8.01

# Ausgrid's metering services

Ausgrid

# Content

# 1 OVERVIEW OF METERING SERVICES

*With the commencement of the Power of Choice metering reforms, our customers now have the option to leave our type 5 and 6 metering service. This is by taking up a retailer offering inclusive of an advanced interval meter or 'smart meter'.*

*Our proposal reflects the efficient costs of continuing to operate our fleet of type 5 and 6 meters for customers who stay with our service. It also takes into account stakeholder views regarding how fast we should recover the capital costs associated with our legacy metering assets.*

## 1.1 Background

We own and operate over 2 million type 5 and 6 meters. Of these meters, type 5 are more advanced. Whereas a type 6 meter only records electricity consumption over a period of time, a type 5 meter can record both how much and, importantly, when electricity is used (in no greater than 30 minute intervals). Type 5 meters are often called "interval" meters. Type 6 meters are often called "accumulation" meters.

Up until 30 June 2015, the capital cost of providing a type 5 or 6 meters to our customers was funded in full by Ausgrid at the time of installation. Those capital costs were then added to an asset base and recovered gradually through levying charges on our customers. Our proposal seeks to continue this approach of recovering past capital costs. This is by applying the Australian Energy Regulator's (AER's) preferred structure of metering charges (see Section 5).

In addition to the recovery of our past capital costs, our type 5 and 6 metering proposal includes an operating expenditure (opex) forecast. Among other things, this opex forecast relates to the cost of performing regular, usually quarterly, manual meter readings. Our opex forecast for type 5 and 6 metering services is set out in Section 4.

## 1.2 New arrangements

Our proposal takes into account the Power of Choice metering reforms introduced by the Australian Energy Market Commission (AEMC).

Under previous arrangements, the National Electricity Rules (the Rules) designated local service network providers (LNSPs), such as Ausgrid, to be the 'Responsible Person' for type 5 and 6 metering installations. The effect of this was that no other party, besides Ausgrid, could be responsible for arranging the installation, provision and maintenance of type 5 and 6 meters within our local network service area. We also had sole responsibility for the collection, processing and delivery of data produced by our type 5 and 6 meters.

The AEMC's Power of Choice metering reforms amend these arrangements. The key change these reforms introduce is the transfer of the role and responsibilities formerly performed exclusively by LNSPs, to a new Registered Participant known as a Metering Coordinator. Unlike before, any person can become a Metering Coordinator, subject to meeting certain registration requirements. This is intended to facilitate competition in the provision of metering services and promote the take up of more advanced technology.

Our 2019-24 proposal is consistent with the Power of Choice metering reforms. This includes transitional Rules which provide that an electricity distributor that was acting as the Responsible Person for type 5 and 6 metering installations immediately prior to the commencement date of the new arrangements (1 December 2017) will become the 'initial

Metering Coordinator' at that connection point. Once an initial Metering Coordinator, an electricity distributor remains in this role until there is a new appointment made at the site, or the AER ceases to classify the provision of type 5 and 6 metering services as a direct control service.

In practice, the transitional provisions mean that Ausgrid will remain responsible for a substantial population of type 5 and 6 meters. This population is likely to decline over the course of the next regulatory control period as customers take up retailer offerings inclusive of an advanced meter. However, up until our role at an existing type 5 and 6 metering installation is extinguished at a site, we will have the same obligations under the Rules, with some exceptions, of a Metering Coordinator.

## 1.3 Proposed prices

Our proposal applies the price cap control mechanism the AER specified for alternative control type 5 and 6 metering in its final framework and approach (F&A) paper.

To develop our proposed price caps, we have applied the 'building block approach'. This involved forecasting the revenue required to deliver type 5 and 6 metering services over the 2019-24 regulatory period. Table 1 sets out this aspect of our proposal. Table 2 contains our proposed prices that have been calculated using our forecast building block revenue requirement.

***Table 1. Proposed building block costs ($m, nominal)***

| | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | Total |
|---|---|---|---|---|---|---|
| Return on capital | 13.9 | 13.1 | 12.0 | 10.9 | 9.7 | 59.7 |
| Return of capital | 18.1 | 19.8 | 21.5 | 23.2 | 23.2 | 105.8 |
| Opex | 24.4 | 23.9 | 23.1 | 21.9 | 20.4 | 113.7 |
| Benchmark tax liability | 0.5 | 0.7 | 0.8 | 1.2 | 1.4 | 4.5 |
| Total | 57.0 | 57.5 | 57.4 | 57.2 | 54.7 | 283.7 |

