Energy to the people

Aurora Energy Revised Regulatory Proposal 2012–2017

Aurora ENERGY

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1. Executive Summary

1.1. Introduction

On 31 May 2011, Aurora submitted its *Regulatory Proposal* to the Australian Energy Regulator (AER) for the *Regulatory Control Period* encompassing the period 1 July 2012 to 30 June 2017, in accordance with the requirements of clause 6.8 of the *Rules*.

Aurora's *Regulatory Proposal* has been the subject of public consultation and a detailed review by the AER and its consultants. On 29 November 2011, the AER published its *Draft Distribution Determination* for the Aurora electricity distribution business. This *Revised Regulatory Proposal* is in response to the AER's *Draft Distribution Determination,* and is submitted in accordance with clause 6.10.3 of the *Rules*.

Aurora has reviewed the matters raised by the AER in its *Draft Distribution Determination*, in particular where the AER has made adjustments to Aurora's *Regulatory Proposal*. Where applicable, Aurora has implemented the adjustments required by the AER's *Draft Distribution Determination*, or provided additional information and arguments to support its original, or modified, proposal for the AER's consideration.

Aurora does not necessarily accept the rationale behind all of the AER's adjustments included in the *Draft Distribution Determination,* such as the AER's Weighted Average Cost of Capital (WACC) of 8.08 per cent, and has modified them for the purposes of the Building Block calculation. Aurora may comment further on these matters in any submission in response to the *Draft Distribution Determination* that is to be lodged with the AER by 20 February 2012. Aurora expects that the AER will take any further matters raised by Aurora in any subsequent submissions into consideration when making its *Final Distribution Determination*.

In general, this *Revised Regulatory Proposal* provides additional information to support and clarify Aurora's *Regulatory Proposal* and addresses concerns or questions raised by the AER and its consultants in the AER's *Draft Distribution Determination*. Aurora's *Revised Regulatory Proposal*:

- highlights and addresses where Aurora maintains a different position to the changes proposed by the AER in its *Draft Distribution Determination*;
- acknowledges where Aurora has accepted changes proposed by the AER in its *Draft Distribution Determination*; and
- seeks additional information in order to clarify how aspects of the *Final Distribution Determination* will be applied.

This *Revised Regulatory Proposal* generally does not address aspects of Aurora's *Regulatory Proposal* that the AER has accepted.

1.2. Background

Aurora is a Tasmanian Government owned fully integrated energy and network business, with complementary activities in telecommunications and energy related technologies. It was formed in July 1998 after the disaggregation of the former Hydro Electric Commission.

Consistent with its purpose "to see the Tasmanian community prosper from its efforts", Aurora has made a significant contribution to the Tasmanian economy since its establishment. This has been provided through financial contributions to the Tasmanian Government to fund core Government services, its investment in the Tasmanian community in terms of employment, historic levels of capital expenditure, customer connections and its extensive support of Tasmanian suppliers.

Aurora's distribution business provides a 24-hour, seven day a week service to approximately 228,100 residential and 47,400 commercial distribution customers across the State, to ensure a safe and reliable electricity supply. Aurora's core distribution assets comprise 14,537 km of overhead high voltage lines, 7,139 km of overhead low voltage lines and 2,298 km of high and low voltage underground cables, 31,964 ground and pole mounted substations and 222,000 poles across an area of 67,800 square kilometres. Aurora also operates approximately 49,000 public lights and maintains them on behalf of local councils. The company also constructs, maintains and operates the electricity distribution network on King and Flinders Island on behalf of Hydro Tasmania.

1.3. Strategic overview

Aurora remains committed to demonstrating industry leadership by continuing to deliver a safe and reliable electricity supply while minimising the impact on Tasmanian households and businesses of any future distribution-related price increases. However, it is acknowledged that Aurora's distribution business is unable to influence the other elements of the supply chain which may cause increases to the final prices seen by customers. This is the fundamental driver underpinning Aurora's *Revised Regulatory Proposal*.

As detailed in Aurora's *Regulatory Proposal*, the long term strategy is being delivered as a part of a two-stage process. During the first phase, the distribution business is focused on driving cost reductions from current service delivery methods, together with the selective deployment of a number of proven technologies. This has already involved a challenging regime of productivity improvements and cost cutting across the distribution business with proportionate reductions to be undertaken in the corporate areas to enable the achievement of the strategy. This will ensure that capital and operating expenditure programs are kept to the absolute minimum while also ensuring the provision of a safe and reliable supply of electricity.

The critical second phase will focus on driving efficiency by changing the way services are delivered. This involves the deployment of innovative and modern technology to deliver efficient and sustainable customer outcomes in the future.

The capital and operating expenditure forecasts put forward in Aurora's *Regulatory Proposal* were considered to provide the absolute minimum necessary at this early stage in the strategy development process to deliver a sustainable, long term outcome for Tasmania's distribution network.

It is Aurora's view that the best outcome for the Tasmanian community, in terms of price, service and reliability outcomes, will be delivered if Aurora has sufficient time to deliver this step change in its operating model in a sustainable manner. This is particularly relevant in relation to operating expenditure where the forecasts provided in Aurora's *Regulatory Proposal* and the AER's *Draft Distribution Determination* converge over time. Aurora considers that it has not yet achieved sufficient stability in its operating expenditure to use the base year approach adopted by the AER. This is addressed further in chapter 5 of this *Revised Regulatory Proposal* which discusses proposed changes to operating expenditure.

1.4. Key issues addressed in this Revised Regulatory Proposal

1.4.1. Areas where Aurora agrees with the AER

The AER has proposed a number of changes in its *Draft Distribution Determination* that Aurora generally agrees with and has accepted. Whilst Aurora may generally agree with the AER's application there are some instances within this *Revised Regulatory Proposal* where Aurora has applied a differing outcome at a detailed level.

Aurora generally accepts the AER's position in relation to the following:

- utilisation of a Building Block approach for the determination of prices for the provision of metering services;
- capping of labour costs as a component of the *Quoted Services* model;
- Efficiency Benefit Sharing Scheme (EBSS);
- Demand Management Incentive Scheme (DMIS);
- classification of the services provided by Aurora; and
- control mechanisms applied to the services provided by Aurora.

Generally these issues are not considered further in this document.

1.4.2. Areas where the AER's intention is unclear

There are a number of matters within the AER's *Draft Distribution Determination* that Aurora wishes to clarify with the AER or wishes the AER to reconsider. These matters include:

- the utilisation of a base year approach to operating expenditure and in particular the use of 2009-10 as that base year;
- clarification surrounding the application of pass through events;
- the setting of targets within the Service Target Performance Incentive Scheme (STPIS);
- the setting of certain parameters within the cost of capital (WACC) calculation; and
- an apparent inconsistency in the treatment of escalators and units rates between and within the service classifications.

Aurora considers that there is certain information, and accompanying documentation, that has been provided to the AER as part of, or subsequent to, Aurora's *Regulatory Proposal*, that the AER, and its consultants, has not fully understood and therefore not given an appropriate level of consideration. There are also a number of areas where Aurora has more up-to-date information to that which the AER has utilised as the basis of its *Draft Distribution Determination*.

There are also instances within the AER's *Draft Distribution Determination* where Aurora considers the AER's position is not an accurate reflection or application of the provisions contained within the *Rules*.

These issues are addressed as part of this *Revised Regulatory Proposal*.

1.4.3. Areas where Aurora differs from the AER

This *Revised Regulatory Proposal* outlines a range of matters on which Aurora maintains a different position to the AER. The key areas of concern for Aurora in delivering its *Direct Control Services* in the forthcoming *Regulatory Control Period* are detailed in this *Revised Regulatory Proposal*. These are summarised in the following sections.

1.5. Key assumptions

The capital and operating expenditure forecasts detailed in Aurora's *Revised Regulatory Proposal* are based on the range of assumptions detailed in this *Revised Regulatory Proposal*. These assumptions are based on all available information at the time of preparing this *Revised Regulatory Proposal*.

The AER has accepted the majority of the assumptions proposed by Aurora for its forecasts of expenditure for the forthcoming *Regulatory Control Period*. In its *Draft Distribution Determination* the AER indicated that it has updated a number of Aurora's forecasts with more up-to-date data as part of the review of Aurora's *Regulatory Proposal*. Aurora has in turn updated a number of its previous forecasts to reflect more up-to-date data sets than those utilised by the AER. This includes:

- Labour escalations

  Aurora has substituted its labour escalations for the first two years of the forthcoming *Regulatory Control Period* based on the recently approved Aurora enterprise agreement (EA). These escalators reflect the negotiated wage outcomes of Aurora's recently finalised EA and reflect prudent and efficient wage increases. Aurora has substituted its labour escalations for the remaining three years of the forthcoming *Regulatory Control Period* based on the outcomes of the report prepared by Deloitte Access Economics for the AER as part of the AER's review of Aurora's *Regulatory Proposal*.

- Economic and demand forecasts

  Aurora has undertaken a revision of a number of its economic and demand forecasts based on the most recent data. In particular Aurora has updated its:

  - demand forecast in light of the most recent economic data and Aurora's 2011 distribution network winter peak demand from information prepared by ACIL Tasman;
  - energy consumption forecast in light of the most recent economic data and 2010-11 consumption outcomes to date from information prepared by ACIL Tasman;
  - customer connection number forecasts in light of the most recent economic and connection data from information prepared by ACIL Tasman;
  - consumer price index based on the latest outcomes from the November 2011 RBA Statement of Monetary Policy including the carbon tax CPI adjustment modelled by the Commonwealth Treasury; and
  - material escalators based on the latest information provided by SKM.

These changes in forecasts have been reflected in all expenditure, revenue and price forecasts proposed by Aurora as part of this *Revised Regulatory Proposal*.

The Australian Government has also finalised its carbon pricing legislation and the legislation has been passed by the Commonwealth Parliament that will introduce a carbon price from 1 July 2012. Aurora has updated forecasts, where possible, to reflect the impact of this change in federal government legislation.

The full list of assumptions is detailed in chapter 2 of this *Revised Regulatory Proposal*.

1.6. Capital expenditure

Aurora has made a number of adjustments to the levels of capital expenditure proposed by the AER. These adjustments have arisen as a result of Aurora's reallocation of economic and demand forecasts and a reallocation of corporate and shared services overheads that was not undertaken by the AER as a consequence of its changes to Aurora's *Regulatory Proposal*.

There are also a number of areas within the AER proposals for capital expenditure where Aurora considers the AER has incorrectly applied its proposed methodologies or have not taken into account the full consequences of the *Draft Distribution Determination*.

