

Attachment 29.3

**SA Power Networks:
ACS Metering Tariff Development
Methodology**

October 2014





ACS Metering Tariff Development Methodology

Alternative Control Services

27 October 2014

SA Power Networks

www.sapowernetworks.com.au

TABLE OF CONTENTS

1 Executive summary 3

2 Overview..... 3

3 Key Policies and Assumptions 4

 3.1 Customer Classification.....4

 3.2 Pricing Structure 5

 3.3 Capitalisation 5

 3.4 Cost Allocation 5

 3.4.1 Annual Metering Charges..... 5

 3.4.2 Ad hoc charges 6

 3.5 Smart-ready Metering Solution 6

 3.6 Meter Reading 6

4 Forecasts..... 6

 4.1 Capital expenditure.....6

 4.1.1 New Connections 7

 4.1.2 Meter Replacements 8

 4.1.3 Meter Upgrades 8

 4.2 Operating expenditure..... 9

 4.2.1 Meter Reading..... 9

 4.2.2 Meter Maintenance 10

 4.2.3 Meter Data Services 11

5 Revenue Requirement 11

 5.1 ACS Metering Pricing Model RFM Tab..... 12

 5.2 ACS Metering Pricing Model PTRM Tab..... 12

6 Transfer and Exit Fees 12

7 Annual Metering Charges..... 13

 7.1 Cost Reflective to Final Charges..... 13

1 EXECUTIVE SUMMARY

This Appendix provides an overview of SA Power Networks' Alternative Control Services (**ACS**) Metering Pricing Model (**MPM**). The MPM was developed to model SA Power Networks' ACS metering prices for the 2015-20 regulatory control period (**RCP**), in accordance with the Australian Energy Regulator's (**AER**'s) building blocks approach.

This Appendix documents the key policies and assumptions underpinning the MPM, relating to customer classification, pricing strategy, capitalisation, cost allocation and meter reading. It also describes SA Power Networks' forecast meter capital expenditure and operating expenditure, including volumes and unit costs, for the 2015-20 RCP as key inputs into the model.

In summary, SA Power Networks' approach was to develop a pricing model that allocates forecast metering expenditure and the Metering Asset Base (**MAB**) through a Roll Forward Model (**RFM**) and Post-Tax Revenue Model (**PTRM**), based on the AER's approach, to generate the annual revenue requirement (**ARR**) for ACS metering services. Metering prices, reflecting each service's estimated cost to serve, are then set to recover the ARR.

The MPM also generates the basis for cost reflective prices for metering services including meter provision and installation services, and for transfer and exit fees to be applied to customers who may transfer to an alternative provider if competition is introduced into Type 5 and 6 metering services.

SA Power Networks ACS pricing proposal incorporates four key models:

- SA Power Networks' MPM, which was developed to:
 - Provide the basis for cost reflective ACS metering services prices for the 2015-20 RCP, in accordance with the AER's building block approach;
 - Provide a simplified PTRM and RFM model to test and validate metering prices; and to
 - Derive the capital expenditure and operating expenditure inputs into SA Power Networks' Submission Expenditure Model (**SEM**) and PTRM models. ;
- SA Power Networks' ACS SEM, which allocates business overheads, applies real input cost escalation, and provides relevant inputs to the RFM and PTRM;
- SA Power Networks' ACS RFM, which rolls forward the MAB and provides relevant inputs to the PTRM; and
- SA Power Networks' ACS PTRM, which generates the ACS ARR in nominal terms.

This Attachment provides information about SA Power Networks' ACS MPM, which is provided as an attachment to our Regulatory Proposal.

2 OVERVIEW

The ACS MPM is comprised of various input and outputs sheets. The input sheets are:

- **Assumptions** – this tab records the values and sources of the key assumptions relating to metering operating activities, financing, overheads, etc. that are used in other sheets of the model.
- **Meter Cost, MAMP and RIN** – these tabs provide additional data and calculations that are used to support the output sheets.

The outputs sheets in the MPM are:

- **Forecast WC** – this tab contains the metering capital expenditure and operating expenditure, volumes and unit costs for Type 5-6 whole current (**WC**) meters for the current and forecast

regulatory control period. This includes new, upgraded and replacement meter installations and meter reading, maintenance and energy data services information.