***Table 2. Proposed type 5 and 6 annual metering charges ($ nominal)***

| | | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 |
|---|---|---|---|---|---|---|
| Residential inclining block | Non-capital | 10.24 | 11.22 | 12.30 | 13.47 | 14.76 |
| | Capital | 15.25 | 15.63 | 16.02 | 16.42 | 16.83 |
| Transitional residential <2MWh | Non-capital | 10.24 | 11.22 | 12.30 | 13.47 | 14.76 |
| | Capital | 15.25 | 15.63 | 16.02 | 16.42 | 16.83 |
| Residential ToU | Non-capital | 26.48 | 29.01 | 31.78 | 34.82 | 38.14 |
| | Capital | 16.98 | 17.40 | 17.84 | 18.28 | 18.74 |
| Controlled load | Non-capital | 0.86 | 0.94 | 1.03 | 1.13 | 1.24 |
| | Capital | 8.47 | 8.68 | 8.90 | 9.12 | 9.35 |
| Small business inclining block | Non-capital | 10.57 | 11.58 | 12.69 | 13.90 | 15.23 |
| | Capital | 23.32 | 23.90 | 24.50 | 25.11 | 25.74 |
| Small business ToU | Non-capital | 26.24 | 28.74 | 31.49 | 34.50 | 37.80 |
| | Capital | 16.20 | 16.61 | 17.02 | 17.45 | 17.88 |
| LV 40-160Mwh ToU | Non-capital | 46.69 | 51.16 | 56.04 | 61.40 | 67.27 |
| | Capital | 21.10 | 21.62 | 22.16 | 22.72 | 23.29 |

| | | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 |
|---|---|---|---|---|---|---|
| Residential transitional ToU | Non-capital | 26.48 | 29.01 | 31.78 | 34.82 | 38.14 |
| | Capital | 16.98 | 17.40 | 17.84 | 18.28 | 18.74 |
| Business tariff ToU | Non-capital | 26.24 | 28.74 | 31.49 | 34.50 | 37.80 |
| | Capital | 16.20 | 16.61 | 17.02 | 17.45 | 17.88 |
| Generator tariff | Non-capital | 2.72 | 2.98 | 3.27 | 3.58 | 3.92 |
| | Capital | 8.74 | 8.96 | 9.19 | 9.42 | 9.65 |
| 15-40 MWh consumption | Non-capital | 26.48 | 29.01 | 31.78 | 34.82 | 38.14 |
| | Capital | 16.98 | 17.40 | 17.84 | 18.28 | 18.74 |

We have proposed separate capital and non-capital charges for the provision of type 5 and 6 metering services. This is consistent with the charging structure the AER last approved for Ausgrid. Our approach to pricing is set out in greater detail in Section 5.

In terms of financial modelling, we have applied the same pricing model the AER used at our last determination for the development of type 5 and 6 prices. This model is provided at Attachment 8.03 (Metering PTRM and Pricing Model).

# 2 METERING ASSET BASE

*Our metering assets once formed part of our total regulatory asset base (RAB) for standard control services. This was until our last regulatory determination where the AER reclassified type 5 and 6 metering services as an alternative control service and established a standalone metering asset base (MAB). We propose to maintain this unbundling.*

## 2.1 MAB roll forward

We have calculated an opening MAB as of 1 July 2019 of $218.2 million ($, nominal).

Our proposed opening MAB value is broken down by asset category in Table 3 below. To develop this aspect of our proposal, we have applied the approach the AER specified in our last determination. This involved rolling forward the MAB using forecast, as opposed to actual, depreciation.[1] We have also adjusted for actual capital expenditure (capex) incurred in the 2015-19 period and capital contributions.

***Table 3. Opening MAB at 1 July 2019 ($m, nominal)***

| Asset | Opening MAB |
|---|---|
| Type 6 meter population ^ | 89.88 |
| Type 5 meter population ^ | 108.88 |
| Furniture, fittings, plant and equipment | 1.20 |
| Land (non-system) | (3.38) |
| Other non-system assets | 0.67 |
| IT systems | 8.58 |
| Motor vehicles | 1.00 |
| Buildings | 10.97 |
| Equity raising costs | 0.43 |
| **Total** | **218.23** |

^ In our proposed metering PTRM our 'Type 5 meter population' is termed 'Customer metering (digital)' and our Type 6 meter population is termed 'Customer metering and load control'.

Most of the capex we have incurred in the 2015-19 regulatory period which has been rolled into our MAB relates to meter replacements. As the responsible person for type 5 and 6 meters up until the commencement date of the Power of Choice metering reforms, Ausgrid was under a regulatory obligation to ensure that our customers had a working meter at their connection point. This meant that we were required to replace failed type 5 and 6 meters up until those reforms commenced on 1 December 2017.

We were not given a capex allowance for new type 5 and 6 meters from 1 July 2015. From this date, our customers paid for the capital cost of a new meter in full at the time of its installation. This was in accordance with the AER's approval of upfront charges for new meters in our 2015-19 regulatory determination. For the purposes of rolling forward our MAB, we have treated revenue from the provision of new meters as a capital contribution.

