

Metering

Metering Annuity Model Procedure

13 May 2011

Version 2.0

Aurora Energy

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1 Introduction

Metering services are those services provided with respect to the provision, installation and maintenance of standard meters and associated services provided to non-contestable customers. This includes the metering services provided using type 5 – 7 metering installations in Aurora's role as Metering Provider and Meter Data Provider.

Metering services excludes:

- Meter Data Provider services for type 1 – 4 metering installations, which are proposed to be unregulated;
- Meters provided by Aurora Retail to provide pay as you go services, which are proposed to be unregulated; and
- Metering to a standard in excess of that required for the billing of customer services, which are proposed to be quoted (non-standard) services.

The control mechanism for metering services in the current Regulatory Control Period is a price cap with the charges for metering services established using an annuity approach (Metering Annuity Model), which outlines a cap on the maximum daily meter allowance for each meter class.

Aurora proposes to apply a price cap form of control for the forthcoming Regulatory Control Period to all metering services based on the current annuity approach.

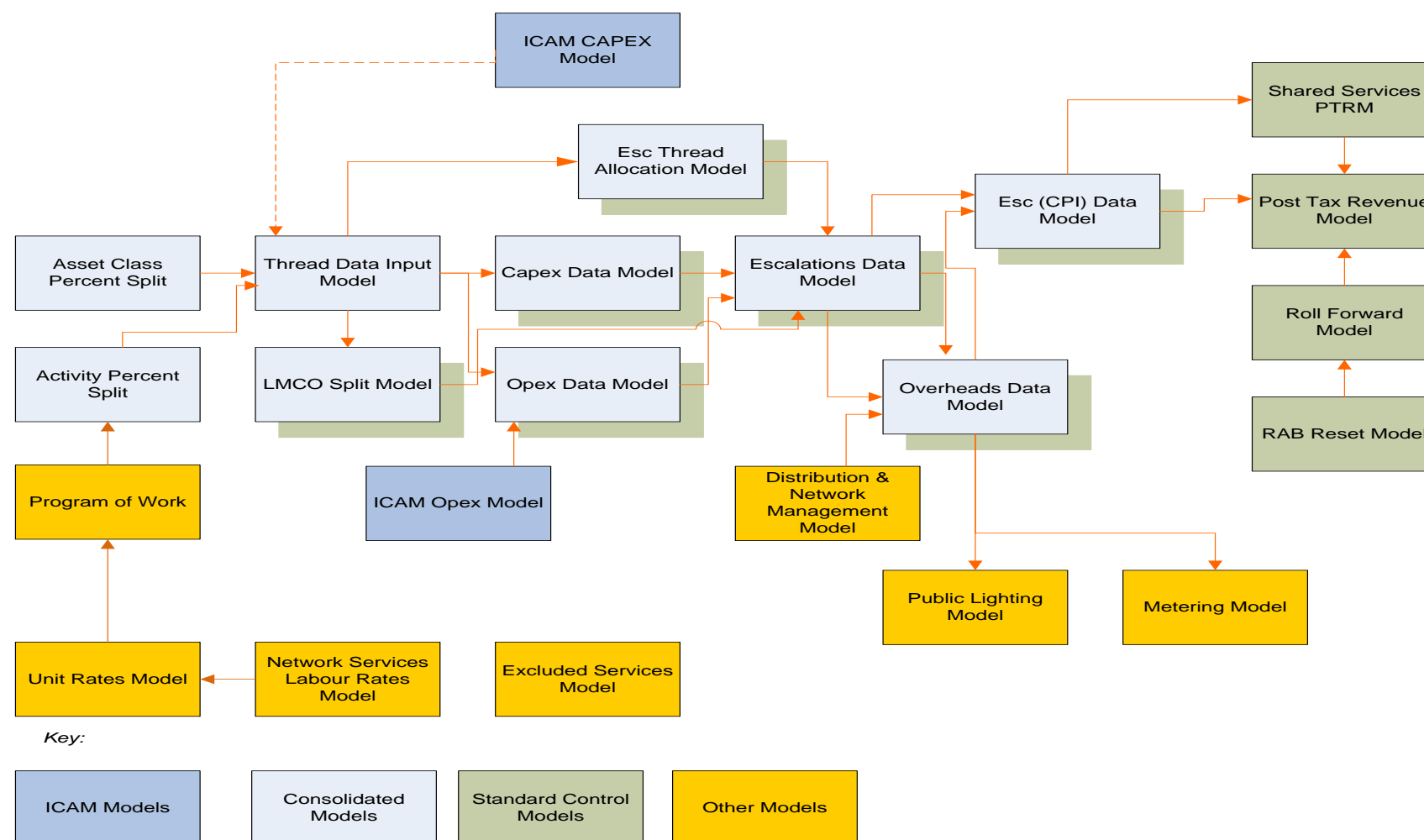
2 Purpose

The purpose of this document is to provide an overview of the Metering Annuity Model and the annuity calculation methodology used to determine the maximum daily meter allowance for each meter class.

3 Modeling Architecture

The Metering Annuity Model is a component model combined with a number of additional excel-based models which in total comprise Aurora's Regulatory Modelling Suite, the model interactions and the entire suite is depicted in Figure 1 (below).

Figure 1



A flow diagram of the Metering Annuity Model depicting inputs, workbook interaction and data flow is presented in Figure 2 (below).

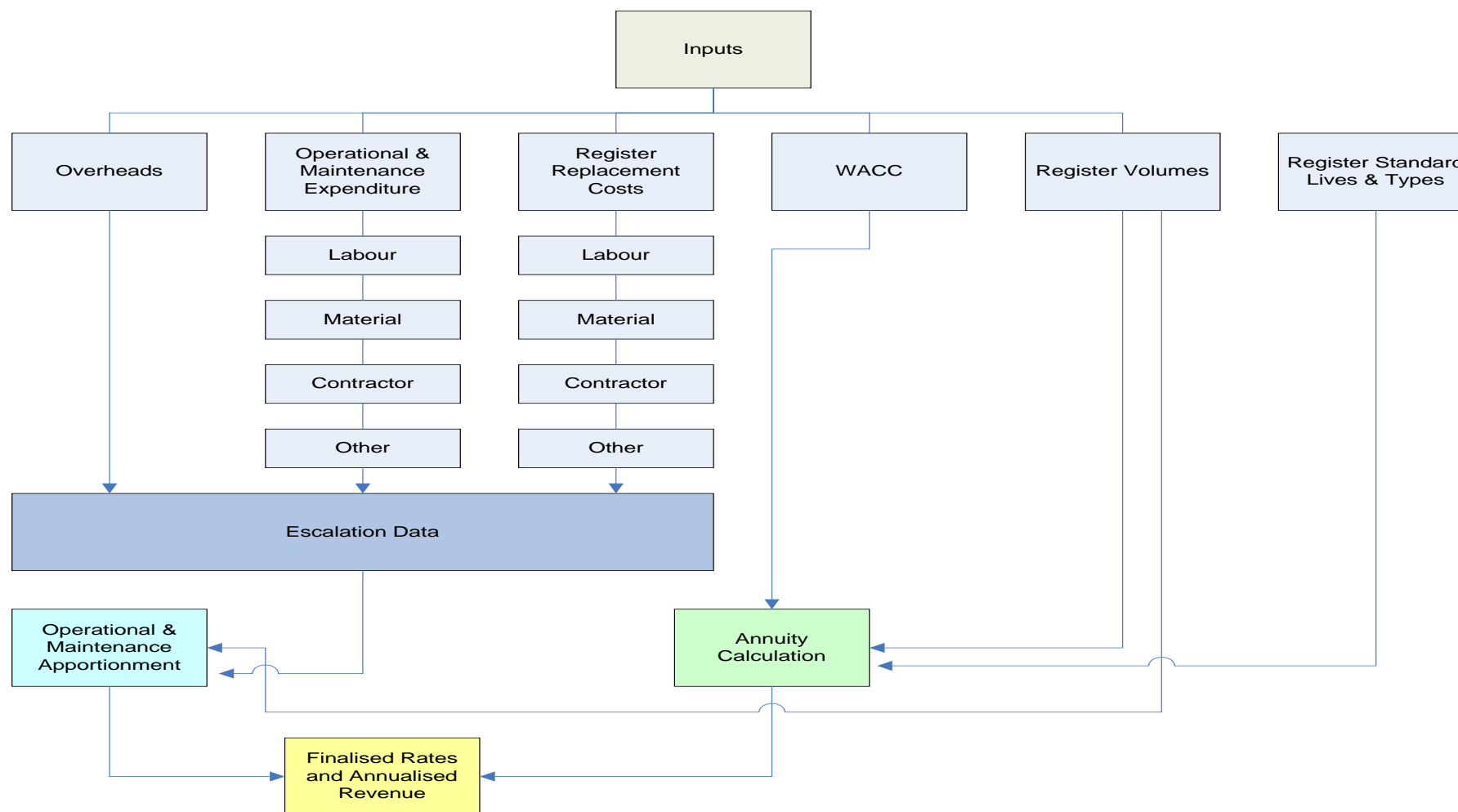
Essentially there are a number of components which comprise the Metering Annuity Model suite, these include:

- Input sheets;
- Overhead allocation sheets;
- Escalated rates sheets;
- Annuity Calculation sheets; and
- Annuity Summary and Annual Revenue.

The following sections describe the individual Excel-worksheet based component models as depicted in Figure 2.

Figure 2

METERING ANNUITY MODEL FLOW DIAGRAM



4 Inputs

The forecast costs for metering services for the forthcoming Regulatory Control Period have been developed with regard to the level of service currently provided by Aurora, including timeframes and conditions.

The forecast costs for metering services for the forthcoming Regulatory Control Period are based on Aurora maintaining its existing service levels, in compliance with its regulatory obligations.

The following inputs form the basis of the metering services annuity calculations.

4.1 Register Volumes

Aurora has developed replacement volumes for each meter type with regard for any likely volume growth over the forthcoming Regulatory Control Period.

4.2 Standard Lives

Aurora maintains a register of asset data that is used to determine the standard life of each asset. This is input into the annuity calculation to derive the number of years over which the replacement cost is recovered.

4.3 Operating Expenditure Forecasts

Aurora's program of work is used to forecast operating expenditure volumes associated with metering services.

4.4 Overhead Cost Allocation

The operating expenditure component of Corporate and Shared Services; Network Management; and Distribution Business Shared Resource costs are apportioned on a percentage spend of direct costs, in accordance with Aurora's amended Cost Allocation Method (CAM).

4.5 Capital Overhead Cost Component

The capital overhead cost component is apportioned in accordance with the methodology in Aurora's amended CAM.

4.6 Escalation Rates

Input data provided for calculation purposes within the public lighting annuity model has been provided using forecast 2009-10 values. Accordingly costs are increased across the Regulatory Control Period by:

- Forecast CPI in order to calculate nominal costs; and

- Escalation rates (using SKM escalation rates) which are applied by asset type for capital expenditure, and by discrete cost type (materials, contractors, labour and other) for operating expenditure.

4.7 Return on Capital

The return on capital is a pre-tax real WACC derived using the values outlined in Chapter 20 of Aurora's Regulatory Proposal.

5 Annuity Calculation

Aurora proposes to apply a price cap form of control for the forthcoming Regulatory Control Period to all metering services. The control mechanism will be an annuity approach that sets a cap on the maximum daily meter allowance for each meter class. This is consistent with the current regulatory approach adopted by OTTER and with the AER's stated likely approach for the forthcoming Regulatory Control Period.

The annuity approach is based on meter replacement cost, operating expenditure (predominantly meter reading costs), capital expenditure and an allocation of overhead costs.