Material issues of concern include:

- The conservative projections made by the AER in relation to the need for pole replacements. Aurora operates a stable pole inspection and remediation process, with predictable outcomes, both in terms of expenditure required and failure risk. Aurora considers it has robust and reliable data to predict likely future levels of required expenditure. As pole replacements are driven by a measurement of physical strength, Aurora cannot ignore replacement or reinforcement activities without introducing unacceptable safety and legal consequences to the business. It is Aurora's view that these are not the type of engineering decisions that can be undertaken by the AER based on a theoretical replacement expenditure model.
- The AER has rejected replacement budgets for some zone transformer and voltage regulator assets. The AER has proposed that carrying a spare asset is a lower cost option, but Aurora does not accept that the AER has considered all the operational and safety based risks introduced to Aurora.
- The AER has excluded a large number of proposed projects on the basis that they represent reliability improvement investments and should be covered by the STPIS framework. Aurora does not accept the wholesale exclusions as proposed as it considers that the AER has not taken account of the key drivers for the investments, such as asset protection. Whilst some incremental reliability improvement is a possible bi-product of these projects, Aurora cannot ignore its obligations to operate its assets in a safe manner with adequate protection systems.
- The AER has also rejected a significant number of projects that were focused on addressing localised network performance that is substandard when compared to the TEC target standards. The AER has dismissed these projects as uneconomic and asserted that payment of GSL penalties is a lower cost option.

  The TEC states:

  > *"...A Distribution Network Service Provider must use reasonable endeavours to ensure that the average number and duration of planned and unplanned interruptions per annum to the supply of electricity due to interruptions on the distribution system, calculated using the methodology outlined in Schedule 8.1, does not exceed the frequency and duration figures..."*

  Aurora does not agree that such dismissal of the TEC requirements is valid as it does not adhere to the "reasonable endeavours" requirement; nor does the cost/benefit comparison proposed by the AER/Nuttall Consulting represent a true analysis of customer impacts (GSL payments are nominal figures, not representative of the financial costs incurred by the customer from loss of supply).

It is considered that the revised capital expenditure forecasts are as low as can be reasonably proposed given the need to maintain the reliability and safety of the network.

These issues are considered further in chapter 4 of this *Revised Regulatory Proposal*.

Aurora's revised forecast of capital expenditure for *Standard Control Services*, by RIN category, for the forthcoming *Regulatory Control Period* is detailed in Table 1.

Table 1

Forecast Standard Control Services capital expenditure

Aurora's Standard Control Services capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Capitalised overheads					
Capitalised overheads	18.832	18.869	18.349	17.975	18.058
System					
Demand related	46.907	47.264	43.613	46.615	42.330
Non-demand related	41.685	34.112	34.264	34.979	35.246
Regulatory obligations or requirements	5.514	5.502	5.256	5.217	5.214
Non system					
Non-network	18.177	15.149	13.468	15.638	15.597
SCADA and network control	1.169	5.789	5.764	0.718	0.717
Total expenditure	**132.284**	**126.685**	**120.714**	**121.142**	**117.162**

1.7. Operating expenditure

Aurora has made a number of adjustments to the levels of operating expenditure proposed by the AER. These adjustments have arisen as a result of Aurora's reallocation of economic and demand forecasts, the finalisation of Aurora's 2010-11 financial year and a re-allocation of corporate and shared services overheads that was not undertaken by the AER as a consequence of its proposed changes to Aurora's *Regulatory Proposal*.

There are also a number of areas within the AER proposals for operating expenditure where Aurora considers the AER has incorrectly applied its proposed methodologies or have not taken into account the full consequences of its *Draft Distribution Determination*.

As noted previously, Aurora is in the early stages of the implementation of a revised strategy and the implementation of a fundamentally different operating model. The base year approach proposed by the AER for calculating operating expenditure discounts the impact of this substantial change on the business. This has been demonstrated in chapter 5 by utilising the AER's base year approach but substituting 2010-11 as the base year (the AER's "normal" practice). The major driver of the substantial difference experienced by changing base year is entirely due to changes, or movements, that have occurred in Aurora's provision accounts (which is distorted due to the significant structural changes and associated staff redundancies).

Aurora considers that the approach detailed in Aurora's original and *Revised Regulatory Proposal*, where consideration is given to the underlying factors that drive business expenditure, is the most appropriate methodology for determining operating expenditure for Aurora at this point in time.

However, should the AER determine that it will continue to use its base year approach when setting Aurora's forecast operating expenditure, it must make allowance for the significant changes that are occurring within Aurora's provision accounts and the requirements of the Aurora CAM to allocate 'overheads'. Aurora contends that it would be most appropriate to use the most recent year (2010-11) as the starting position. Although, once again, the impacts of restructuring need to be factored into the AER's assessment. In view of the significant costs associated with the restructuring, Aurora's distribution business has had to limit its operating expenditure during 2010-11 to achieve long term sustainable outcomes. However, this is not achievable on an ongoing basis and would impact on reliability and safety outcomes.

Aurora's revised forecast of operating expenditure for *Standard Control Services*, by RIN category, for the forthcoming *Regulatory Control Period* is detailed in Table 2.

Table 2

Forecast Standard Control Services operating expenditure

Aurora's total operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Operating costs					
Network management	16.031	15.886	16.011	16.156	16.094
Non-network management	11.729	11.702	11.650	11.628	11.609
Operating costs - other	4.551	4.525	4.482	4.480	4.497
Maintenance costs					
Routine maintenance	18.550	18.377	18.116	17.931	17.712
Non-routine maintenance	20.957	20.701	20.382	19.970	19.501
Demand management					
Demand management	0.895	0.408	0.490	0.724	0.762
Total	**72.713**	**71.599**	**71.131**	**70.889**	**70.175**

1.8. Service Target Performance Incentive Scheme

The AER has set the revenue at risk for the non-GSL components of the STPIS to ±5 per cent.

Aurora is concerned that the current jurisdictional GSL Scheme was designed as a standalone Service Incentive Scheme, with an appropriate revenue at risk component. Given that the AER has indicated that it will not retain the GSL "safety nets" which currently apply under the 2007 OTTER Determination, the revenue at risk associated with the GSL Scheme is much greater than intended by OTTER. It is also in addition to and potentially in excess of the revenue at risk under the impost of the AER's STPIS and the jurisdictional GSL Scheme.

Aurora considers that the additional revenue at risk to Aurora from the GSL Scheme should be taken into account when setting the maximum at risk for the S-factor components of the STPIS. In particular, Aurora proposes that the revenue at risk to the S-factor be adjusted downwards to account for the historical impact of GSL payments under that scheme and be adjusted down and set at a maximum value of ±2.5 per cent of annual revenue.

Aurora considers that the 2.5 per cent would create sufficient incentive to achieve the expected level of reliability for customers through the combination of the minimum reliability requirements included in the TEC and the jurisdictional GSL Scheme.

1.9. Weighted Average Cost of Capital

Aurora considers that the provision of an adequate return on capital is of critical importance to Aurora's shareholders and its customers. In particular, any outcome that would deliver an inadequate post-tax return will damage incentives for investment, particularly relative to other states, and will ultimately impact on the levels of network investment in the State.

Aurora considers there is no compelling reason, that investment in Tasmanian based assets should deliver a lower return than investment in similar infrastructure assets in other States. The AER should allow a return that enables Aurora to receive a similar return, as its assets are of a similar nature and degree of non-diversifiable risk as other DNSPs.

Aurora considers that a consistent (long-term) approach should be taken to the risk free rate and market risk premium that takes account of current economic circumstances and the state of financial markets in light of the European sovereign debt crisis. Aurora is also concerned to ensure an appropriate application is applied for debt risk premium.

Current market practice is to apply an adjustment to the risk free rate to achieve a more appropriate return and not to reflect the current flight to quality that exists in the risk free rate at this time. This has been acknowledged recently in IPART's decision for the Review of Water Prices for Sydney Desalination Plant Pty Ltd in which IPART stated:

> *"in doing so, we had strong regard to the calculated WACC using longer term averages for market parameters".*

The AER has suggested that financial markets are now comparable with normal market conditions following on from the global financial crisis. However, the clear evidence suggests that conditions in financial markets are no less uncertain now than when the AER determined a market risk premium of 6.5 per cent in its SORI and hence there is no persuasive evidence for change. Aurora has therefore proposed a continuation of the market risk premium detailed in the AER's SORI.

Aurora considers that its methodology of utilisation of the Bloomberg fair value curve for deriving the debt risk premium is the most appropriate as it is an observable benchmark that is simple to apply and is an effective external market reference point from an independent service provider.

The combination of these factors results in a nominal vanilla WACC outcome of 9.97 per cent.

Further details in relation to each of these elements of WACC is included in chapter 9 of this *Revised Regulatory Proposal*.

1.10. RAB roll forward

Aurora has retained its position on the CPI that should apply to the treatment of assets within the current *Regulatory Control Period* as a result of confirmation received from OTTER regarding the capitalisation of assets.

Aurora has also amended the AER's adjustment of the asset base for movements in provisions as Aurora considers these adjustments are inconsistent with the treatment of assets under the current OTTER determination and are not reflective of the current requirements of the accounting ring-fencing guidelines.

1.11. Alternative Control Services

Aurora has made a number of adjustments to the levels of expenditure proposed by the AER within each of the *Alternative Control Services*. These adjustments have arisen as a result of Aurora's reallocation of economic and demand forecasts and a reallocation of corporate and shared services overheads that was not undertaken by the AER as a consequence of their changes to Aurora's expenditure forecasts within the *Regulatory Proposal*.

There are also a number of areas within the AER proposals for *Alternative Control Services* where Aurora considers the AER has incorrectly applied their proposed methodologies or have not taken into account the full consequences of their *Draft Distribution Determination*.