[1] AER, Ausgrid final decision 2015-19, April 2015, p. 16–33.

# 3 CAPITAL COSTS

*We are not forecasting to spend any capex on new or replacement meters. Our capital costs proposal is limited to the recovery of past capex associated with our MAB. Following consultation with stakeholders we have decided to not apply an accelerated rate of capital cost recovery.*

## 3.1 Forecast capital expenditure

We forecast no direct type 5 and 6 metering capex in the 2019-24 regulatory period.

Under the Power of Choice metering reforms, Ausgrid will remain the initial metering coordinator for our existing fleet of type 5 and 6 meters. We, however, are no longer responsible for installing new meters or replacing them when they fail. As a result, Ausgrid will not incur – and is not proposing to recover – any direct metering capex for the provision of type 5 and 6 meters in the 2019-24 regulatory control period.

It should be noted that although we do not forecast any direct capex, we will still incur indirect capital costs. At our next regulatory determination, we will allocate these indirect capital costs to our opening MAB value as of 1 July 2024, in accordance with our approved cost allocation methodology (CAM).

## 3.2 Depreciation

We propose to apply a non-accelerated rate of depreciation applied to our MAB.

Ausgrid considered applying an accelerated rate of capital cost recovery. However, following consultation with stakeholders we have decided against that option. Our proposed rate of depreciation, compared against the accelerated rate which we consulted on, is set out in Table 4.

***Table 4. Asset lives for our proposed opening MAB***

| | Opening MAB ($m, nominal) | Remaining life (years) | |
|---|---|---|---|
| | | Accelerated depreciation | Proposed depreciation |
| Type 6 meter population ^ | 89.88 | 7.5 | 10.04 |
| Type 5 meter population ^ | 108.88 | 7.5 | 9.53 |
| Furniture, fittings, plant and equipment | 1.20 | 11.99 | 11.99 |
| Land (non-system) | (3.38) | 5.0 | 5.0 |
| Other non-system assets | 0.67 | 5.25 | 5.25 |
| IT systems | 8.58 | 4.29 | 4.29 |
| Motor vehicles | 1.00 | 5.41 | 5.41 |
| Buildings | 10.97 | 13.27 | 13.27 |
| Equity raising costs | 0.43 | 10.0 | 10.0 |
| **Total** | **218.23** | **-** | **-** |

^ In our proposed metering PTRM our 'Type 6 meter population' is termed 'Customer metering (mechanical/electromechanical)' and our Type 5 meter population is termed 'Customer metering digital'.

# 4 OPERATING EXPENDITURE

*Consistent with our role as 'initial metering co-ordinator' we will remain responsible for a substantial fleet of type 5 and 6 meters in the forthcoming regulatory period.*

*To forecast the cost of operating these meters, we have applied a 'base, step, trend' approach. When trending forward the base we have applied an output adjustment that accounts for diminishing returns to scale associated with a declining number of Ausgrid metering customers.*

## 4.1 Base operating expenditure

We propose a base level of opex of $15.58 per type 5 and 6 metering customer ($, real FY19).

To develop our base level of opex we have adopted the approach the AER took in forecasting our metering opex requirement in our 2014-19 determination. This involved determining our metering opex base on a per customer basis.

In applying this forecasting method, we have used a 'revealed costs' approach which takes into account five years of our most recent metering opex (2013/14 to 2017/18). Table 5 sets out this calculation. It shows that over the last five years our type 5 and 6 metering opex per customer has averaged $15.58 ($, real FY19). We propose that this opex per customer should be our 'base'.

***Table 5. Base level of opex using multi-year approach ($, real FY19)***

| | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | Average |
|---|---|---|---|---|---|---|
| Opex per customer | 19.10 | 13.50 | 14.49 | 15.24 | 15.58 | 15.58 |

^ Estimated type 5 and 6 metering opex per customer. Ausgrid will update 2017-18 amounts with 'actuals' in our final decision.

Using an average of five years of costs to develop our base is consistent with how the AER last assessed our metering opex. In our 2014-19 determination, the AER reasoned that this 'multi-year' approach was more robust than using a single year. It stated:

> *By taking multiple (five) 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 services* [2]

We conclude that our proposed base of $15.58 per customer ($, real FY19) is reflective of our efficient costs in the 2019-24 regulatory period. In developing this aspect of our proposal, we have applied the AER's 'per customer' forecasting method and test revealed amount using the same benchmarking approach utilised by the AER in our last determination.

## 4.2 Step changes

Ausgrid does not propose any step changes to our proposed base level of opex.

[2] AER, *Final decision: Ausgrid distribution determination 2015-19*, April 2015, p. 16-57.