- **Forecast CT** – this tab contains metering capital expenditure and operating expenditure, volumes and unit costs for Type 1-4 Current Transformer (CT) and Type 5-6 CT metering for the current and forecast regulatory control period. This includes new, upgraded and replacement meter installations and meter reading, maintenance and energy data services information.
- **RFM** – this tab replicates the AER’s RFM by calculating the roll forward asset value of SA Power Networks’ MAB for the Type 5-6 WC, Type 5-6 CT and Type 1-4 CT metering categories, based on forecast metering capital expenditure and depreciation for each year of the 2015-20 RCP.
- **PTRM** – this tab replicates the AER’s PTRM by calculating the forecast revenue requirement for Type 5-6 WC, Type 5-6 CT and Type 1-4 CT metering for each year of the 2015-20 RCP, based on metering operating expenditure, regulatory depreciation, return and tax.
- **Pricing** – this tab calculates annual charges for metering provision, and charges for new and upgraded (additions and alterations) metering service orders, based on forecast annual revenue requirements and services volumes for the 2015-20 RCP.
- **T_Capex, T_Opex, T_PTRM, T_ExitFee and T_Pricing** – these tabs provide summary output tables of SA Power Networks’ forecast metering capital expenditure and operating expenditure, services volumes, MAB, revenue requirement and metering prices.

3 KEY POLICIES AND ASSUMPTIONS

The key policies and assumptions underpinning SA Power Networks’ ACS MPM, relating to customer classification, pricing strategy, capitalisation, cost allocation and meter reading are detailed below.

3.1 Customer Classification

Based on a review of existing ACS metering tariffs and cost drivers, SA Power Networks determined that ACS metering customers should continue to be classified according to the type of installed metering, and that the existing tariff structure was appropriate.

The forecast volume of Type 5-6 WC, Type 5-6 CT and Type 1-4 “Exceptional” CT metering services are shown in Table 1 below.

Table 1 – Number of customers by meter type

Customer Classification	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Type 5-6 WC Meter	823,433	823,786	828,786	835,416	842,046	849,298	856,088	862,932	869,832	876,786
Type 5-6 CT Meter	2,548	3,040	2,351	2,311	2,271	5,545	5,545	5,545	5,545	5,545
Type 1-4 CT Meter	746	553	524	498	472	420	420	420	420	420

The forecast number of customers with Type 5-6 WC meters have been generated based on the current customer population (as of 30 June 2014), SA Power Networks’ forecast of new customer growth of 0.8% per year.

The increase in Type 5-6 CT Meters for 2015/16 is due to the inclusion of Type 5 CT meters (previously a negotiated service) in ACS. The forecast of flat growth for customers with Type 1-6 CT meters is based on the current customer population and the simplifying assumption that there will be neither new connections for CT metering nor customer churn during the RCP. The assumption regarding meter churn is discussed in our Regulatory Proposal and is reflected in our treatment of transfer and exit fees described later in this document.

3.2 Pricing Structure

SA Power Networks' metering pricing structure includes annual metering charges, ad hoc charges and transfer fees. The basis of each of these pricing types is described below:

- **Annual metering charges** – based on the annual cost of providing the smart-ready metering service and a legacy charge associated with the regulatory depreciation and return on historical ACS metering assets. Annual metering charges are thus cost reflective.
- **Ad hoc charges** – these charges apply on an ad hoc basis where a customer requires a meter alteration or addition (i.e. a meter upgrade). These charges are 'user pays' in that the customer pays up front in the form of a capital contribution that is cost reflective. Different ad hoc charges apply for Single Phase meters, Single Phase plus Controlled Load meters and Three Phase meters, based on a weighted average of metering costs for these meter types.
- **Transfer fees** – a number of new transfer and exit fees have been developed for customers who choose to move to another metering provider given that competition is expected to be introduced for the provision of Type 5 and 6 metering services in South Australia. Two new transfer fees and one new exit fee have been developed to recover all of the relevant costs associated with the change of meter provider:
 - Transfer Fee Type 5-6 WC Smart-ready Meter (1ph);
 - Transfer Fee Type 5-6 WC Smart-ready Meter (3ph); and
 - Exit Fee Type 5-6 WC Standard Meter.