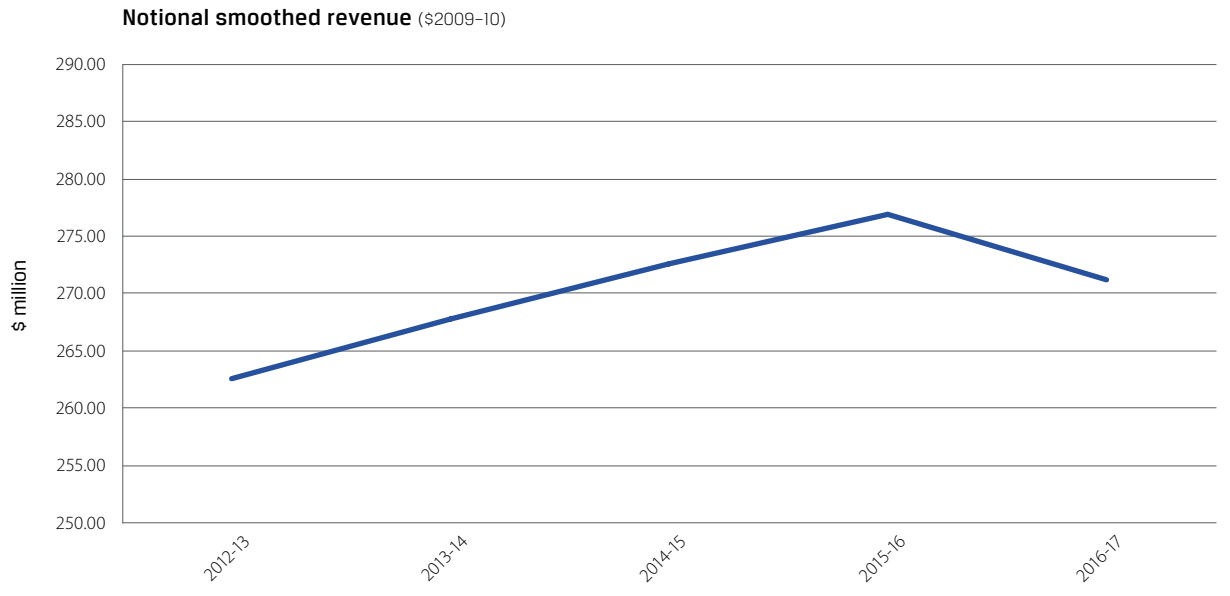
1.12. Revenue calculation

Aurora's annual revenue requirement (ARR), developed utilising the *Rules* required Building Block approach, comprises the sum of a number of components that are detailed in this *Revised Regulatory Proposal*.

Projected total revenue, in real 2009-10 dollars, for the forthcoming *Regulatory Control Period* is shown in Figure 1.

Figure 1

Notional smoothed revenue



The notional Building Block revenue requirement, in real 2009-10 dollars, for each year of the forthcoming *Regulatory Control Period* is detailed in Table 3.

Table 3

Notional Building Block revenue

$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Return on capital	132.05	136.13	139.45	142.35	145.87
Return of capital (regulatory depreciation)	44.57	44.42	41.38	35.33	34.06
Operating expenditure	73.88	72.80	72.30	72.07	71.29
Benchmark tax liability	18.97	18.86	18.07	17.63	17.22
Notional Building Block revenue	269.46	272.21	271.20	267.38	268.45
Notional Building Block smoothed revenue	262.53	267.78	272.60	276.96	271.15

1.13. Customer pricing outcomes

Aurora's indicative prices for the provision of *Standard Control Services* have been calculated in accordance with the *Rules* requirements. In calculating these indicative prices, Aurora has adopted an approach of segregating its total revenue by the following customer classes:

- residential;
- small business – LV;
- large business – LV;
- large commercial – HV;
- irrigation; and
- unmetered supplies.

Separate consumption forecasts have been produced for each of these customer classes.

Table 4 and Figure 2 provide an indication of distribution prices, in real 2009-10 cents per kWh, for *Standard Control Services* by customer class. These prices have been calculated using revised energy consumption forecasts and annual revenue requirements at the customer class level.

Table 4

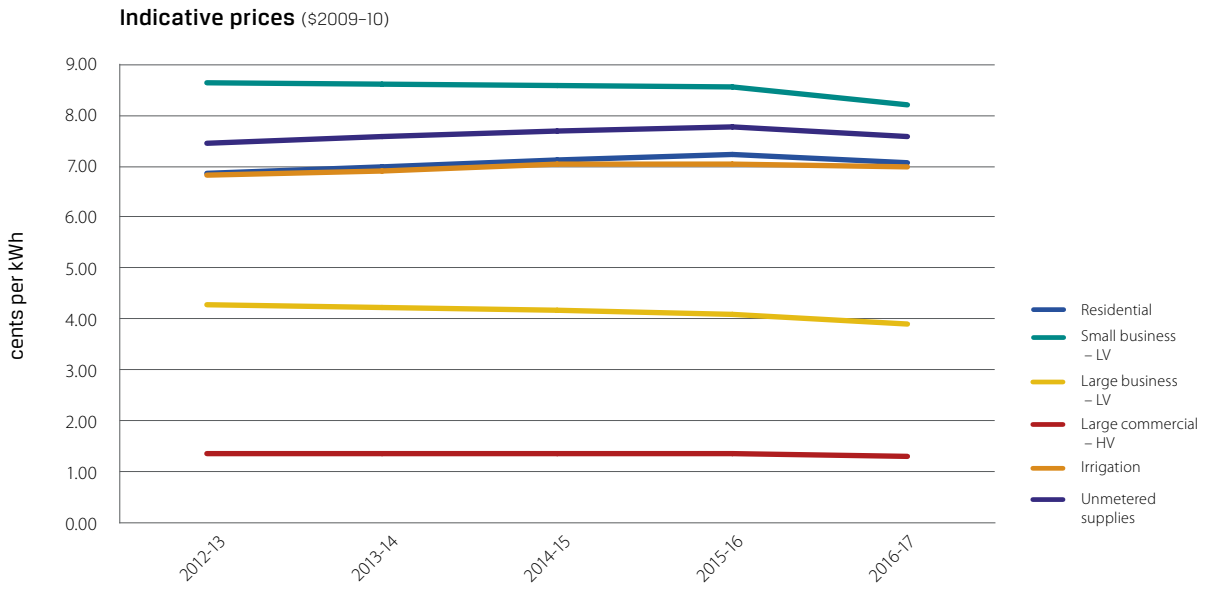
Indicative distribution prices

cents 2009-10	2012-13 (c/kWh)	2013-14 (c/kWh)	2014-15 (c/kWh)	2015-16 (c/kWh)	2016-17 (c/kWh)
Residential	6.86	6.99	7.11	7.22	7.06
Small business – LV	8.63	8.62	8.59	8.55	8.20
Large business – LV	4.27	4.23	4.17	4.10	3.89
Large commercial - HV	1.35	1.36	1.36	1.35	1.30
Irrigation	6.82	6.90	7.03	7.04	6.99
Unmetered supplies	7.45	7.58	7.68	7.78	7.58
All classes	6.05	6.10	6.16	6.19	6.00

Indicative prices are shown in real 2009-10 cents per kWh for energy consumed. However, it should be noted that actual prices depend on specific tariffs which are made up of additional components including fixed, energy and demand charges. For this reason the above prices are considered indicative only, are not binding and are only provided for the purposes of giving a high level overview of the expected price impact for the forthcoming *Regulatory Control Period*.

Figure 2

Indicative distribution prices



As noted previously, Aurora is concerned about the impact of price increases on its customers. Aurora would therefore encourage the AER to adopt a smoothing mechanism that will spread the impact of its *Final Distribution Determination* over the five years of the *Regulatory Control Period*. This smoothing should also avoid any one-off step change for customers, particularly in a year where customers will also be seeing the impact of the Commonwealth Government's carbon price.

1.14. Consistency with original Regulatory Proposal

In accordance with clause 6.10.3(b), this *Revised Regulatory Proposal* incorporates the changes required to address matters raised by AER's *Draft Distribution Determination*. To assist the AER and stakeholders in reviewing Aurora's response to the AER's *Draft Distribution Determination*, this *Revised Regulatory Proposal* does not revisit information or analysis previously provided by Aurora in relation to matters with which Aurora agrees. Instead, the focus of this *Revised Regulatory Proposal* is to respond to any matters of difference set out in the AER's *Draft Distribution Determination*. In light of this approach, the following table is intended to assist readers by providing a cross-reference to information provided in Aurora's original *Regulatory Proposal* and how that information has been treated in this *Revised Regulatory Proposal*.

Table 5

Cross-reference to Aurora's Regulatory Proposal

Original Regulatory Proposal	Description of chapter	Revised Regulatory Proposal
Chapter 1	This chapter provided an executive summary of Aurora's *Regulatory Proposal* and has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 1
Chapter 2	This chapter provided an overview of Aurora's strategy for the *Regulatory Control Period* and its goal to minimise price impacts to customers. This strategy has not changed and this chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 3	This chapter provided an overview of the Aurora business and its history. This chapter has not been included in the *Revised Regulatory Proposal*.	
Chapter 4	This chapter provided an overview of Aurora's distribution business and its history. This chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 5	This chapter provided an overview of transitional issues that Aurora considered the AER should have regard. The AER has acknowledged and addressed these transitional issues and this chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 6	This chapter addressed outcomes of the AER's *Framework and Approach*. Aurora and the AER agree on the *Framework and Approach* that will apply for the *Regulatory Control Period* and this chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 7	This chapter outlined Aurora's key assumptions for the *Regulatory Control Period*. Aurora has amended some of its key assumptions for the *Regulatory Control Period* and this chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 2
Chapter 8	This chapter outlined Aurora's approach to the management of risk. Aurora's approach to risk has not changed and this chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 9	This chapter outlined Aurora's proposal for the length of the *Regulatory Control Period*. The *Regulatory Control Period* has been agreed between Aurora and the AER and this chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 10	This chapter outlined Aurora's forecasts for growth for the *Regulatory Control Period*. Aurora has updated a number of these growth forecasts and this chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 3
Chapter 11	This chapter outlined Aurora's actual and forecast expenditure for capital programs for past, present and forthcoming *Regulatory Control Periods*. Aurora does not agree with the AER's assessment of forecast capital expenditure and this chapter has been included in Aurora's *Revised Regulatory Proposal*. The modified chapter will only focus on forecasts of capital expenditure for the forthcoming *Regulatory Control Period*.	Chapter 4
Chapter 12	This chapter outlined Aurora's actual and forecast expenditure for operations and maintenance programs for past, present and forthcoming *Regulatory Control Periods*. Aurora does not agree with the AER's assessment of forecast operating expenditure and this chapter has been included in Aurora's *Revised Regulatory Proposal*. The modified chapter will only focus on forecasts of operating expenditure for the forthcoming *Regulatory Control Period*.	Chapter 5
Chapter 13	This chapter outlined the relationships that exist between Aurora's capital and operating expenditure. These relationships will be addressed as a component of either the capital or operating expenditure forecasts in the *Revised Regulatory Proposal*. This chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 14	This chapter outlined Aurora's approach to the provision of non-network solutions. This chapter has not been included in Aurora's *Revised Regulatory Proposal*.	