## 4.3 Trend

To arrive at our forecast opex allowance, we trended forward the base we have calculated over the forthcoming regulatory period.

### 4.3.1 Customer numbers

Our base level of metering opex was calculated to be $15.58 per customer ($, real FY19). To trend this forward, we have multiplied that amount by our forecast volume of customers.

Table 6 sets out this calculation. It shows that our annual opex falls year on year by incorporating our expected customer churn due to the Power of Choice metering reforms. This leads to a total metering opex in the forthcoming period of $82.4 million ($, real FY19). More information about how we have forecast our metering customer numbers is set out in Section 6 below.

***Table 6. Calculation of opex with expected customer churn***

| | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/-24 | Total |
|---|---|---|---|---|---|---|
| Base opex per customer ($, real FY19) | 15.58 | 15.58 | 15.58 | 15.58 | 15.58 | - |
| Forecast Customer numbers | 1,302,002 | 1,180,002 | 1,058,002 | 936,002 | 814,002 | - |
| Annual opex ($, real FY19) | 20,286,041 | 18,385,201 | 16,484,362 | 14,583,522 | 12,682,682 | 82,421,808 |

### 4.3.2 Real price growth

Our proposal adjusts for forecast real price changes in our metering labour costs.

Table 7 sets out our proposed escalation. It shows that we have applied a 'weighted' labour cost escalator to our annual opex forecast calculated by trending forward our base. The weighting we applied assumes that our metering opex is made up of a 59:41 ratio of labour to non-labour costs.

***Table 7. Opex forecast adjusted for labour price changes ($2018-19)***

| | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | Total |
|---|---|---|---|---|---|---|
| Unadjusted opex ($, real FY19) | 20,286,041 | 18,385,201 | 16,484,362 | 14,583,522 | 12,682,682 | 82,421,808 |
| Weighted labour cost escalator (%) | 0.52 | 0.82 | 1.04 | 1.03 | 0.80 | - |
| Adjusted opex ($, real FY19) | 20,507,718 | 18,737,916 | 16,974,856 | 15,172,447 | 13,299,876 | 84,692,814 |

Source: BIS Oxford, Attachment RIN09.

We have applied the same labour cost escalators and weighting to our proposed metering opex as we have applied to our standard control services opex proposal. Taking a consistent approach across general network and metering services is appropriate given that we are forecasting real price changes of a common input; namely, labour.

When we adjust for real price changes in our labour costs, we calculate a required type 5 and 6 metering of $84.7 million ($, real FY19). More information about our real cost escalation proposal is set out at attachment RIN09 (Cost escalation report).

### 4.3.3 Output adjustments

We have adjusted our opex forecast for an expected loss of output in the next period.

By the end of the 2019-24 regulatory period, we forecast that more than 800,000 Ausgrid metering customers will have switched to a retail offering inclusive of an advanced meter.

More information about our forecast volume of customer churn is set out in Section 6. In percentage terms, it is equal to about 50% of our type 5 and 6 metering customers leaving our service. This is relative to customers in 2016-17.

With such a substantial decline in our customer base, Ausgrid anticipates our productivity to change. This is as a result of a loss of economies scale associated with providing a decreasing volume of services.

**Drivers of productivity change**

As our customers leave our type 5 and 6 metering service as a result of the Power of Choice reforms, we consider there to be two specific drivers of productivity change:

- The nature of our information technology (IT) and supporting asset costs
- A substantial increase in the unit cost of conducting our scheduled meter reading.

With respect to our IT and supporting assets, the operating costs involved are highly fixed. That is, they do not vary with the volume of type 5 and 6 metering customers we service. As our customers decline in the 2019-24 regulatory control period, this will drive a change in productivity. That is, the same volume of inputs associated with our fixed IT and supporting assets will produce a lower number of outputs.

In terms of our scheduled meter reading, productivity will change as travel times between conducting a single read increases. The Commonwealth Department of Environment and Energy acknowledged that this would occur. In its Smart Grid, Smart City report it also linked this increase in travel times with higher costs, stating that 'as the number of smart meters grows over time due to increases in customer led deployment, the cost of manually reading customer meters also increases (due to declining numbers of spinning disc meters)'.[3]

The AER, too, has acknowledged the relationship between longer travel times and higher metering opex. In our last determination, the AER benchmarked our type 5 and 6 metering proposal using our 'opex per customer' as a partial performance indicator. In applying this benchmarking approach, the AER normalised its results using customer density. It was reasoned:

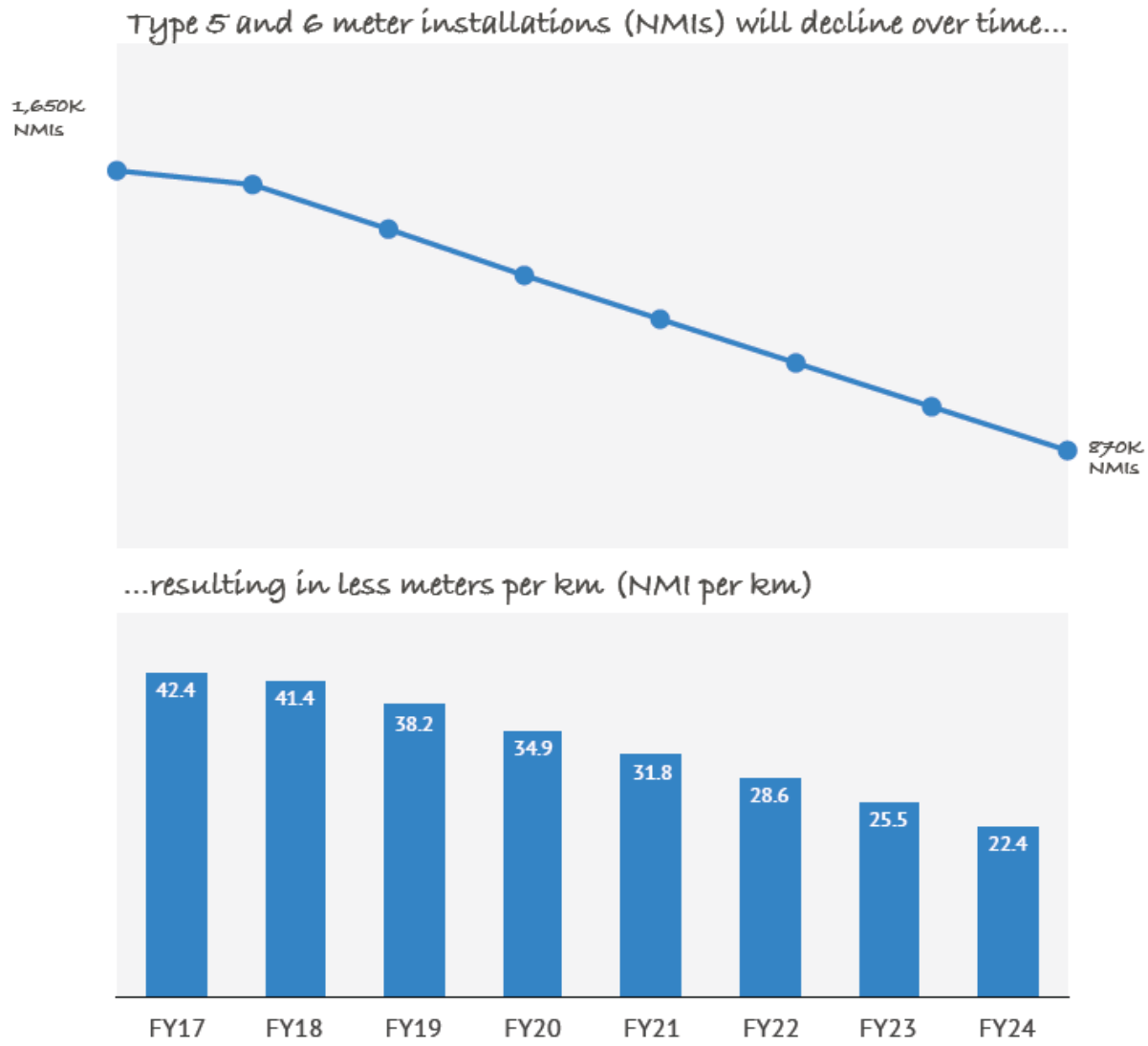
> *When comparing Ausgrid's proposed opex to its peers, we normalised our results by accounting for customer density. We calculated this as the number of customers a distribution business has per kilometre of line length. We took customer density into account because, all things equal, businesses with a low customer density are likely to require higher opex. For example, this could be because of longer travel times to service customers*[4]

Taking this into consideration, we expect that by the end of the 2019-24 regulatory period our customer density will almost halve.

Figure 1 shows that, in 2016-17, Ausgird had approximately 1.65 million national meter identifiers (NMIs) in our local network service area, with 42.4 NMIs per kilometre of line length. By the end of the forthcoming period, this is forecast to decline to about 870 000 NMIs with just 22.4 metering customers per kilometre of line length.

[3] Department of Environment and Energy, *Smart Grid, Smart City: Shaping Australia's Energy Future*, July 2014, p. 196.
[4] AER, *Final decision: Ausgrid's 2014-19 regulatory proposal*, April 2015, p. 15-56

***Figure 1. Our forecast customer density with less metering customers***




In response to this lowering in customer density, our opex should be adjusted. This is because, and as previously acknowledged by the AER, 'businesses with a low customer density are likely to require higher opex'.[5]

**Method for calculating output adjustment**

To adjust the loss of efficiencies associated with our forecast decline in our metering customers, we have applied an output adjustment to our forecast opex requirement.