3.3 Capitalisation

SA Power Networks proposes to continue to capitalise new and replacement metering installations. Expenditure associated with new and replacement meters is therefore included in the RFM sheet and added to the roll forward value of the MAB.

Consistent with the AER's new Framework and Approach for SA Power Networks' (**F&A**), it is proposed that meter upgrades (alterations and additions) will be paid for by customers. (This consistent with SA Power Networks' current approach.) The installation costs for metering upgrades are therefore included in SA Power Networks' forecast metering capital expenditure for the 2015-20 RCP, however they are completely offset by capital contributions in the PTRM.

3.4 Cost Allocation

3.4.1 Annual Metering Charges

SA Power Networks has developed annual metering prices for Type 5-6 WC, Type 5-6 CT and Type 1-4 Exceptional CT by allocating the return on investment in and return of capital on the MAB and the forecast costs associated with the provision of metering for each of these customer categories.

The MAB and metering capital expenditure and operating expenditure for each customer category is passed through the RFM and PTRM tabs, respectively, to generate the revenue requirement and ultimately annual metering charges.

3.4.2 Ad hoc charges

SA Power Networks has developed different ad hoc charges for Single Phase, Two Element and Three Phase meter services. In generating these prices, SA Power Networks has allocated costs according to the weighting of costs associated with provision of different meter service orders. The weighting is based on the following:

- Meter equipment and installation costs for single phase, two element and three phase meter services; and
- The relative proportion (%) of single phase, two element and three phase meter services.

3.5 Smart-ready Metering Solution

SA Power Networks' new policy to install smart-ready meters for small customers requiring a new or replacement meter, is aligned with the proposed policy by the South Australian Department of State Development (DSD) (formerly the Department of Manufacturing, Innovation, Trade, Resources and Energy).

DSD has proposed a new policy in which small customers requiring a new or replacement meter will have a smart-ready meter installed by default. The policy provides the option for customers to opt-out of having a smart-ready meter installed if they choose to exercise the right to have a traditional accumulation meter installed instead.

3.6 Meter Reading

In the current RCP, SA Power Networks read meters on quarterly and monthly cycles, with the majority of meters read on a quarterly basis. SA Power Networks is proposing a change in this policy for the 2015-20 RCP as a result of the introduction of capacity tariffs from 2017/18. In order for capacity tariffs to be effective, meters with maximum demand capability are required and must be read on a monthly basis.

To avoid the high unit cost associated with monthly reading of voluntary opt-in tariff customers only, SA Power Networks proposes to read all meters on a monthly basis from 2017/18.

4 FORECASTS

This section describes SA Power Networks' forecast meter capital expenditure and operating expenditure, including volumes and unit costs, for the 2015-20 RCP.

4.1 Capital expenditure

SA Power Networks is proposing ACS metering capital expenditure of \$46m [REDACTED] [REDACTED] for the 2015-20 RCP, as shown in Table 2 below. As meter alterations and additions are user pays, they are not included in this metering capital expenditure forecast.

Table 2 – Forecast ACS metering capital expenditure for the 2015-20 RCP (\$m, Dec 2014 excluding input cost escalation and business overheads)

Customer Classification	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Type 5-6 WC Meter	█	█	█	█	█	█	█	█	█	█
Type 1-6 CT Meter	N/A	N/A	N/A	N/A	N/A	█	█	█	█	█

The change in Type 5-6 WC metering capital expenditure from the 2010-15 RCP to the 2015-20 RCP is largely driven by the reclassification of Type 5 metering, an increase in the unit costs for new meter installations, and an increase in planned corrective replacements. The historical and forecast meter capital expenditure, including volumes and unit costs, for new connections, meter replacements and upgrades are presented in more detail in sections 4.1.1 to 4.1.3 below.

4.1.1 New Connections

Table 3 below details the new meter unit costs and volumes in SA Power Networks' ACS MPM.