Table 5

Cross-reference to Aurora's Regulatory Proposal (continued)

Original Regulatory Proposal	Description of chapter	Revised Regulatory Proposal
Chapter 15	This chapter outlined Aurora's ability to complete the forecast expenditure programs for the *Regulatory Control Period*. As the AER has not raised any pertinent issues in the delivery of Aurora's proposed work programs this chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 16	This chapter outlined Aurora's shared costs and how they would be allocated to the forecast expenditure programs for the *Regulatory Control Period*. As the AER has not raised any pertinent issues regarding Aurora's shared costs this chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 17	This chapter outlined the escalators that would be applied by Aurora to the forecasts work programs during the *Regulatory Control Period*. Aurora has updated information relating to the application of expenditure escalators and this chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 6
Chapter 18	This chapter outlined the Aurora unit rates that would apply for the *Regulatory Control Period*. Aurora does not agree with the assessment of the AER regarding a number of unit rates and this chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 7
Chapter 19	This chapter outlined Aurora's treatment of the Regulatory Asset Base (RAB) for the *Regulatory Control Period*. Aurora does not agree with the AER's assessment of the RAB and this chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 8
Chapter 20	This chapter outlined Aurora's calculation of the return on capital (WACC) that would apply for the *Regulatory Control Period*. Aurora does not agree with the AER's assessment of the WACC and this chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 9
Chapter 21	This chapter outlined Aurora's calculation of the depreciation that would apply to the RAB for the *Regulatory Control Period*. Aurora does not agree with the AER's assessment of the RAB components that determine depreciation and this chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 10
Chapter 22	This chapter outlined Aurora's calculation of the corporate income tax that would apply for the *Regulatory Control Period*. Aurora does not agree with the AER's assessment of the components that derive the income tax assessment and this chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 11
Chapter 23	This chapter outlined a summary Aurora's revenue adjustments that would occur to the provision of *Standard Control Services*. As these adjustments were outlined in detail in chapter 32 of Aurora's *Regulatory Proposal* this chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 24	This chapter outlined Aurora's proposal for the operations of the AER's Efficiency Benefit Sharing Scheme (EBSS). Aurora proposes a number of adjustments to its operating expenditure forecasts and these are reflected within the EBSS. This chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 12
Chapter 25	This chapter outlined Aurora's proposal for the operations of the AER's Service Target Performance Incentive Scheme (STPIS). Aurora does not agree with the AER's assessment of all the components of the STPIS and this chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 13
Chapter 26	This chapter outlined Aurora's proposal for the operations of the AER's Demand Management Incentive Scheme (DMIS). Aurora agrees with the AER's proposal for the operations of the DMIS and this chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 27	This chapter outlined Aurora's proposal for those events that should be treated as a cost pass through. Aurora seeks further clarification from the AER on the events that have been included as cost pass throughs. This chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 14
Chapter 28	This chapter outlined Aurora's forecasts of customer capital contributions. Aurora proposes a number of adjustments to its capital expenditure forecasts and these are also reflected within the customer capital contributions. This chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 15
Chapter 29	This chapter outlined Aurora's forecasts of the X-factors that would apply for the forthcoming *Regulatory Control Period*. Aurora proposes a number of adjustments to its capital and operating expenditure forecasts and these are reflected within the annual revenue requirement and X-factors. This chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 16
Chapter 30	This chapter outlined Aurora's forecasts for the annual revenue requirement that would apply for the forthcoming *Regulatory Control Period*. Aurora proposes a number of adjustments to its capital and operating expenditure forecasts and these are reflected within the annual revenue requirement. This chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 17

Table 5

Cross-reference to Aurora's Regulatory Proposal (continued)

Original Regulatory Proposal	Description of chapter	Revised Regulatory Proposal
Chapter 31	This chapter outlined a summary of Aurora's forecast total revenue requirement that would apply for the forthcoming *Regulatory Control Period*. As these requirements were outlined in detail in chapter 30 of Aurora's *Regulatory Proposal* this chapter has not been included in Aurora's *Revised Regulatory Proposal*.	
Chapter 32	This chapter outlined the control mechanisms that would apply to the revenue for *Standard Control Services* for the forthcoming *Regulatory Control Period*. Aurora proposes a minor adjustment to the control mechanisms determined by the AER. This chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 18
Chapter 33	This chapter outlined Aurora's forecasts for the provision of *Alternative Control Services* that would apply for the forthcoming *Regulatory Control Period*. Aurora proposes a number of adjustments to the *Alternative Control Services* forecasts proposed by the AER. This chapter has been separated in Aurora's *Revised Regulatory Proposal* to encompass a chapter for each *Alternative Control Service*.	Chapter 19, 20, 21, 22
Chapter 34	This chapter outlined Aurora's negotiating framework that would apply for the forthcoming *Regulatory Control Period*. The AER has sought further clarification from Aurora on its negotiating framework. This chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 23
Chapter 35	This chapter outlined the components of Aurora's *Regulatory Proposal* that were considered confidential. Aurora has provided further confidential information with this *Revised Regulatory Proposal*. This chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 24
Chapter 36	This chapter outlined Aurora's indicative customer prices for the forthcoming *Regulatory Control Period*. Aurora proposes a number of adjustments to its revenue requirements and volume forecasts and these are reflected within the indicative prices. This chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 25
Chapter 37	This chapter provided certification of the Aurora *Regulatory Proposal* in accordance with the *Rules*. This chapter has been included in Aurora's *Revised Regulatory Proposal*.	Chapter 26
Chapter 38	This chapter provided verification by the CEO of the Aurora RIN Response in accordance with the *Rules*. This chapter has not been included in Aurora's *Revised Regulatory Proposal*.	

1.15. Conclusion

As noted earlier, Aurora is committed to demonstrating industry leadership by continuing to deliver a safe and reliable electricity supply while minimising the impact on Tasmanian households and businesses of any future distribution-related price increases. However, it is acknowledged that Aurora's distribution business is unable to influence the other elements of the supply chain which may cause increases to the final prices seen by customers. This is the fundamental driver underpinning Aurora's *Revised Regulatory Proposal*.

Aurora considers that it has the capacity to continue to deliver service and reliability at appropriate levels, while also providing improved price outcomes through greater levels of efficiency. While this is the case, the revised capital and operating expenditure proposals put forward in this *Revised Regulatory Proposal* are seen as the absolute minimum necessary at this early stage in the strategy implementation process.

It is considered that Aurora's *Revised Regulatory Proposal*, together with the supporting documents appended, provides the necessary rigour and robust justification of Aurora's proposed approach to asset management for the forthcoming *Regulatory Control Period*.

2. Key assumptions

2. Key assumptions

Schedule 6.1.1 of the *Rules* requires that Aurora's Building Block Proposal must include, in relation to capital expenditure, the key assumptions that underlie the capital expenditure forecast; and a certification of the reasonableness of the key assumptions by Aurora's directors.

Schedule 6.1.2 of the *Rules* requires that Aurora's Building Block Proposal must include, in relation to operating expenditure, the key assumptions that underlie the operating expenditure forecast; and a certification of the reasonableness of the key assumptions by Aurora's directors.

Further, the RIN issued by the AER in April 2011 set out specific key assumptions for which Aurora was required to provide prescribed information to the AER. For capital and operating expenditure the AER required Aurora to identify key assumptions, and the associated quantum where relevant, for each of the following:

- forecast capital or operating expenditure proposal and its preparation;
- capital or operating expenditure category and its preparation; and
- material programs relating to each capital or operating expenditure category and their preparation.

For each of the above assumptions Aurora was required to provide:

- the method and information used to develop the assumption;
- how the assumption has been applied and taken into account;
- for capital expenditure, the effect or impact of the assumption on the forecast level of capital expenditure in the forthcoming *Regulatory Control Period*; and
- for operating expenditure, the effect or impact in comparison to its effect or impact on actual operating expenditure incurred in the previous and current *Regulatory Control Periods*.

Ideally, and where at all possible, Aurora's *Revised Regulatory Proposal* uses actual expenditure, values and inputs to build its capital and operating expenditure forecasts for the forthcoming *Regulatory Control Period*. However, in the absence of certainty relating to specific expenditure, values and inputs, Aurora has been obliged to make assumptions using available information at the time of preparing this *Revised Regulatory Proposal*.

In accordance with the *Rules* and the requirements of the RIN issued by the AER, this chapter sets out a range of assumptions relevant to Aurora's capital and operating expenditure forecasts. This *Revised Regulatory Proposal* groups assumptions by the level of granularity associated with each assumption and its impact on expenditure forecasts. The following three assumption categories are set out in this *Revised Regulatory Proposal*:

- at the highest level are Aurora's global assumptions which incorporate broad assumptions that will impact across multiple capital and operating expenditure forecasts;
- at the intermediate level are the key assumptions (as defined by the AER in the RIN) which are central to Aurora's capital and operating expenditure forecasts, and as such the AER prescribes the information which Aurora must provide on these assumptions; and
- at the lowest level are the assumptions that are specific to forecasts for each of Aurora's RIN subcategories.

The information provided within this chapter of this *Revised Regulatory Proposal* is supplementary to that set out previously in Aurora's response to the RIN.

2.1. AER's Draft Distribution Determination

The AER has accepted the majority of the assumptions proposed by Aurora for its forecasts of expenditure for the forthcoming *Regulatory Control Period*. In its *Draft Distribution Determination* the AER has indicated that it has updated a number of Aurora's forecasts with more up-to-date data as part of the review of Aurora's *Regulatory Proposal*. Aurora has in turn updated a number of its previous forecasts to reflect more up-to-date data sets than those utilised by the AER. Aurora understands that these forecasts may again be updated by the AER as further up-to-date information becomes available.

The Australian Government has also finalised its carbon pricing legislation and the legislation has been passed by the parliament that will introduce a carbon price from 1 July 2012. Aurora has updated forecasts, where possible, to reflect the impact of this change in federal government legislation.

2.2. Global assumptions

As discussed above, Aurora has made a range of global assumptions that can be applied across multiple categories of its capital and operating expenditure forecasts. The level of detail provided for each assumption and its impacts are high level to ensure broad application across Aurora's capital and operating expenditure categories.