This output adjustment was developed using both a 'bottom up' and 'top down' approach. The latter involved an econometric assessment of the relationship between changes in meter population and meter reading opex, compiled from publicly available RIN responses. The same size that has been used to perform this analysis is statistically robust, incorporating 88 data points, and included information from a total of 10 electricity distributors in the NEM.

Both the bottom up and top down analysis used to derive our proposed output adjustment was developed by Sankofa Consulting. Its full report has been provided at Attachment 8.04.

[5] AER, *Final decision: Ausgrid's 2014-19 regulatory proposal*, April 2015, p. 15-56

In summary, Sankofa Consulting observed that for every 1% decrease in meter volume a resultant 0.72% increase in metering opex occurs.[6] Table 8 applies Sankofa's recommended productivity adjustment factor.

***Table 8. Forecast type 5 and 6 metering opex requirement ($2018-19)***

| | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | Total |
|---|---|---|---|---|---|---|
| Labour price adjusted opex ($, real FY19) | 20,507,718 | 18,737,916 | 16,974,856 | 15,172,447 | 13,299,876 | 84,692,814 |
| Productivity adjustment (%) | 15.79 | 21.06 | 26.32 | 31.58 | 36.85 | - |
| Proposed opex ($, real FY19) | 23,711,632 | 22,609,210 | 21,313,452 | 19,778,266 | 17,972,841 | 105,385,401 |

The $105.4 million listed in Table 8 above is our total proposed metering opex for the 2019-24 regulatory period. It incorporates our forecast volume of customers, an allowance for real price changes in labour, and output adjustment. This amount has been used to forecast type 5 and 6 metering prices in the 2019-24 regulatory period.

[6] Attachment 9.1.3, Sankofa Consulting, *Diseconomies of scale in meter* reading, January 2018, p.33.

# 5 PRICING APPROACH

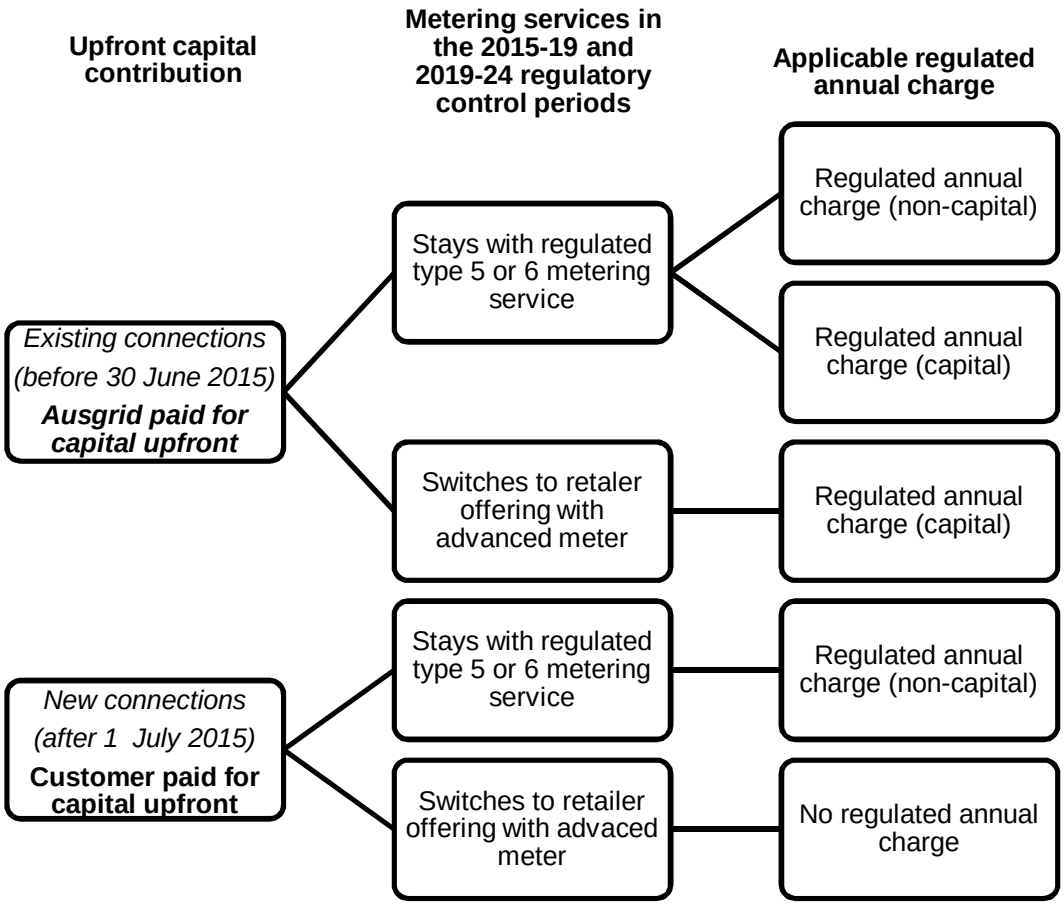
Our proposal utilises the structure of metering charges the AER last approved for us. In this section, we outline that structure and how it will apply in the 2019-24 regulatory period.