Table 3 – New meter volumes and unit costs for the 2015-20 RCP (\$m, Dec 2014 before input cost escalation and business overheads)

Customer Classification	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Unit Costs										
Type 5-6 WC	█	█	█	█	█	█	█	█	█	█
Volumes										
Type 5-6 WC	█	█	█	█	█	█	█	█	█	█

The unit costs for Type 5-6 WC meters are based on a weighted average of SA Power Networks' meter equipment, the meter mix, on-costs and installation labour costs. The historical volumes for new installations were extrapolated from historical data used for the RIN for 2010/11 to 2012/13. The volumes for 2013/14 and 2014/15 were estimated based on an average of the historical and forecast volumes. The forecast volume of new installations is based on a forecast performed by BIS Shrapnel.

Table 4 details the historical and current meter mix for which the average new installation costs for Type 5-6 WC have been generated.

Table 4 – Historical and forecast meter and installation costs (\$Dec 2014 before input cost escalation and business overheads) and meter mix

Meter Type	2010-15			2015-20		
	Meter	Installation	Weighting	Meter Cost	Installation	Weighting
Single Element	█	█	█	█	█	█
Two Element	█	█	█	█	█	█
Three Phase	█	█	█	█	█	█

The forecast meter cost increases over the current period as the new meters are smart-ready, the prices of which are based on the latest 2014/15 metering quotes. The meter mix for the 2015-20 period is assumed to remain the same as the historical period.

4.1.2 Meter Replacements

Table 5 below details the meter replacement unit costs and volumes in SA Power Networks' ACS MPM.

Table 5 – Meter replacement unit costs for the 2010-15 and 2015-20 RCPs (\$Dec 2014 before input cost escalation and business overheads)

Replacement	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Type 5-6 WC: Reactive Meter Replacement	■	■	■	■	■	■	■	■	■	■
Type 5-6 WC: Corrective Meter Replacement	■	■	■	■	■	■	■	■	■	■
Type 1-6 CT: Corrective Meter Replacement	I	■	■	■	■	■	■	■	■	■

The unit costs for SA Power Networks meter replacement program were sourced from SA Power Networks' Metering Asset Management Plan (MAMP)¹ using a weighted average of the different replacement types. The forecast unit cost for a reactive service is lower than a meter install for a corrective maintenance as only 50% of reactive services result in the replacement with a new meter.

Prior to 2015/16 all WC meter replacements are Type 6. The historical costs for Type 5-6 WC meter replacements are based on the historical lower price per meter (refer to Table 4). The values for CT meters in Table 5 and the relevant volumes in Table 6 are weighted averages reflecting changing weights, which results in a fluctuating unit rate being shown in Table 6.

Table 6 – Meter replacement volumes for the 2010-15 and 2015-20 RCPs

Replacement	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Type 5-6 WC: Reactive Meter Replacement	■	■	■	■	■	■	■	■	■	■
Type 5-6 WC: Corrective Meter Replacement	■	■	■	■	■	■	■	■	■	■
Type 1-6 CT: Meter Replacement	I	■	■	■	■	■	■	■	■	■

The volumes for SA Power Networks meter replacement program were sourced from the MAMP. The volumes for CT replacements have been split between the Type 1-4 CT and the Type 5-6 CT metering services from the MAMP based on the apportionment of the total costs for each service.

4.1.3 Meter Upgrades

Table 7 below details the meter upgrade unit costs and volumes in SA Power Networks' ACS MPM.

¹ SA Power Networks, (2014), Metering Asset Management Plan Summary – Capital Plan 2014-2025.

Table 7 – Meter upgrade volumes and unit costs (\$Dec 2014 before input cost escalation and business overheads) for the 2015-20 RCP

Upgrade Type	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Unit Costs										
Type 5-6 WC	■	■	■	■	■	■	■	■	■	■
Volumes: Type 5-6 WC										
Solar PV	■	■	■	■	■	■	■	■	■	■
Service Alterations	■	■	■	■	■	■	■	■	■	■
Tariff Policy and Customer Opt-In	I	I	I	I	I	■	■	■	■	■

The unit costs for upgrades are based on SA Power Networks’ costs for a new ‘smart-ready’ meter install (refer to Table 4).

