prices. The approach to the calculation of the prices has not changed since the initial proposal. The revised annual charge prices can be found in Table 10.

Table 10: Type 5 and 6 Metering Annual Charges (c/day, nominal)

Network Tariff Code	Tariff Name	FY15	FY16	FY17	FY18	FY19
EA010	Residential Inclining Block	9.23	9.50	9.82	10.13	10.47
EA025	Residential ToU	15.24	15.65	16.16	16.63	17.14
EA030, EA040	Controlled Load	3.70	3.82	3.96	4.10	4.24
EA050	Small Business Inclining Block	12.59	12.97	13.42	13.86	14.33
EA225	Small Business ToU	14.85	15.25	15.74	16.20	16.69
EA302	LV 40-160MWh ToU (System)	23.53	24.14	24.90	25.61	26.36

GENR, GGENR, GGENR2, NGENR, NGENR2	Generator Tariff	4.42	4.56	4.72	4.88	5.04

8 New and Upgrade Connections Upfront Charge

Ausgrid's proposed upfront charges were not accepted by the AER based on the meter hardware unit costs. In line with the justification provided above in Section 5, Ausgrid contends that current meter hardware costs are prudent and efficient and therefore has not revised its proposal to make any changes to the meter hardware component of the upfront charge.

With regards to non-material costs which relate to labour costs (e.g. logistics, meter testing etc.), the AER accepted Ausgrid's proposed labour costs.

Ausgrid's revised upfront charge includes changes to the cost escalators applicable and also the updated WACC. The revised schedule of charges is shown in Table 11.

Table 11: New and Upgrade Upfront Charge (nominal)

Meter Code	Meter Description	FY15	FY16	FY17	FY18	FY19
B1	Single Phase Single Element Two Wire Direct Connected Accumulation Watt-hour Meter	47.65	49.05	50.62	52.31	54.01
B3	Three Phase Single Element Four Wire Direct Connected Accumulation Watt-hour Meter	123.84	127.15	130.67	134.36	138.11
E1	Single Phase Single Element Two Wire Direct Connected Interval Watt-hour Meter	116.09	119.20	122.53	126.01	129.55
E2	Single Phase Dual Element Two Wire Direct Connected Interval Watt-hour Meter	177.22	181.86	186.76	191.85	197.03
E3	Three Phase Single Element Four Wire Direct Connected Interval Watt-hour Meter	239.60	245.80	252.30	259.02	265.89
E4	Three Phase Single Element CT Connected Interval Watt-hour Meter	578.59	593.27	608.45	624.08	640.08

9 Customer Exits – Meter Transfer Fee

Ausgrid's fee for customer exits initially comprised of two components, the stranded asset cost and the administration cost. The AER rejected our initial approach and prices on the basis that an exit fee would create a barrier to competition. It should be noted that the recovery of these costs were not addressed in the AER's Stage 1 Framework & Approach paper[12], and therefore Ausgrid took steps to develop an approach for the Regulatory Proposal in May 2014.

The AER has proposed that a new Standard Control Service be created to allow DNSPs to recoup the stranded asset costs created by competition at the time a customer swithces to an alternate metering service provider. Ausgrid accepts the AER's position in relation to the stranded asset costs being recovered through Standard Control Services.

As for the administrative costs, Ausgrid proposes a new Meter Transfer Fee which 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.

The AER stated, "We maintained the classification and control mechanism for the administration cost component as an alternative control service with a price cap for the individual service"[13]. Ausgrid accepts the AER's position in relation to a Meter Transfer Fee (administration cost) being recovered through Alternative Control Services.

However, while the AER, "accepted in principle that Ausgrid should be allowed to charge an exit fee based on incremental administrative costs incurred to process a customer transfer, Ausgrid did not adequately demonstrate they will incur incremental administrative costs"[14]. On this basis the AER rejected the recovery of administrative costs pending further justification from Ausgrid.

In the section that follows, Ausgrid details the cost-reflective administrative elements of the proposed Meter Transfer Fee in accordance with the criteria originally set out by the AER of being an efficient and reasonable cost of processing the consumer transfer to another Responsible Person.