Table 6

Summary of globally applied assumptions

Nature of assumption	Method/information to develop assumption	Application of the assumption	Impact of the assumption
Strategic Plan			
Aurora has assumed that the direction encapsulated by Aurora's 2011-16 Strategic Plan will underpin its strategic direction across the entire forthcoming *Regulatory Control Period*. Further details of the Aurora Strategic Plan are discussed in chapter 3 of Aurora's *Regulatory Proposal*.	Aurora has made this assumption with regard to the underlying objectives and strategies documented in the Aurora 2011-16 Strategic Plan and associated material. Specifically this plan sets out strategies to: • enhance the efficiency of work delivery processes; • manage the distribution system within expenditure constraints and acceptable risks; and • align and remove duplication of activities.	This assumption applies across Aurora's revised capital and operating expenditure forecasts.	The impact of this assumption is that revised capital and operating expenditure forecasts are below what they would have been in the absence of the strategy.
Smarter network investment			
Aurora has assumed that, consistent with its Strategic Plan, it will adopt a more innovative approach to delivering customer outcomes whilst minimising consequent price increases over the forthcoming *Regulatory Control Period*. This smarter approach will include activities such as: • seeking an optimised balance between age and condition-based replacement; and • the phased and considered implementation of smarter network technology.	Aurora has made this assumption with regard to the underlying objectives and strategies documented in the Aurora Strategic Plan and associated material.	This assumption applies primarily to Aurora's revised capital expenditure forecasts, with other benefits possible for revised operating expenditure.	The impact of this assumption is that Aurora's revised capital and operating expenditure forecasts include the expected efficiencies that will be derived from the implementation of this smarter approach.
Internal operating environment			
Notwithstanding the review of the Tasmanian electricity supply industry being undertaken by the Expert Panel, Aurora has assumed that the structure of Aurora's business and its ownership arrangements will apply for the entire forthcoming *Regulatory Control Period*.	Aurora has made this assumption based on an understanding of anticipated business and ownership arrangements. Although there may be changes subsequent to the Expert Panel review, the potential outcomes are too uncertain to make provision for at this stage.	This assumption applies across Aurora's capital and operating expenditure forecasts.	The impact of this assumption means that there have been no provisions made in capital and operating expenditure forecasts for any changes to Aurora's ownership or business structures during the forthcoming *Regulatory Control Period*.

Table 6

Summary of globally applied assumptions (continued)

Nature of assumption	Method/information to develop assumption	Application of the assumption	Impact of the assumption
Internal planning			
Aurora has assumed that there will be no material impacts on revised capital and operating expenditure as a result of amendments to Aurora's internal plans, processes, procedures or systems in the forthcoming *Regulatory Control Period*.	Aurora has made this assumption based on an understanding of the framework proposed to apply for the forthcoming *Regulatory Control Period* for its internal plans, processes, procedures and systems.	This assumption applies across Aurora's revised capital and operating expenditure forecasts.	The application of this assumption means that no funding provisions have been made for any material changes to revised capital or operating expenditure forecasts for internal plans, policies, processes, procedures or systems in the forthcoming *Regulatory Control Period*.
Legislative and regulatory framework			
Notwithstanding the review of the Tasmanian electricity industry being undertaken by the Expert Panel, Aurora has assumed that there will be no material amendments to the legislative and regulatory framework in the forthcoming *Regulatory Control Period*, over and above that anticipated and accounted for in the revised expenditure forecasts.	Aurora has made this assumption based on knowledge of the current and anticipated future legislative and regulatory environment. Aurora has also had regard for known government policy positions on these matters. Analysis of anticipated regulatory changes to apply during the forthcoming *Regulatory Control Period* is set out in section 4.17 of Aurora's *Regulatory Proposal*.	This assumption applies across Aurora's revised capital and operating expenditure forecasts.	The application of this assumption impacts on the revised capital and operating expenditure categories which are driven by legislative and regulatory requirements. As material changes to regulatory and legislative frameworks are not included in revised forecasts, any material costs could only be passed through to customers if Aurora meets the *Rules* requirements for a pass through event.
National Energy Customer Framework (NECF)			
Aurora has assumed that the NECF package will commence within the Tasmanian jurisdiction as of 1 July 2012 and that the final Tasmanian package will not materially deviate from that proposed at the time of drafting this *Revised Regulatory Proposal*.	Aurora has made this assumption on the basis of: • the provisions of the *National Electricity Retail Law* and other associated instruments that were established by the South Australian parliament in early 2011; and • jurisdictional policy decisions regarding the implementation of NECF in Tasmania.	This assumption applies primarily to revised operating expenditure required for implementation activities to accommodate changes to Aurora's procedures, processes and systems as a result of NECF requirements.	The impact of this assumption is that there should be no additional costs on Aurora as a result of compliance with NECF requirements.

Table 6

Summary of globally applied assumptions(continued)

Nature of assumption	Method/information to develop assumption	Application of the assumption	Impact of the assumption
Carbon pricing			
Aurora has assumed that there will be a price on carbon during the forthcoming *Regulatory Control Period*. Although the Australian Government has legislated the commencement of a carbon pricing mechanism for 1 July 2012, there is uncertainty regarding likely impacts of the proposed mechanism and Aurora will address any future uncertainty as a recognised pass through event. It is reasonable to assume any costs arising from the introduction of a carbon price will be fully passed through to customers.	Aurora has made this revised assumption based on the final carbon pricing legislation of the Australian Government.	This revised assumption applies to the underlying assumptions used to forecast Aurora's revised capital and operating expenditure. In particular demand, energy consumption and cost escalation forecasts are impacted by this assumption.	The impact of this revised assumption is that underlying forecasts may not fully account for the impacts of a price on carbon. Therefore revised demand and energy consumption forecasts may be higher, and revised cost escalation forecasts may be lower, than if a carbon pricing mechanism had been accurately accounted for.
Current works and programs			
Aurora has assumed that the required works and programs for the current *Regulatory Control Period* will be delivered within the current *Regulatory Control Period*.	Aurora has based this assumption on analysis of forecast and actual expenditure for its current *Regulatory Control Period*.	This assumption applies across Aurora's revised capital and operating expenditure forecasts.	The application of this assumption impacts on the revised forecast work program, which will not need to comprise works and programs not completed during the current *Regulatory Control Period*.
Workforce capacity			
Aurora has assumed that it will have the resource availability and capability to deliver the programs as forecast for the forthcoming *Regulatory Control Period*.	Aurora has based this assumption on the deliverability plans in place within Network Services division and appended as an attachment to Aurora's *Regulatory Proposal*.	This assumption applies across Aurora's revised capital and operating expenditure forecasts.	The impact of this assumption is that Aurora will be able to complete the revised capital expenditure and operating expenditure allowances as set out in this *Revised Regulatory Proposal*.
Age of assets			
Aurora has assumed that revised capital expenditure forecasts can be estimated based predominantly on asset age data. Aurora has used age and other condition information, such as failures and condition to create a proxy for risk. Historically Aurora has used age-based replacement strategies; however over the forthcoming *Regulatory Control Period* it will employ a greater degree of condition-based decision-making.	Aurora has based this assumption on the basis of previous practices.	This assumption applies to Aurora's revised capital expenditure forecasts.	The impact of this assumption is that Aurora's revised forecasts for condition-based categories will be based on age and risk-based strategies; although in practise Aurora will transition to condition-based assessments across the forthcoming *Regulatory Control Period*.

Table 6

Summary of globally applied assumptions(continued)

Nature of assumption	Method/information to develop assumption	Application of the assumption	Impact of the assumption
Planning and reliability standards			
Aurora has assumed that the planning and reliability standards as currently used by Aurora will continue to apply in the current form into the forthcoming *Regulatory Control Period.*	Aurora has based this assumption on an understanding of internally determined intentions for planning standards and the reliability standards currently within the *TEC.*	This assumption applies across Aurora's revised capital and operating expenditure forecasts.	The impact of this assumption is that Aurora's revised capital and operating expenditure forecasts are driven by the requirement to comply with Aurora's internal planning standards and the *TEC* reliability standards.
Historical expenditure			
Aurora has assumed that historical expenditure and volumes are a valid basis to build revised forecasts for forthcoming *Regulatory Control Period* expenditures and volume.	Aurora has based this assumption on analysis of historical and actual capital expenditure.	This assumption applies across Aurora's revised capital and operating expenditure forecasts.	The impact of this assumption is that Aurora's revised capital and operating expenditure forecasts are based largely on historical expenditures and volumes and are consistent with the expenditure levels in the latter period of the current *Regulatory Control Period;* with adjustments made to account for factors specific to the forthcoming *Regulatory Control Period.*

2.2.1. Forecast of peak demand

The RIN required that Aurora provide, describe and explain how the key assumptions have been used to prepare the methodology for its maximum demand forecasts.

The highest level assumption relating to peak demand is that actual demand in the forthcoming *Regulatory Control Period* will not materially deviate from the revised peak demand forecast prepared for Aurora by ACIL Tasman. Drilling down, the development of peak demand assumptions necessarily involves a series of assumptions and forecasts to build a macroeconomic outlook on which to ultimately base peak demand assumptions.

Method and information to develop assumption

ACIL Tasman prepared its revised forecast of peak demand primarily on the basis of the analysis of a range of economic indicators and external sources.

ACIL Tasman's underlying approach is to project load growth forward at each connection site at a rate that is consistent with recent history. These spatial forecasts are then aggregated together, using diversity factors, to a system level forecast (bottom-up).

This bottom-up forecast is then compared to, and reconciled with, a forecast at the system level (top-down). ACIL Tasman, in conjunction with Aurora, has prepared and provided the system level forecast. Spatial forecasts, in MW and MVA, are prepared for the individual connection sites.

Demand forecasts are prepared for both summer (December to February) and winter (June to August) periods.

Once data has been temperature/weather corrected and adjusted for large block loads and permanent transfers, demand forecasts are produced.

The forecasts are then reconciled with the medium economic growth scenario of the system level forecast by applying a proportional adjustment to each of the individual substations so that the sum of the coincident demands corresponds to the independent system demand forecast in each year of the forecast period.

Application of the assumption

This assumption applies to revised demand-based expenditure on the distribution network and new customer connections capital works. The application of this assumption means that revised capital expenditure forecasts have been developed to meet the revised peak demand forecasts prepared by ACIL Tasman.

Aurora's revised forecasts for peak demand are further outlined in chapter 3 of this *Revised Regulatory Proposal.*

2.2.2. Forecasts of energy consumption

The RIN required that Aurora provide, describe and explain how the key assumptions have been used to prepare the methodology for its energy consumption forecasts. This also includes a requirement for Aurora to set out assumptions relating to average customer usage by customer type.

The key assumptions associated with Aurora's revised energy consumption forecasts include the consideration of multiple macroeconomic indicators as well as consideration of the anticipated policy environment at both the national and local levels.

Method and information to develop assumption

The revised forecast of energy consumption for the period 2011-17 has been prepared by ACIL Tasman.

ACIL Tasman has produced an independent energy forecast for six customer classes for Aurora's forthcoming *Regulatory Control Period*. The forecast period also includes the period 2010-12 and therefore encompasses the period 2010-17.

The six customer classes are:

- residential;
- small business – LV;
- large business – LV;
- large commercial – HV;
- irrigation; and
- unmetered supplies.