The volumes of solar installations for 2010/11-2013/14 are sourced from SA Power Networks’ current solar PV customer numbers. Solar PV installation volumes for 2014/15-2019/20 are based on an independent review undertaken by Energeia. The forecast for annual solar PV installations for 2014/15-2019/20 reflects a reduction compared to the previous period, attributed to the removal of government subsidies.

The service alteration volumes are based on historical averages of 0.18% of meter sites.

In addition SA Power Networks expects a significant number of customers to require a meter upgrade as a result of voluntarily opting in to the monthly maximum capacity tariff. SA Power Networks has forecast that in 2016-17 and 2017/18, 1,000 customers will require meter upgrades each year in order to take up capacity tariffs. We then forecast a significant increase in uptake by customers opting in to capacity tariffs from 2017-18 when the tariff will be subject to broader retailer support, and additional publicity, support materials and customer education as to the benefits of the tariff.

4.2 Operating expenditure

This section details and explains SA Power Networks’ forecast volumes, unit costs and expenditure used in the ACS MPM for metering operating activities. SA Power Networks’ historical and forecast operating expenditure for the ACS metering service are shown in Table 8 below.

Table 8 – Forecast ACS metering operating expenditure for the 2015-20 RCP (\$m, Dec 2014 before input cost escalation and business overheads)

Meter Type	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Type 5-6 WC	■	■	■	■	■	■	■	■	■	■
Type 1-6 CT	■	■	■	■	■	■	■	■	■	■

The increase of the operating expenditure in the 2015-20 period compared to the current 2010-15 period is largely due to the move from quarterly read meters to monthly read meters and the increased installation of Type 5 meters, with the associated increases in data volumes.

4.2.1 Meter Reading

Table 9 below details the meter reading unit costs and volumes in SA Power Networks ACS MPM.

Table 9 – Meter reading volumes and unit costs for the 2010-15 and 2015-20 RCPs (\$Dec 2014 before input cost escalation and business overheads)

Customer Classification	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Unit Costs (\$ per year)										
WC/CT Type 6	████	████	████	████	████	████	████	████	████	████
WC/CT Type 5	N/A	N/A	N/A	N/A	N/A	████	████	████	████	████
Type 1-4 CT	████	████	████	████	████	████	████	████	████	████
Volumes										
Type 6 WC	██████	██████	██████	██████	██████	██████	██████	██████	██████	██████
Type 5 WC	N/A	N/A	N/A	N/A	N/A	████	████	████	████	████
Type 1-4 CT	██	██	██	██	██	██	██	██	██	██
Type 5-6 CT	██████	██████	██████	██████	██████	██████	██████	██████	██████	██████

The unit costs up to and including 2016/17 are based on SA Power Networks’ historical meter reading costs of four quarterly reads per customer per year.

In 2017-18, SA Power Networks proposes to move to monthly reading for all sites, leading to a decrease in Type 5 WC reading costs as these meters will no longer require the more expensive special meter read. Type 5 meter reading costs remain slightly higher than Type 6 WC meter reading due to the increased complexity of the read.

The forecast volumes for Type 6 WC sites declines as the number of Type 5 WC read sites increase.

4.2.2 Meter Maintenance

Table 10 below details the meter maintenance unit costs and volumes in SA Power Networks’ ACS MPM.

Table 10 – Meter maintenance unit costs for the 2010-15 and 2015-20 RCPs (\$Dec 2014 before input cost escalation and business overheads)

Maintenance Type	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Type 5-6 WC: Maintenance	██████	██████	██████	██████	██████	██████	██████	██████	██████	██████
Type 1-6 CT: Maintenance	N/A	N/A	N/A	N/A	██	██	██	██	██	██

The unit costs for maintenance activities are based on a weighted average of SA Power Networks’ meter testing and investigations costs from the MAMP, which have been calculated to comply with the relevant Australian Standards.

Table 11 below details the meter maintenance volumes in SA Power Networks’ ACS MPM.

Table 11 – Meter maintenance volumes for the 2010-15 and 2015-20 RCPs

Customer Classification	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Type 5-6 WC: Maintenance	■	■	■	■	■	■	■	■	■	■
Type 1-6 CT: Maintenance	N/A	N/A	N/A	N/A	■	■	■	■	■	■

The volumes for Type 5-6 WC meter maintenance for 2010/11-2012/13 are sourced from data used from SA Power Networks' RIN for meter testing and investigations, with the value for 2013-14 an estimate based on the total meter population and historical values.