Justification of the Meter Transfer Fee

The Meter Transfer Fee of $36 (nominal) is predominantly driven by the incremental step of updating the non-Ausgrid metering information (including load control details) into Ausgrid's metering systems to allow network billing activities to occur. This incremental step is outside of the core business processes when dealing exclusively with Ausgrid assets and was accurately reflected in the initial proposal. The fee level also aligned with the recommendation from the Marsden Jacob report.

The AER state that "To demonstrate that Ausgrid will face incremental costs, we consider that it would have to show a reasonable forecast of additional staff they expect to hire over the regulatory period to process customer transfers"[15]. Ausgrid considers it difficult to form a judgement on how and when metering competition will affect customer churn.

It has been determined an average of 927 (Type 1-4) sites transferred from TCA MP (Ausgrid) to an alternate meter provider in the last financial year. As a business we will need to be able to support the request for service and action all notifications in a timely manner. Over the course of the next regulatory period, Ausgrid anticipates that economies of scale will realise efficiencies in the current manual handling processing time.

Defined below is the current process to be undertaken by our Installation Data Operations (IDO) / Meter Data Operations (MDO) group and our Metering Operations group:

1. Customer initiates a change in their metering provider/type via the retailer.

2. The electricity retailer raises a change request in the Market Settlement and Transfer Solution (MSATS) business system.

[12] AER, Draft Determination Attachment 16 Alternative Control Services, November 2014, p16-35
[13] AER, Draft Determination Attachment 16 Alternative Control Services, November 2014, p16-36
[14] AER, Draft Determination Attachment 16 Alternative Control Services, November 2014, p16-48
[15] AER, Draft Determination Attachment 16 Alternative Control Services, November 2014, p16-48

3. Ausgrid is notified from Market Settlement and Transfer Solution (MSATS) business system of the pending loss notification.

4. The Retailer then raises a work order to an Accredited AEMO Metering Provider who should also be an ASP to remove Ausgrid's asset and install their own equipment.

5. The work is completed in the field.

6. The Ausgrid IDO group, receives the notification of service works (NOSW) from the ASP outlining the changes that took effect at the premises.

7. The IDO group update the metering removal in the Meter Configuration System (MCS).

8. The IDO/Meter Data Provider (MDP) will receive the request to then update the new metering details (for the non-Ausgrid asset) into the Metering Business System (MBS), which will allow network billing activities to occur.

    - ❖ This is a manual process with an average of 927 tasks processed in the past 12 months in our Type 1-4 metering business

    - ❖ Ausgrid will not absorb these costs as a BAU function

9. Ausgrid's MDP group will produce the meter churn (change over) data which is then delivered to the new MDP and Retailer for billing purposes via the B2B system.

10. The ASP returns the Ausgrid removed asset back to the designated Ausgrid site – charges are passed to Ausgrid by the ASP for returning the meter.

11. Ausgrid will transport the meter to the meter handling warehouse located at Rhodes.

The warehouse supervisor will sort and clean the returned meters and determine if the meter is for scrap or refurbishment.

In conjunction with the justification for the administration cost, we note that Ausgrid's proposed Meter Transfer Fee is consistent with the maximum fee stated in the Marsden Jacob report commissioned by the AER[16]. For example, Marsden Jacob reviewed the Ausgrid proposed labour rate and time taken in making its recommendation to the AER. In Figure 1 below, Marsden Jacob recommended values that they believe reflect the efficient provision of this service (refer to far right column). These recommended prices align with Ausgrid's originally proposed costs.

Figure 1: Extract from Marsden Jacob Associates Report – Administration Cost

[16] The AER engaged Marsden Jacobs Associates to prepare Provision of advice in relation to Alternative Control Services – PUBLIC VERSION

Table 7: Administration exit fees ($2014/15)

Category	ActewAGL	Ausgrid	Endeavour	Essential	Marsden Jacob
Administration exit fee					
Hourly labour rate (includes all on-costs and overhead charges)		$89.99	$151.48	$112.79	$89.06
Time taken (hours)		0.40	0.33	0.50	0.40
Proposed fee		$36.00	$50.49	$56.40	$35.62
Revised Administration exit fee	$36.00		$36.00	$36.00	Max. $36.00

Note: time take is shown in hours, as such 0.33 hours is equal to 20 minutes. 0.4 hours is equal to 24 minutes and 0.5 hours is equal to 30 minutes.