The ACIL Tasman approach is to estimate multiple regression models for each customer class against a set of drivers which differ for each class and which are validated using standard statistical tools such as goodness of fit, correlation (R^2) and statistical significance (*t*-test).

Application of the assumption

The key assumptions listed above are aggregated to form an economic outlook which can be used to forecast energy consumption across Aurora's network. This will be used to develop pricing arrangements for *Standard Control Services*.

Impact of the assumption

This assumption has no direct application to the revised expenditure forecasts for the forthcoming *Regulatory Control Period*. The assumptions will however have a bearing on the final prices that customers can expect to pay through the tariffs that Aurora will design from its allowable revenue stream.

Aurora's revised forecasts for energy consumption are further outlined in chapter 3 of this *Revised Regulatory Proposal*.

2.2.3. Forecasts of customer numbers

The RIN required that Aurora provide, describe and explain how the key assumptions have been used to prepare the methodology for its customer numbers forecasts. This also includes a requirement for Aurora to set out assumptions relating to average customer usage by customer type.

At the highest level it is assumed that the actual customer numbers for the forthcoming *Regulatory Control Period* will not materially deviate from the revised forecasts prepared by ACIL Tasman.

Method and information to develop assumption

The revised forecast of customer numbers for the period 2011-17 has been prepared by ACIL Tasman.

ACIL Tasman has opted to apply an econometric methodology to forecast new customer connections in the Aurora network. This approach requires the estimation and testing of statistical relationships between the number of new connections and underlying drivers that influence the number of new connections.

The most obvious driver for new residential and commercial connections is the number of new buildings. ACIL Tasman has utilised the ABS Building Approvals Series[1] and Building Activity Series[2] for Tasmania as a proxy for the level of building activity.

The econometric approach utilised by ACIL Tasman entails the establishment of a relationship between the number of new connections and building activity. This relationship is used to forecast new connections based upon projections of building activity.

The Housing Industry Association (HIA) is another source for residential construction activity forecasts. The HIA model produces forecasts for new housing, renovations, non-residential buildings and engineering construction. Unfortunately the HIA forecasts are for only two years.

ACIL Tasman has also utilised forecasts provided by the Construction Forecasting Council (CFC). A key advantage of the CFC forecast is that they extend beyond five years.

ACIL Tasman has utilised an historical time trend for the number of new irrigation connections due to the unavailability of any significant independent statistical reports.

Application of the assumption

Aurora has used revised customer numbers forecasts to develop:

- new customer connection capital expenditure forecasts;
- the scale escalator applied to its capital expenditure forecasts; and
- the scale escalator applied to its operating expenditure forecasts.

Impact of the assumption

Revised customer growth assumptions apply to customer initiated works and as such this assumption is used as a key input to develop new customer connections capital expenditure forecasts for the forthcoming *Regulatory Control Period*.

Aurora's revised forecasts for customer numbers are further outlined in chapter 3 of this *Revised Regulatory Proposal*.

2.2.4. Unit costs

The RIN defined the unit rates applied to key items of plant and equipment as key assumptions and required that Aurora distinguish between material and labour rates. It also required that each unit rate should be identified in conjunction with associated key assumptions.

Method and information to develop assumption

This assumption is based on analysis of historical and actual work programs carried out within Aurora. This analysis results in a number of unit rates that are applicable to the work activities undertaken by Aurora.

1 ABS: Catalogue number 8731.0
2 ABS: Catalogue number 8752.0

Application of the assumption

This assumption applies across Aurora's revised capital and operating expenditure forecasts.

Impact of the assumption

Unit rates are applied to key items of plant and equipment for both labour and material unit rates. The unit rates currently applied by Aurora and reflected in the current average costs of works have been utilised as the basis for future unit rates.

Aurora internally derives its input costs on the basis of the current average costs of undertaking similar projects and capital and operating work programs over the current *Regulatory Control Period*.

These revised unit rates represent an aggregation of materials and other costs such as labour required to complete the works. This assumption applies to all revised expenditure forecasts.

There is no impact on the revised forecast operating and capital expenditure compared to current *Regulatory Control Period* expenditure resulting from the unit rates key assumption.

Aurora's unit costs are further outlined in chapter 7 of this *Revised Regulatory Proposal*.

2.2.5. Labour expenditure escalators

The RIN required that each labour escalator should be identified in conjunction with associated key assumptions. It required that Aurora explain any assumptions for:

- the methodology underlying the calculation of each escalator including lags; or
- the weightings given to each escalator.

To prepare its suite of revised labour cost escalators it has been assumed that the recent Aurora Enterprise Agreement (EA) will result in wage increases in line with the EA increases for the first two years of the forthcoming *Regulatory Control Period* (i.e. 2012-14) only. For the remaining three years of the forthcoming *Regulatory Control Period,* it has been assumed that wage increases will be in line with those prepared by Deloitte Access Economics for the AER in its review of Aurora and Powerlink.

Method and information to develop assumption

In the preparation of its review of unit rates for labour, the AER engaged the services of Deloitte Access Economics to review the factors likely to affect wage escalation over the year to June periods between 2009-10 to 2018-19.

Deloitte Access Economics have undertaken a detailed analysis of the factors impacting wages growth within Queensland and Tasmania and provided the AER with a comprehensive report.

Aurora considers that this report provides an up-to-date forecast of wages escalation and has adopted this report for the years of the forthcoming *Regulatory Control Period* not covered by the Aurora EA.

Application of the assumption

This assumption applies across Aurora's revised capital and operating expenditure forecasts.

Impact of the assumption

Revised labour escalator assumptions apply to all revised capital and operating expenditure forecasts and as such have been applied to the expenditure forecasts for the forthcoming *Regulatory Control Period*.

2.2.6. Material expenditure escalators

The RIN required that each material escalator should be identified in conjunction with associated key assumptions. It required that Aurora explain any assumptions for:

- the methodology underlying the calculation of each escalator including lags; or
- the weightings given to each escalator.

In the preparation of its revised unit rates for key pieces of plant and equipment, Aurora engaged the services of SKM, which has expertise in researching the increasing cost of capital infrastructure works in the electricity industry, to review the factors likely to affect the escalation of material costs between 2009-10 to 2016-17. SKM used a set of assumptions, which it deemed reasonable, with respect to the likely rate of annual material cost escalation that will be incurred during the forthcoming *Regulatory Control Period*.

Method and information to develop assumption

Firstly, SKM developed assumptions and forecasts regarding a range of economic cost drivers such as the Consumer Price Index (CPI), the Australia-United States exchange rate, construction costs and commodity prices.

A cost escalation model was then developed to forecast the likely impact of expected movements of specific input cost drivers on future electricity infrastructure materials costs. SKM used forecast escalation rates for the underlying drivers of network infrastructure plant and equipment costs that included consideration of assumed movements in aluminium, copper, steel, oil and construction costs.

SKM then analysed each of the main items of plant equipment and materials within its database, in order to establish a suitable weighting by which each of these underlying cost drivers could be considered to influence the total price of each completed item.

Application of the assumption

Assumptions regarding the forecast escalation rates for the underlying drivers of network infrastructure costs have been applied to forecast escalation rates at the asset category level. These are in turn used to forecast the material costs that comprise Aurora's revised capital and operating expenditure for each year of the forthcoming *Regulatory Control Period*.

Impact of the assumption

As noted by SKM in its report on material costs escalation rates, movements in CPI do not necessarily reflect material costs associated with electricity network projects. The impact of adjusting for material cost escalators, in real terms, will result in both increases and decreases in cost drivers and therefore material cost components of various network assets throughout. This means that in real terms some asset cost forecasts will increase compared to actual expenditure from the current *Regulatory Control Period* and other asset cost forecasts will decrease.

2.2.7. Forecasts of utilisation levels

Aurora's RIN defined forecasts of utilisation levels as a key assumption. However, Aurora does not use network utilisation to develop its capital expenditure forecasts. Rather, demand-related expenditure forecasts are developed on the basis of an analysis of capacity at the feeder level and the forecast demand at that feeder over the forecast period.

Aurora has, however, provided updated forecast utilisation levels for its distribution network within the revised RIN templates appended as an attachment to this *Revised Regulatory Proposal*.

2.2.8. Forecasts of standard asset lives

Aurora's RIN defined forecasts of standard asset lives as a key assumption. However, Aurora does not forecast standard asset lives to prepare its capital or operating expenditure forecasts. Capital expenditure for asset replacement cost categories is based on the age and condition of assets, and as such this *Revised Regulatory Proposal* does not discuss assumptions relating to this issue.

Aurora has however provided updated standard asset lives for the components of its distribution network within the revised RIN templates required by the AER.

2.2.9. Forecasts of line length

Aurora's RIN defines forecasts of line length as a key assumption. However, Aurora does not forecast line length to prepare its capital or operating expenditure forecasts and as such this *Revised Regulatory Proposal* does not discuss assumptions relating to this issue.

Aurora has, however, provided updated forecast line lengths for its distribution network within the RIN templates appended as an attachment to this *Revised Regulatory Proposal*.

2.2.10. Inflation

The *Rules* required that Aurora's return on capital must be expressed in nominal terms and that Aurora's regulated asset base must be indexed each *Regulatory Year* to account for the effects of inflation. These requirements mean that Aurora must make assumptions regarding the expected inflation rates for the remainder of the current *Regulatory Control Period* and the forthcoming *Regulatory Control Period*.

Method and information to develop assumption

Aurora has chosen to adopt the AER's preferred method of forecasting CPI. This method adopts the following process:

- plot two years of forecasts from the most recent RBA Monetary Policy Statement; and
- thereafter, plot CPI as the RBA's inflation target midpoint of 2.5 per cent.

Application of the assumption

This assumption applies in all instances where Aurora has provided forecasts that require adjustments for indexation. At the time of submitting this *Revised Regulatory Proposal* the most recent Monetary Policy published by the RBA was in November 2011.

Impact of the assumption

Revised inflation assumptions apply to all forecasts requiring adjustments for indexation.

2.3. Capital expenditure assumptions

As discussed above, Aurora has made a range of assumptions that have been applied across the RIN categories and subcategories of its revised capital expenditure forecasts. The detail provided for each assumption and its impacts is at a level that ensures its broad application across Aurora's capital RIN expenditure subcategories.

2.3.1. RIN category – demand related

RIN subcategory – customer initiated

Aurora's capital contribution methodology and the treatment of capital contributions under this methodology will be consistent with Aurora's customer capital contributions policy which is due for implementation on 1 July 2012. Revisions to the previous Aurora policy will mean that overall, customers will make a greater contribution to new customer connections works. The effect of this assumption over the forthcoming *Regulatory Control Period* will be to reduce Aurora's net new customer connections expenditure compared to the current *Regulatory Control Period* (Aurora will not receive a return on these assets into the future).