The volumes for Type 5-6 WC meter maintenance for 2010/11-2013/14 are also sourced from the RIN. The forecast WC meter maintenance activities are sourced from SA Power Networks' MAMP and calculated to comply with the relevant Australian Standards in accordance with the Australian Energy Market Operator's MAMP requirements. The volumes for CT maintenance have been split between the Type 1-4 CT and the Type 5-6 CT metering services from the MAMP based on the apportionment of the total costs for each service.

4.2.3 Meter Data Services

Table 12 below details the meter data services unit costs and volumes in SA Power Networks' ACS MPM.

Table 12 – Meter data services volumes and unit costs for the 2015-20 RCP (\$Dec 2014 before input cost escalation and business overheads)

Meter Type	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Unit Costs (\$ per year)										
Type 6 WC	■	■	■	■	■	■	■	■	■	■
Type 5 WC	N/A	N/A	N/A	N/A	N/A	■	■	■	■	■
Volumes										
Type 6 WC	■	■	■	■	■	■	■	■	■	■
Type 5 WC	N/A	N/A	N/A	N/A	N/A	■	■	■	■	■

The unit costs and volumes for Type 6 WC meters up to 2015/16 are based on SA Power Network's historical energy data services information that includes back office staff, data processing and validation. As Type 5 WC meters were previously not part of ACS we have not attempted to calculate historical unit costs. From 2017/18, when all sites move to becoming monthly read (and Type 5 WC meters are read in greater volume) there is an increase in the unit costs for data services. As the relative number of CT meters is small, the volumes of data for CT metering are small, so the associated data costs are assumed negligible and not separated out of the WC metering service.

5 REVENUE REQUIREMENT

This section describes how the "modelled" revenue requirement is developed in SA Power Networks' ACS MPM to be used in the development of the basis for the cost reflective tariffs.

The MPM's (simulation) RFM and PTRM tabs are used only in respect of the development of a modelled annual revenue requirement. The simulation RFM and PTRM in the MPM are not used in

the development of capital and operating expenditure outputs that flow to SA Power Networks' ACS capital expenditure and operating expenditure SEMs.

As noted above, SA Power Networks' proposed annual revenue requirement is developed in the ACS SEMs and PTRM. The ACS capital expenditure and operating expenditure SEMs take capital and operating expenditure before business overheads and input cost escalation from the ACS MPM. Capital and operating expenditures including business overheads and input cost escalation then flow from the ACS SEMs, through to the ACS PTRM.

SA Power Networks' forecast annual revenue requirement is detailed in SA Power Networks Regulatory Proposal.

5.1 ACS Metering Pricing Model RFM Tab

Assets in the SA Power Networks' RFM are depreciated by meter type in accordance with the remaining lives outlined in Table 13 below.

Table 13 – Opening MAB and asset lifetimes by metering category

Asset Type	Opening MAB	Remaining Life	Standard Lifetime
Type 5-6 WC Meters	\$78.0m	10	15
Type 5-6 CT Meters	\$3.6m	10	15
Type 1-4 CT Meters	\$0.0m	N/A	N/A

The outputs of the RFM are depreciation and the rolled forward value of the MAB, which are used to calculate regulatory depreciation and return on assets the PTRM.

5.2 ACS Metering Pricing Model PTRM Tab

The simulation PTRM generates the annual revenue requirement for each of the Type 5-6 WC, Type 5-6 CT and Type 1-4 CT meter categories, based on forecast operating expenditure, regulatory depreciation, return and tax.

The metering operating expenditure in the PTRM for each of the Type 5-6 WC, Type 5-6 CT and Type 1-4 CT meter categories is as detailed above in section 4.2 of this Appendix.

The return in the PTRM is calculated based on an estimate of the Weighted Average Cost of Capital (WACC) of 7.75% per annum.

Tax is calculated in the PTRM using the following estimates: a cost of debt of [REDACTED], a cost of equity of [REDACTED], a WACC of [REDACTED], a corporate tax rate of [REDACTED] and imputation credits of [REDACTED].