The annuity approach:

- Undertakes an annuity calculation for each meter type for each year using the Excel-based PMT function in which:
 - The replacement cost of each meter type is the present value parameter (this is escalated across the Regulatory Control Period using materials escalation rates);
 - The asset standard life is the number of years parameter; and
 - A pre-tax real WACC provides the rate of return parameter;
- Estimates operating expenditure associated with the maintenance of metering assets, this is predominantly the cost of meter reading. The associated costs are sourced from Aurora's program of work, which provides associated volumes, and Aurora's unit rates model which provides the relevant costs associated with each meter class. The relevant escalation rates across the Regulatory Control Period are applied prior to input into the Metering Annuity Model;
- Applies operating overhead costs (Corporate and Shared Services, Network Division Management and Distribution Business Shared Resource costs) to the operating expenditure component in accordance with the approach set out in Aurora's amended CAM. The relevant escalation rates across the Regulatory Control Period are already applied to this overhead expenditure prior to input into the Metering Annuity Model;
- Undertakes an annuity calculation for shared services capital overhead costs (comprising Corporate and Shared Services and Network Division Management capital overhead costs) in accordance with the methodology set out in Aurora's amended CAM, and apportioned to meter classes on the basis of forecast volumes.

The annuity calculation is undertaken for assets in service at 30 June 2012 and for capital overhead costs applied to metering services in the Regulatory Control in which;

- For overhead assets in service at 30 June 2012:
 - The written down book value of the assets is the present value parameter;
 - The remaining weighted average asset life is the number of years parameter; and
 - A pre-tax real WACC provides the rate of return parameter; and
- For capital overhead costs applied to metering services:
 - The applied capital overhead costs is the present value parameter;
 - The asset standard life is the number of years parameter; and

- A pre-tax real WACC provides the rate of return parameter;
- Aggregates the annuity calculations and operating expenditure (including overheads) for each meter class, which is then divided by the number of meters in a class, to give an average annual allowance for the metering class; and
- Divides the total by the number of days in the year to give a daily allowance for each metering class.

This process, for each meter class can be summarised as:

[(annuity for replacement costs including escalations) + (operating expenditure including operating overheads) + (annuity for overhead assets in service) + (annuity for capital overhead costs)] / (days in year)

6 Indicative Prices

The table below provides indicative prices for metering service by meter class for each year of the forthcoming Regulatory Control Period.

| Price per register per day - June 2012 \$'s | | | | | |
|---|---------|---------|---------|---------|---------|
| | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 |
| Business LV - Single Phase | 9.318 | 9.269 | 11.254 | 13.052 | 13.138 |
| Business LV - Multi Phase | 15.738 | 16.760 | 17.679 | 17.916 | 18.162 |
| Business LV - CT Meters | 22.837 | 23.906 | 24.818 | 24.942 | 25.316 |
| Domestic LV - Single Phase | 9.842 | 10.068 | 10.195 | 9.883 | 9.977 |
| Domestic LV - Multi Phase | 14.703 | 14.705 | 14.681 | 14.149 | 13.940 |
| Domestic LV - CT Meters | 26.521 | 26.575 | 26.577 | 25.892 | 25.601 |
| Other Meters | 15.172 | 15.303 | 15.338 | 14.859 | 14.664 |
| Business LV - Single Phase - Remote Read | 12.293 | 12.282 | 12.250 | 11.753 | 11.611 |
| Business LV - Multi Phase - Remote Read | 18.209 | 18.374 | 18.420 | 17.891 | 17.708 |
| Business LV - CT Meters - Remote Read | 24.749 | 24.889 | 24.927 | 24.298 | 24.071 |
| Domestic LV - Single Phase - Remote Read | 9.570 | 9.638 | 9.641 | 9.207 | 9.084 |
| Domestic LV - Multi Phase - Remote Read | 18.209 | 18.374 | 18.420 | 17.891 | 17.708 |
| Domestic LV - CT Meters - Remote Read | 24.749 | 24.889 | 24.927 | 24.298 | 24.071 |

7 Glossary

| Term | Definition |
|------|----------------------------------|
| AER | Australian Energy Regulator |
| WACC | Weighted Average Cost of Capital |
| ICAM | Indirect Cost Allocation Model |
| CAM | Cost Allocation Method |
| SKM | Sinclair Knight Merz |
| PAYG | Pay As You Go |