RIN subcategory – reinforcements

Revised forecasts are based on consideration of historical demand growth and performance, weather conditions, forecast changes in land use, and on the cost of traditional solutions to network constraints. This means that revised forecasts are based on the costs of traditional solutions, although Aurora will begin trialling, and implementing where feasible, smarter network technologies.

Revised demand forecasts are also based on industry, regional, State and Federal Government economic indicators. This means that revised expenditure forecasts have regard for both historical trends and 2012-17 forecasts.

Revised demand forecasts have been adjusted to account for the connection (or disconnection) of any known major loads to Aurora's network over the forthcoming *Regulatory Control Period*. This means that Aurora is able to more accurately forecast this expenditure.

2.3.2. RIN category – non-demand related

RIN subcategory – reliability and quality improvements

RIN subcategory – reliability and quality maintained

Capitalisation procedures will improve over the forthcoming *Regulatory Control Period* by ensuring that an optimal balance is struck between repair and replacement of assets. Revised expenditure forecasts reflect amendments to asset replacement decision-making.

Revised expenditure forecasts are either based on historical replacement rates or determined based on the risk posed by the issue the replacement program is aiming to address. However, Aurora will progressively increase condition monitoring and this condition information will be used to better prioritise the risk-based replacement programs. This is intended to drive more efficient investment in infrastructure over the period, although the impact of this improved approach is not yet known with certainty.

Adherence to internal asset replacement standards for each of the asset classes will continue and these standards are detailed in the Management Plans for each asset class and were appended as attachments to Aurora's *Regulatory Proposal*.

Historic failure rates and probabilities of outages (and associated risks) are a valid proxy for the forward rates used to develop reliability and power quality expenditure forecasts. It is assumed that no additional, critical technical risks or failure modes will emerge that have not been considered in preparing revised forecasts.

As these risks are consistent with the Aurora risk profile, asset managers are comfortable with the risk profile used to plan reliability and power quality improvements and will make no material changes to related policies.

It is assumed that the *Rules* and *TEC* requirements will remain unchanged during the forthcoming *Regulatory Control Period*. It is further assumed that the current level of reliability is acceptable to the customer. This assumption means that revised forecasts only account for expenditure required to meet current standards.

Compliance with national and Tasmanian technical reliability and power quality maintenance standards will be maintained. This means that revised expenditure in this category will reflect costs driven by the requirement to meet specific regulatory standards.

2.3.3. RIN category – SCADA and network control

A more innovative approach will be adopted in delivering customer outcomes while minimising consequent price increases over the forthcoming *Regulatory Control Period*, however all business cases are not yet at a level that can be justified and certain factors have not been included in revised forecasts. This smarter approach will include the trial and implementation of smarter network technology.

The impact of this assumption is that Aurora's revised capital expenditure in this *Regulatory Proposal* does not necessarily reflect all efficiencies that will flow from smarter network investment initiatives.

2.3.4. RIN category – non-network

RIN subcategory – IT and communication

An Aurora-wide review of all IT systems has been undertaken by an independent expert advisor, Enterprise Architects. This review has resulted in the development of a strategy for IT system deployment within Aurora and was appended as a confidential attachment to Aurora's *Regulatory Proposal*. Expenditure forecasts account for the implementation of this strategy during the forthcoming *Regulatory Control Period*.

RIN subcategory – other

Aurora must comply with a range of safety, health and environmental obligations under both national and Tasmanian legislative and regulatory instruments. It is assumed that there will be no material changes to any of the key instruments with which Aurora must comply, including electrical safety, workplace health and safety, and environmental obligations. This assumption means that revised forecasts only account for expenditure required to meet current standards.

RIN subcategory – property

Aurora has, or will, complete a number of property acquisitions and developments during the current *Regulatory Control Period*; such as the consolidation of the Network division within Kirksway Place and the redevelopment of the Mornington training centre. This will result in a lessening of property related capital expenditure during the forthcoming *Regulatory Control Period* and it is assumed that revised expenditure will fall to levels expected from normal care and maintenance.

RIN subcategory – motor vehicle

RIN subcategory – plant and equipment

It has been assumed that vehicle, plant and equipment standards and practices will be maintained during the forthcoming *Regulatory Control Period*. This means that revised expenditure in this category will reflect costs driven by the requirement to meet current practices and standards.

2.4. Operating expenditure assumptions

As discussed above, Aurora has made a range of assumptions that have been applied across the RIN categories and subcategories of its revised operating expenditure forecasts. The level of detail provided for each assumption ensures its broad application across Aurora's operating RIN expenditure subcategories.

2.4.1. RIN category – operating costs

RIN subcategory – network divisional management

The GSL Scheme, which requires payments to be made to customers on the basis of the frequency and duration of outages, will continue in its current form. In accordance with clause 6.6.2 of the *Rules*, Aurora is obliged to operate under the GSL Scheme issued by OTTER, rather than that developed by the AER.

Network division management costs are currently classified by OTTER as prescribed or regulated distribution services. The *Rules* requirement to classify distribution services as either standard control, alternative control, negotiated or unregulated has required a re-allocation of network division management costs to these service classifications. Revised expenditure forecasts reflect this reclassification and result in a change in the costs previously associated with this activity.

2.4.2. RIN category – non-network divisional management

RIN subcategory – system operations

Operations of the distribution network are governed by Aurora's internal operating procedures. Aurora has assumed that internal operating standards for the distribution network will continue in their current form and that revised expenditure in this category will reflect costs driven by the requirement to meet current standards.

RIN subcategory – corporate and shared services costs

Corporate and shared services costs are currently classified by OTTER as prescribed or regulated distribution services. The *Rules* requirement to classify distribution services as either standard control, alternative control, negotiated or unregulated required a re-allocation of corporate and shared services costs to these service classifications. Revised expenditure forecasts reflect this reclassification and result in a change in the costs previously associated with this activity.

RIN subcategory – NEM and contestability related costs

Aurora has assumed that the NECF package will commence as of 1 July 2012 and the final package will not materially deviate from what is proposed at the time of drafting this *Revised Regulatory Proposal*. The impact of this assumption is that there should be no additional systems and process costs on Aurora during the forthcoming *Regulatory Control Period* as a result of compliance with NECF requirements.

The Tasmanian Government introduced a further tranche of retail contestability starting 1 July 2011 (tranche 5A). Aurora has assumed that there should be no additional systems and process costs to Aurora during the forthcoming *Regulatory Control Period* as a result of compliance with tranche 5A requirements other than those already considered or implemented.

Aurora understands that the introduction of further tranches of retail contestability or full retail competition within Tasmania is not currently a Government policy and will be considered by the Expert Panel as part of its review. Aurora has assumed that there will be no further tranches of contestability and changes to regulatory and legislative frameworks are not included in revised forecasts. Any costs could only be passed through to customers if Aurora meets the *Rules* requirements for a pass through event.

2.4.3. RIN category – maintenance costs

RIN subcategory – routine maintenance

Aurora's maintenance works are governed by individual Management Plans for each asset class and as such works over the forthcoming *Regulatory Control Period* will be carried out in accordance with the intervals prescribed within the Management Plans. These Management Plans were appended as attachments to Aurora's *Regulatory Proposal*. Where changes have occurred to these Management Plans as a result of the AER's *Draft Distribution Determination*, revised Management Plans are appended as an attachment to this *Revised Regulatory Proposal*.

RIN subcategory – non-routine maintenance

Aurora must comply with a range of safety, health and environmental obligations under both national and Tasmanian legislative and regulatory instruments. It is assumed that there will be no material changes to any of the key instruments with which Aurora must comply, including electrical safety, workplace health and safety, and environmental obligations. This assumption means that revised forecasts only account for expenditure required to meet current standards.

Historic failure rates and resultant outages are a valid proxy for the forward failures and outages used to develop emergency and unscheduled power system expenditure forecasts. It is assumed that no additional failure modes will emerge that have not been considered in preparing revised forecasts and that third party fault causes will not vary a lot over time.

Aurora's vegetation management expenditure is driven by obligations under the *TEC* and the associated compliance activities contained within Aurora's vegetation Management Plan. It is assumed that there will be no material changes to Aurora's obligations under the *TEC*. This Management Plan was appended as an attachment to Aurora's *Regulatory Proposal*.

Aurora's fire mitigation works are governed by an individual Management Plan and as such works over the forthcoming

Regulatory Control Period will be carried out in accordance with the Management Plan. This Management Plan was appended as an attachment to Aurora's *Regulatory Proposal*.

Aurora's connection asset repair activities are governed by individual Management Plans and, as such, works over the forthcoming *Regulatory Control Period* will be carried out in accordance with the intervals prescribed within the Management Plan. This Management Plan was appended as an attachment to Aurora's *Regulatory Proposal*.

3. Forecasts

3. Forecasts

This chapter sets out Aurora's high level methodology for the development of its forecasts for load growth or demand forecasts (typically MW), energy consumption (GWh) and customer numbers for the distribution network for the forthcoming *Regulatory Control Period*.

3.1. AER's Draft Distribution Determination

The AER has modified or replaced the majority of the Aurora's forecasts with more up-to-date data as part of its review of the Aurora *Regulatory Proposal*. Aurora has in turn updated a number of its previous forecasts to reflect more up-to-date data sets and includes those updates as part of this *Revised Regulatory Proposal*.

Aurora understands that the AER may, in turn, update these revised forecasts to reflect up-to-date information as part of the AER's *Final Distribution Determination*.

The AER's consultants, SKM MMA, also made a number of observations regarding Aurora's demand forecasts and associated methodologies. A number of these observations have been addressed by ACIL Tasman in the preparation of revised demand forecasts.

The SKM MMA considered that the general basis of Aurora's method of forecasting maximum demand was appropriate and consistent with current industry practices, however the AER has disagreed with the application of the method in the following four areas:

- reconciling to Transend's state maximum demand forecast;
- measuring the impact of temperature on maximum demand;
- adjusting demand to a level of demand consistent with a median temperature; and
- applying growth rates to 'base' demand for individual assets.

Aurora considers that the demand forecasting methodologies now meet the AER requirements and Aurora does not expect any other changes in approach by the AER. These matters are discussed in detail in the response prepared by ACIL Tasman which is appended as an attachment to this *Revised Regulatory Proposal*.

The AER also indicated that it had developed substitute forecasts of new customer connections that accounted for net connections and an adjustment for expected demolitions. Aurora has accepted the AER forecasts as the basis of its new customer connections.