6 TRANSFER AND EXIT FEES

As discussed in our Regulatory Proposal, SA Power Networks has assumed zero meter provision customer churn, and steady state meter provision customer growth during the next RCP.

Rather than make spurious forecasts of customer churn in an environment of unprecedented uncertainty, SA Power Networks has developed three new meter transfer and exit fees.

- Transfer Fee Type 5-6 WC Smart-ready Meter (1ph);
- Transfer Fee Type 5-6 WC Smart-ready Meter (3ph); and
- Exit Fee Type 5-6 WC Standard Meter.

These fees are designed to keep SA Power Networks whole by recovering all of the relevant costs associated with customers churning to an alternative metering provider.

SA Power Networks will also continue to apply its existing meter exit fees in respect of Type 1-4 exceptional and Type 6 CT meters.

It is proposed that the two Smart-ready Transfer Fees would only apply to churning customers that had been 'free-issued' their meter at the time of a new connection or a replacement. Customers that had contributed to the cost of their meter upgrade would not be charged the higher Smart-ready Transfer fee, but would be charged the Standard Meter exit fee.

The fee for each of these three meter types has been calculated based on the asset value, fixed charges and administration costs. Fixed charges refer to the costs that SA Power Networks would still incur after customers churn to alternative metering providers, including IT and data management. Fixed costs also include a proportion of Type 5 and 6 meter reading costs that are assumed to be fixed in the medium term due to contractual arrangements. Administration costs are associated with the billing and collection of transfer and exit fees, and the transfer of the customer to the alternative metering provider in SA Power Networks' systems.

The proposed transfer and exit fees are set out in SA Power Networks' Regulatory Proposal.

7 ANNUAL METERING CHARGES

Annual metering charges have been developed for each of the Type 5-6 WC, Type 5-6 CT and Type 1-4 Exceptional CT meter categories, based on the allocation of the annual revenue requirement calculated for each meter type, divided by the number of services on that meter type.

Annual charges for meter installations, and in respect of transfer and exit fees, have been developed on a cost build-up approach.

As described in earlier sections of this Attachment, the ACS MPM was used to develop "draft" cost reflective tariffs for all relevant metering services, expressed in December 2014 dollars, excluding business overheads and real input cost escalation (which is applied in the ACS SEMs).

These tariffs have been used as the basis for the tariffs that will recover the ARR that is the output of the ACS PTRM.

The process applied to transition from draft cost reflective tariffs to final tariffs for our Regulatory Proposal is set out below.

The proposed annual metering charges are documented in SA Power Networks' Regulatory Proposal.

7.1 Cost Reflective to Final Charges

As described above, the MPM develops cost reflective tariffs that are expressed in December 2014 dollars excluding business overheads and real input cost escalation (**base tariffs**). For simplicity, the MPM applies the assumptions noted above that are representative of those expected to be used in our Regulatory Proposal even if they are not exactly the same.

As set out in the Final Pricing tab of the MPM, the following steps have been undertaken to transition from these cost reflective modelled base tariffs to final tariffs as set out in our Regulatory Proposal. These steps are set out in SA Power Networks' MPM on the Final Pricing tab.

Steps

1. Calculate the net present value (**NPV**) of the unsmoothed revenue requirement provided by the ACS PTRM.
2. Where relevant, shape the base tariffs.