## 5.1 Structure of metering charges

To give effect to the AER's metering tariff structure, we have proposed metering charges comprising of two components: a capital component and a non-capital component.

In Figure 2 below, we have reproduced a diagram that the AER included in our last regulatory determination to show how these two components relate to different metering customers.

***Figure 2. Structure of metering charges***




Under this charging structure, the capital and non-capital components of our type 5 and 6 metering fees recover different streams of our 'building block' revenue:

***Table 9. Proposed building block revenue ($ million, nominal)***

| Charge | Building block revenue | |
|---|---|---|
| Capital component | MAB recovery[7] | Tax allowance |
| Non-capital component | Type 5 and 6 metering opex | |

[7] The MAB is largely the undepreciated value of our population of type 5 and 6 meters.

## 5.2 Before 30 June 2015 customers

The AER's structure of metering charges requires a customer who has had a type 5 or 6 meter provided by Ausgrid before 30 June 2015 to pay the following:

- Capital (MAB recovery and tax allowance) component
- Non-capital (opex) component.

If these customers leave our type 5 and 6 metering service, they are no longer required to pay the non-capital component. They will nonetheless still be required to pay the capital component after they have switched.

The rationale behind the requirement to continue paying the capital component after a customer has left our type 5 and 6 metering services lies with how we have recovered our capital costs.

Prior to 30 June 2015, this involved Ausgrid funding the full capital cost of a meter on the behalf of our customers. These costs were then rolled in an asset base (our MAB) and gradually recovered over time through levying metering charges.

The AER's charging structure, which we have applied, ensures that this cost recovery process will not be disturbed by the AEMC's reforms expanding contestability in the provision of metering services. It does this by allocating our building block revenue from the depreciation of our MAB to the capital component of our annual metering charges.

We agree with the AER that this approach is 'the most appropriate way to recover metering capital costs incurred in providing regulated metering services that risk becoming stranded if a customer switches [to a retail offering that includes an advanced metering service]'.[8] We have accordingly applied this charging structure in our 2019-24 regulatory proposal.

## 5.3 After 30 June 2015 customers

Where a customer received a type 5 or 6 meter from Ausgrid after 30 June 2015, they are only required to pay the non-capital (opex) component.

Customers who received a new meter after 30 June 2015 from Ausgrid do not pay the capital component of our type 5 and 6 metering charges. This is because these customers were required to pay for the capital cost of their meter upfront at time of installation.

The capital cost associated with their meter is therefore isolated from our MAB, with the consequence that they pay no MAB recovery costs.

If a customer who received a meter from Ausgrid after 30 June 2015 switches to a retailer offering inclusive of an advanced meter, then they no longer pay the non-capital component of our charges too.

[8] AER, *Ausgrid final decision 2015-19*, April 2015, p. 16-30.

# 6 FORECAST CUSTOMERS

We are forecasting a decline in the number of our type 5 and 6 metering customers over the 2019-24 regulatory control period. Our forecast is set out in Table 10 and Table 11. The assumptions we have applied to inform this forecast are outlined in Table 12.

Sankofa Consulting was engaged by Ausgrid to review the reasonableness of our forecast decline in metering customers. This assessment – which includes a review against the market-led rollout of advanced meters in New Zealand – is set out in Sankofa Consulting's report at Attachment 8.04.

***Table 10. Forecast change in Ausgrid's type 5 and 6 meter population***

| | EOFY17 | EOFY18 | EOFY19 | EOFY20 | EOFY21 | EOFY22 | EOFY23 | EOFY24 |
|---|---|---|---|---|---|---|---|---|
| New and upgraded meters installed | | 7,243 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conversion of solar bonus scheme sites | | (8,667) | 0 | 0 | 0 | 0 | 0 | 0 |
| Reactive replacement of faulty type 5/6 meters | | (6,000) | (12,000) | (12,000) | (12,000) | (12,000) | (12,000) | (12,000) |
| Proactive replacements to be completed in 2015-19 | | (37,895) | (75,790) | (6,316) | 0 | 0 | 0 | 0 |
| Advanced meter deployments by retailers | | (56,000) | (70,000) | (134,166) | (140,000) | (140,000) | (140,000) | (140,000) |
| New meter upgrades from 1 December 2017 | | (10,000) | (20,000) | (20,000) | (20,000) | (20,000) | (20,000) | (20,000) |
| **Remaining meter population** | **2,300,753** | **2,179,434** | **2,001,644** | **1,829,163** | **1,657,163** | **1,485,163** | **1,313,163** | **1,141,163** |