Also extracted from the Marsden Jacob report; "we recommend that the total labour rates which apply to administration processing of meter exits should be capped at $89.06 (hourly rate). The total labour rate proposed is consistent with market salary rates for administration and processing positions and includes standard on-costs and overheads of 50%. We also recommend that the time taken to perform each exit should, on average, be capped at 0.40 hours."[17]

Ausgrid's proposed Meter Transfer fee is in-line with the maximum fee stated in the Marsden Jacob report, and thus meets the AER's criteria of being "efficient and reasonable". Having met the AER's requirements, Ausgrid re-affirms the proposed Meter Transfer fee of $36 (nominal) in the revised proposal, with the price up to FY19 shown in Table 12 below.

Table 12: Meter Transfer Fee (nominal)

Meter Service	FY15	FY16	FY17	FY18	FY19
Meter Transfer Fee	35.87	37.09	38.55	40.15	41.75

This is based on the initially proposed labour rate of $84.60 ($ 2013/14), for a Grade 8 Administrative/Clerical Officer inclusive of on-costs and overheads, and 0.40 hours handling time. Since the initial proposal, we have updated the prices to include new labour escalators which align with the AER Draft Determination.

10 Control Mechanism – Price Cap

Ausgrid accepts the AER's approach to the control mechanism to apply a cap on fee based metering services. However, Ausgrid seeks to clarify that individual price caps should apply to individual price schedules, and prices within them. That is, we consider 14 X-factors should be set as follows:

- Six X-factors for New & Upgrade Upfront Charges, one for each charge B1 through to E4 (see Table 13);
- Seven X-factors for Annual Prices, one for each tariff (see Table 14); and
- One X-factor for the Meter Transfer Fee (see Table 15).

[17] Marsden Jacob report, pg 20

This is driven by differences in the construction of fees and charges; for instance, a high proportion of the Upfront Charge for New & Upgrade Connections related to meter hardware costs in contrast to the Meter Transfer Fee which is predominantly labour costs. As such, Ausgrid does not accept a nil X-factor as proposed in the Draft Determination as relevant internal labour, labour hire, contracted services and material escalators should apply. The proposed X-factors for each service are shown in Tables 13 to 15 below.

Table 13: X-Factors for New & Upgrade Upfront Charge

Meter Code	Meter Description	FY15	FY16	FY17	FY18	FY19
B1	Single Phase Single Element Two Wire Direct Connected Accumulation Watt-hour Meter	-	-0.43%	-0.70%	-0.81%	-0.73%
B3	Three Phase Single Element Four Wire Direct Connected Accumulation Watt-hour Meter	-	-0.17%	-0.27%	-0.31%	-0.28%
E1	Single Phase Single Element Two Wire Direct Connected Interval Watt-hour Meter	-	-0.18%	-0.29%	-0.34%	-0.30%
E2	Single Phase Dual Element Two Wire Direct Connected Interval Watt-hour Meter	-	-0.12%	-0.19%	-0.22%	-0.20%
E3	Three Phase Single Element Four Wire Direct Connected Interval Watt-hour Meter	-	-0.09%	-0.14%	-0.16%	-0.15%
E4	Three Phase Single Element CT Connected Interval Watt-hour Meter	-	-0.04%	-0.06%	-0.07%	-0.06%

Table 14: X-Factors for Annual Prices

Network Tariff Code	Tariff Name	FY15	FY16	FY17	FY18	FY19
EA010	Residential Inclining Block	-	-0.69%	-0.65%	-0.66%	-0.76%
EA025	Residential ToU	-	-0.46%	-0.44%	-0.45%	-0.51%
EA030, EA040	Controlled Load	-	-0.95%	-0.89%	-0.91%	-1.04%
EA050	Small Business Inclining Block	-	-0.77%	-0.72%	-0.74%	-0.85%
EA225	Small Business ToU	-	-0.45%	-0.43%	-0.44%	-0.50%
EA302	LV 40-160MWh ToU (System)	-	-0.37%	-0.35%	-0.36%	-0.42%
GENR, GGENR, GGENR2,	Generator Tariff	-	-0.82%	-0.77%	-0.78%	-0.90%

NGENR, NGENR2

Table 15: X-Factor for Meter Transfer Fee

Meter Service	FY15	FY16	FY17	FY18	FY19
Meter Transfer Fee	-	-0.87%	-1.40%	-1.62%	-1.44%

As per the AER's Draft Determination and the clarification given above, Ausgrid confirms that the price cap should be calculated as follows:

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

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

Where:

$\overline{p}_i^t$ is the cap on the price of service i in year t.