- a. The shaped tariff for the Type 1-4 Exceptional meter provision service reflects the RCP average of the relevant base tariffs, plus a fixed estimate of the asset costs attributable to these meters not otherwise derived in the MPM.
 - b. The shaped tariff for the Type 5-6 CT meter provision reading and data service reflects the RCP average of the relevant base tariffs.
 - c. The shaped tariff for the Type 5-6 WC meter provision reading and data service reflects the following:
 - i. The tariff for 2015/16 was set to ensure that the final tariff for that year reflected a real P_0 adjustment of zero.
 - ii. The path for subsequent periods was goal sought to deliver a smoothed annual revenue requirement for ACS with an NPV exactly matching that calculated in Step 1.
 - d. Tariffs for the installation of Smart Ready meters were not shaped.
 - e. Tariffs for the existing exit fees (Type 1-4 Exceptional, and Type 6 CT):
 - i. For 2015/16, these tariffs were set equal to the relevant exit fee for 2014/15.
 - ii. The path for subsequent periods was set to reduce by ██████████ per annum thereafter, reflecting the price path for the new transfer and exit fees as noted in Step 2.f.
 - f. Tariffs for the new transfer and exit fees (Transfer Type 5-6 WC Smart Ready 1-phase and 3-phase meters, and Exit Type 5-6 Standard Meter):
 - i. The compound annual growth rate of the RCP average annual price change for these base tariffs was found to be approximately ██████████.
 - ii. For 2015/16, these tariffs were set equal to the relevant base tariff.
 - iii. The path for subsequent periods was set to reduce by ██████████ per annum thereafter.
 - g. The "tariff" for other meter provider customers was set to zero for all periods.
3. Set out the expected volumes of each service for each year of the next RCP.
- a. The volumes applicable to meter provision tariffs (Type 5-6 WC meter provision reading and data service, Type 5-6 CT meter provision reading and data service, and Type 1-4 Exceptional meter provision service) are based on data used in SA Power Networks' annual pricing proposal for 2014/15, adjusted for the inclusion of relevant meter services customers that are negotiated distribution services until July 2015.
 - i. Type 5-6 WC meter provision reading and data service customer volumes are forecast to grow at a constant growth rate of 0.08%.
 - ii. Type 1-4 Exceptional meter provision service, Type 5-6 CT meter provision reading and data service, and Other Meter Provider service customer volumes are not forecast to change over the RCP, consistent with our assumption regarding meter churn noted in section 6 above.
 - b. The volumes applicable to meter upgrade installation services (Installation Type 5-6 WC Smart Ready Manually Read Meter (3 phase) services, Installation Type 5-6 WC Smart Ready Manually Read Meter (1 phase) services, Installation Type 5-6 WC Smart Ready Manually Read Meter (1 phase, 2 element) services) were based on the total upgrade volumes forecast in the MPM apportioned by reference to historical proportions of single phase, single phase two element, and three phase installations.

- c. The volumes applicable to Installation Type 5-6 CT Smart Ready Manually Read Meter (3 phase) services were assumed to be zero, but a tariff was developed just in case.
 - d. The volumes applicable to exit and transfer fees were assumed to be zero, , consistent with our assumption regarding meter churn noted in section 6 above.
4. Calculate meter service tariffs that when applied to the volumes set out in Step 3, deliver a smoothed annual revenue requirement for ACS with an NPV exactly matching that calculated in Step 1.
 - a. Estimate a factor to be applied annually to all tariffs that will reflect the business overhead, input cost escalation and CPI outcomes delivered by the ACS SEMs and PTRM.
 - i. It was found that a compounding factor of [REDACTED] per annum delivered an outcome approximately equal to the business overhead, input cost escalation and CPI outcomes delivered by the ACS SEMs and PTRM.
 - b. Estimate a factor to be applied to relevant tariffs that will reflect the benchmark tax liability outcome delivered by the ACS PTRM.
 - i. A factor of [REDACTED] was derived by estimating the proportion of the total RCP ARR that is represented by the total RCP benchmark tax liability, both as delivered by the ACS PTRM.
 - ii. This factor was applied to relevant tariffs – the Type 5-6 WC meter provision reading and data service tariffs and the Smart Ready meter installation tariffs.
5. Calculate the capital offset component relating to installation services that will otherwise be recovered by customer contributions.
 - a. The only component of installation services tariffs relevant to the ARR calculation is the CPI and benchmark tax liability impacts provided by the PTRM. Thus the component of the tariff representing direct costs, business overheads and real input cost escalation is offset.
6. Calculate the total annual revenue provided by the tariffs calculated in Step 4 applied to relevant volumes set out in Step 3, net of the capital offset component calculated in Step 5 where relevant.
7. As noted in Step 2.c.ii, goal seek the price path for Type 5-6 WC meter provision reading and data service tariffs of for years 2-5 of the RCP to deliver a smoothed annual revenue requirement for ACS with an NPV exactly matching that calculated in Step 1.