***Table 11. Forecast change in Ausgrid's type 5 and 6 metering customers (NMIs)***

| | EOFY17 | EOFY18 | EOFY19 | EOFY20 | EOFY21 | EOFY22 | EOFY23 | EOFY24 |
|---|---|---|---|---|---|---|---|---|
| New and upgraded meters installed | | 18,107 | | | | | | |
| Conversion of solar bonus scheme sites | | (18,667) | | | | | | |
| Reactive replacement of faulty type 5/6 meters | | (6,000) | (12,000) | (12,000) | (12,000) | (12,000) | (12,000) | (12,000) |

| | EOFY17 | EOFY18 | EOFY19 | EOFY20 | EOFY21 | EOFY22 | EOFY23 | EOFY24 |
|---|---|---|---|---|---|---|---|---|
| Proactive replacements to be completed in 2015-19 | | (31,579) | (63,158) | (5,263) | | | | |
| Advanced meter deployments by retailers | | (40,000) | (50,000) | (95,833) | (100,000) | (100,000) | (100,000) | (100,000) |
| New meter upgrades from 1 December 2017 | | (5,000) | (10,000) | (10,000) | (10,000) | (10,000) | (10,000) | (10,000) |
| **Remaining NMI population** | **1,668,119** | **1,560,256** | **1,425,098** | **1,302,002** | **1,800,002** | **1,058,002** | **936,002** | **814,002** |

***Table 12. Summary of assumptions informing Ausgrid's type 5 and 6 meter population***

| | Description | Assumption |
|---|---|---|
| New & upgraded meters installed | Ausgrid remained responsible for customers having a working meter within our local service network area up until 1 December 2017 | Based on historical rates, we have assumed 18 107 new or upgraded NMIs will be installed by Ausgrid in the period between 1 July to 30 November 2017. We will update for actual new/upgraded meters in our revised proposal. |
| Conversion of solar bonus scheme sites | The Solar Benefit Scheme (SBS) closed on 31 December 2016. From this date, former SBS participants had a significant financial incentive to install a new meter.[9] This is in order to switch from gross to net metering. | Our assumed volume of SBS churn is based on historical rates of customers switching to a retail offering inclusive of an advanced meter capable of recording 'net' energy consumption. |
| Reactive replacement of faulty type 5/6 meters | Following the commencement of the Power of Choice metering reforms, our type 5 and 6 meters will continue to be reactively replaced.<br>Reactive replacements occur when an individual meter fails in service; for example, due to physical damage. | Our reactive meter replacement of type 5 and 6 meters has historically averaged 12,000 MNIs per year.<br>We have trended forward this historical average to forecast the volume of faulty type 5 and 6 meters which will be reactively replaced with advanced equivalents in the forthcoming period. The AER has previously accepted reactive replacements based on an average of historical volumes.[10] |

[9] http://www.resourcesandenergy.nsw.gov.au/energy-consumers/solar/solar-bonus-scheme/the-solar-bonus-scheme-is-closed

[10] AER, *Ausgrid final decision 2015-19*, April 2015, p. 16-56.

| | Description | Assumption |
|---|---|---|
| Proactive replacement to be completed in 2015-19 | Metrology procedures administered by AEMO require our meters to be subject to regular sample testing.<br>Where a statistically significant sample of meters belonging to a make/model fail accuracy standards, AEMO's metrology procedures require the entire family within that make/model to be proactively replaced. | The AER approved the proactive replacement of 255 487 NMIs in our 2015-19 determination.<br>We were unable to complete this full program due to the responsibility for replacing meters switching to the contestable market from 1 December 2017.<br>Of our approved program, 100,000 NMIs have yet to be replaced. We have assumed that they will be replaced with advanced meters by the new responsible parties.<br>There are no forecast new meter type failures forecast for replacement in the 2019-24 regulatory period. |
| Advanced meter deployments by retailers | Customers now have the opportunity to take up a retail offering inclusive of an advanced meter. When this occurs the Ausgrid meters installed at the customer's premises are removed. | Our assumptions have been independently reviewed by Sankofa Consulting and found to be robust. |
| New meter upgrades from 1 December 2017 | Our customers will continue to require meter upgrades. This may be, for example, when they install solar PV. When such upgrades occur, the existing Ausgrid meters are replaced. | Based on historical rates, we have assumed 10 000 NMI upgrades will take place each year. |