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

i applies to each service, which for Type 5 and 6 metering correlates with individual prices within (i) the New and Upgrade Upfront Charge (Table 13); (ii) the Annual Prices (Table 14); and (iii) the Meter Transfer Fee (Table 15).

CPI_t is the percentage increase in the consumer price index (see below).

X_i^t is the X-Factor for each service and price within.

These apply to the price established (but not charged) for FY15.

With regards to CPI, Ausgrid does not accept the calculation of CPI given in the draft decision by the AER. Ausgrid contends that CPI should be calculated in the same way CPI for Distribution SCS revenue is calculated, that is, based on four quarters of the year and not only the December quarter. See Attachment 9-01 Ausgrid's Response to AER Attachment 14 Control Mechanisms for standard Control Services.

Appendix 1 – Relevant Attachments and Related Documents

This attachment is accompanied by the attachments listed in Table A-1 below as part of Ausgrid's Revised Regulatory Proposal. These should be considered in context with Ausgrid's initial proposal submitted to the AER in May 2014. Where a revised attachment has not been provided, the initial proposal document versions apply (see Table A-2). These are available on the AER's website[18].

Table A-1: Type 5 and 6 metering services, revised proposal supporting documents

Attachment Number	Attachment name	Content
Attachment **8.05**	Revised Forecast opex for Type 5 & 6 metering	Provides the basis and model for establishing operating expenditure forecasts for FY15- FY19 period.
Attachment **8.06**	Revised Type 5 and 6 metering PTRM	Calculates the revenue requirement building blocks including the capital return, regulatory depreciation and tax for Type 5 & 6 metering services
Attachment **8.07**	Type 5 & 6 metering pricing model	Incorporates the outputs of the Type 5 and 6 metering services PTRM, includes forecast operating expenditure and calculates revenue requirements and prices. It also includes the calculations that form the basis of determining the proposed; i. Meter Transfer fees, and ii. Upfront prices for Type 5 and Type 6 meters.

Table A-2: Type 5 and 6 metering services, initial proposal supporting documents

Attachment Number	Attachment name	Content
Attachment 8.15	**Type 5 and 6 Metering Services Proposal**	Ausgrid's initial proposal for Type 5 and 6 metering
Attachment 8.16	**Forecast opex for Type 5 & 6 metering**	Provides the basis for establishing operating expenditure forecasts for FY15- FY19 period.
Attachment 8.17	**Type 5 and 6 metering RAB**	Explains the process we used to establish the Type 5 and 6 metering services RAB.
Attachment 8.18	**Forecast capex for Type 5 & 6 metering**	Includes all data relevant to establishing forecasts for capital expenditure and includes data relating to metering configurations, volume forecasts for new and replacement meters, proactive and reactive meters, results of survey data for meters failing sample testing.

[18] www.aer.gov.au/node/11483

Attachment 8.19	**Type 5 and 6 metering PTRM**	Calculates the capital return and tax for Type 5 & 6 metering services
Attachment 8.20	**Type 5 & 6 metering pricing model**	Incorporates the outputs of the Type 5 and 6 metering services PTRM, includes forecast operating expenditure and calculates revenue requirements and prices. It also includes the calculations that form the basis of determining the proposed; i. Exist fees, and ii. Upfront prices for Type 5 and Type 6 meters.
Attachment 8.21	**Energeia review of Ausgrid's metering tariff arrangements 2014-19 - April 2014**	Energeia's findings following a review of our proposed approaches, methodologies and resulting proposal for Types 5 and 6 metering services.
Attachment 8.25	**Options for alternative control services true up mechanism**	Describes options to account for under/over recovery in the 2014/15 transitional year.