3.2. Demand forecasts

As part of its review of the demand forecasts contained within the Aurora *Regulatory Proposal*, SKM MMA were critical of Aurora's methodology relating to the reconciliation with a system level forecast. As a result of the SKM MMA analysis, Aurora, in conjunction with ACIL Tasman, has prepared an independent system level forecast that no longer relies on the forecast (including methodology) used by NIEIR in preparing Transend's demand forecast.

3.2.1. Load forecast methodology

Aurora's underlying approach is to project load growth forward at each connection site at a rate that is consistent with recent history. These spatial forecasts are then aggregated, using diversity factors, to a system level forecast (bottom-up). This bottom-up forecast is then compared to, and reconciled with, a forecast at the system level (top-down).

The system level forecast is taken from that prepared by ACIL Tasman in conjunction with Aurora.

Spatial forecasts, in MW and MVA, are prepared for the individual connection sites.

Demand forecasts are prepared for both summer (December-February) and winter (June-August) periods.

3.2.2. Data management

Production of the forecasts requires data series that are quite specific. Aurora undertakes data 'cleaning' in the context that:

- adjustments are made for loads that have been permanently switched from one connection point to another; and
- validation is undertaken to ensure that the data is reasonably free of problems, like missing observations and other errors.

For the purposes of the modelling Aurora utilises, where possible, a daily demand time series (denoted in MW) for the summer and winter periods for each of the connection sites, extending back a minimum of five years.

Aurora also considers any permanent transfers between substations both historically and for the forecast period. These are required to correct for any past and expected discontinuities in the dataset which, if not accounted for, may result in biased forecasts. Past details of major block loads and details of forecast block loads that will cause a discontinuity in the time series are also used.

In addition to block loads and permanent transfers, details of any demand side management (DSM) and irrigation loads which will affect the peak in each historical forecast period are also accounted for. Adjustments are then made to the underlying time series before any time trend regressions or growth factors are applied.

Another factor accounted for is embedded generation. Aurora considers that the best approach is to include embedded generation in the original daily time series for each substation (which is used for weather correction) but, if it is outside its normal operational mode, to adjust the contribution of any embedded generation from the peak in each season before extrapolating into the forecast period.

3.2.3. Weather correction

Aurora weather corrects the data to the 10 and 50 per cent probability of exceedence levels (POE).

SKM MMA was critical of Aurora's use of weekend data as part of the weather correction undertaken with the demand data. ACIL Tasman has addressed this anomaly and have produced weather corrected forecasts that are derived from weekday data only.

Weather correction in demand forecasting

The random nature of weather means that any comparison of historical electricity loads over time requires these loads to be adjusted to standardise weather conditions. Typically, actual demand is standardised to either, or both, of 10 and 50 per cent POE. The 50 per cent (10 per cent) POE demand level is the annual maximum level that, on average, would be met or exceeded 50 per cent (10 per cent) of the time. It can be thought of as the maximum demand that would be observed or exceeded once every two (10) years on average.

As the intent of load forecasting is to forecast maximum demand at a given POE level, any trend relationships of spatial maximum demand that are based on non-weather normalised data could be susceptible to bias, particularly if the historical data contains a number of extreme seasons. It is imperative that any demand forecasting methodology incorporates an appropriate form of weather normalisation or correction. This is true at all levels of the network, from the feeder to the system level.

Aurora's approach to weather correction

Aurora's approach to weather correction involves estimating a regression between the daily maximum demand (MD) at a connection site and a selection of weather variables from a suitable weather station.

Those substations that tend to peak in the morning will have coefficients that are weighted more towards the daily minimum, whereas those that peak in the afternoons will have a higher temperature sensitivity for the daily maximum.

The temperature sensitivities are calculated for each year in the time series. For example, to temperature-correct five winter peaks from 2006, Aurora will estimate five separate regressions between the daily MD and temperature/weather variables for each winter season from 2006 onwards.

Individual temperature sensitivities are calculated for each of Aurora's connection sites. Before estimating the temperature sensitivity coefficients, it is important to note that Aurora removes weekends from the time series, as these almost never correspond to seasonal peaks. In the case of summer, in addition to removing the weekends, Aurora removes the Christmas/New Year period, which usually corresponds to lower demand.

The actual season peak is then adjusted along the regression line towards a long run weighted average temperature which corresponds to the 10 and 50 per cent POE weighted average temperature. The weightings are determined by the coefficients on the daily maximum and daily minimum temperature variables from the temperature sensitivity regressions.

3.2.4. Adjusting for significant block loads, permanent transfers and other factors

Before applying any form of regression analysis or growth factor to historical weather corrected peak demands, these are adjusted for transfers to and from the substation as well as significant block loads that comprise a large proportion of the loads at the specific connection site. The effects of transfers and large block loads are removed from the historical data series before any trends are fitted or growth rates are determined. These are later added back to the forecasts.

Forecasts are also adjusted for predicted transfers and large block loads expected to arise during the forecast period. Expected block loads are added to the forecast only if they stand out as unusual or significant when compared to the history of the connection site in question. If they are not unusual, the underlying trend growth estimated by fitting linear trend through the historical data will incorporate these types of loads.

As a general rule, only loads that are greater than five per cent of the total load at a connection site are added onto the forecast. Loads smaller than the threshold are assumed to be captured by the underlying trend in the time series.

If unusual or significant block loads are expected, their size and the likelihood that they will materialise is estimated and the product of these two factors is added to the forecast at the appropriate time.

The size of spot loads is estimated in terms of contribution to load at the time of connection site peak demand. Some types of load may be at full demand when the system peaks, others may not.

The same approach is used for expected reduction in load as a result of any demand side management projects (treated as negative loads).

In addition to adjustments for block loads and permanent transfers, it is also necessary to make adjustments for irrigation loads and the effect of any embedded generation operating at the time of peak demand for each connection site.

3.2.5. Developing the forecasts

Once data has been temperature/weather corrected and adjusted for large block loads and permanent transfers, demand forecasts are produced.

The basic approach is to extrapolate from recent history using linear time trends (over varying time frames) or applying growth rates based on historical behaviour to the most recent temperature-corrected observation.

This methodology is applied to non-coincident peak demands for each substation. Diversity factors are applied to the aggregated forecasts to derive an overall system demand for each season in the forecast period.

Reconciliation with system level forecasts (top-down)

In response to observations made by SKM MMA, ACIL Tasman has provided updated system level forecasts. The forecasts are then reconciled with the medium economic growth scenario of these system level forecast by applying a proportional adjustment to each of the individual substations so that the sum of the coincident demands corresponds to the system demand forecast in each year of the forecast period.

The adjusted coincident substation forecasts are converted back to non-coincident peaks using the same diversity factor as applied previously. The diversity factors applied during the forecast period are related to historical behaviour, generally an average of the last three or five years.

Reconciliation with a system level forecast has the advantage of allowing the methodology to incorporate the impacts of broader macroeconomic and demographic aggregates, as well as the impacts of new policy initiatives, which are better modelled at the system level. System level data is also smoother and more amenable to the fitting of econometric models that can be used to generate more accurate system level forecasts.

Internal review of forecasts

The derived forecasts are reviewed by an Aurora employee with experience of the relevant connection site. This employee makes sure that the forecast 'fits' with the site in question and uses engineering judgement to make adjustments where it does not. In particular, the use of old data creates a tendency for forecasts to 'miss' changes in growth rates. For example:

- the forecasts may be too low in areas which are about to become (or have recently become) high growth areas;
- conversely, the forecasts may be too high in areas that have recently reached 'maturity'; or
- growth in industrial load will likely reflect growth in Tasmania's gross state product (GSP). If GSP is expected to accelerate (decelerate) over the forecast period, the forecasts will tend to under (over) estimate actual growth.

Any changes that are made through this process are recorded with supporting evidence. These records form part of the documentation of the forecasts.

3.2.6. ACIL Tasman system level forecast

Model approach

The ACIL Tasman methodology is based on multivariate linear regression. This involves fitting a multi-dimensional linear function through the daily winter/summer maximum demand data so as to minimise the total squared errors between the fitted line and the observed data.

Model specification

The maximum demand model takes the form:

$$Load = c+\beta_1 \times GSP+\beta_2 \times Max\ temp \times Aircon/heaters + \beta_2 \times Min\ temp \times Aircon/heaters+ \varepsilon$$

In this equation, the winter/summer season daily maximum demand is explained by a constant term, the level of Tasmanian Gross State product and the daily maximum and minimum temperature. The trend driven by economic and population growth is captured by the inclusion of the GSP term, and temperature related variation is captured by the inclusion of the daily maximum and minimum temperatures. In the ACIL Tasman model specification the maximum and minimum daily temperatures at both Hobart and Launceston weather stations are used.

The model also allows the temperature sensitivity of the distribution network to increase over time, reflecting the fact that the number of households with reverse cycle air-conditioners/heaters is increasing over time both as a consequence of increasing market penetration of these appliances and population growth.

Any variations in the daily peaks that are not captured by GSP and temperature are soaked up by the error term.

Weather correction simulation to generate 10 and 50 per cent POE demands

The calibrated models form the basis of any forecasts generated. Forecast inputs such as GSP and the number of household air-conditioners/heaters are constructed and used as inputs into the calibrated models to generate forecasts.

There is no requirement to forecast future weather conditions. The impact of weather on the forecast is incorporated probabilistically by running the last 30 years of daily weather data from the Hobart and Launceston weather stations through the calibrated model. The maximum demands for each of the historical season peaks using the calibrated model forms the distribution from which the 10 per cent and 50 per cent POE demands are derived.

In addition, because the model estimates daily demand and the interest is in the peak of the season, the standard error of the regression is used to play a role in the simulation. While the calibrated models produce good fits, they are not able to capture all of the variation in the daily maximum demands. By accounting for the imperfect fit of the models, the tendency of the calibrated models to under predict the peak demand is reduced.

3.2.7. Forecast results

Aurora's revised forecast is based on a medium economic growth scenario with a 50 and 10 per cent POE.

3.2.8. Demand side management

Aurora is proposing a range of demand management initiatives for the forthcoming *Regulatory Control Period* that are associated with the introduction of the AER's DMIS, as outlined in chapter 26 of Aurora's *Regulatory Proposal*.

As Aurora is yet to finalise these proposals and subsequently gain approval from the AER for any DMIS related activity, the impact of those programs has not been included in this forecast.

3.2.9. Embedded generation

As noted in the methodology, the demand forecast includes embedded generation operating in its normal mode at the time of peak demand.

Currently there are 10 individual embedded generators of greater than 500 kW rating connected to the distribution system, with a total generation capacity of approximately 24 MW. Under normal operation, the total generation into the distribution system at time of summer and winter maximum demand is in the order of 10 MW.

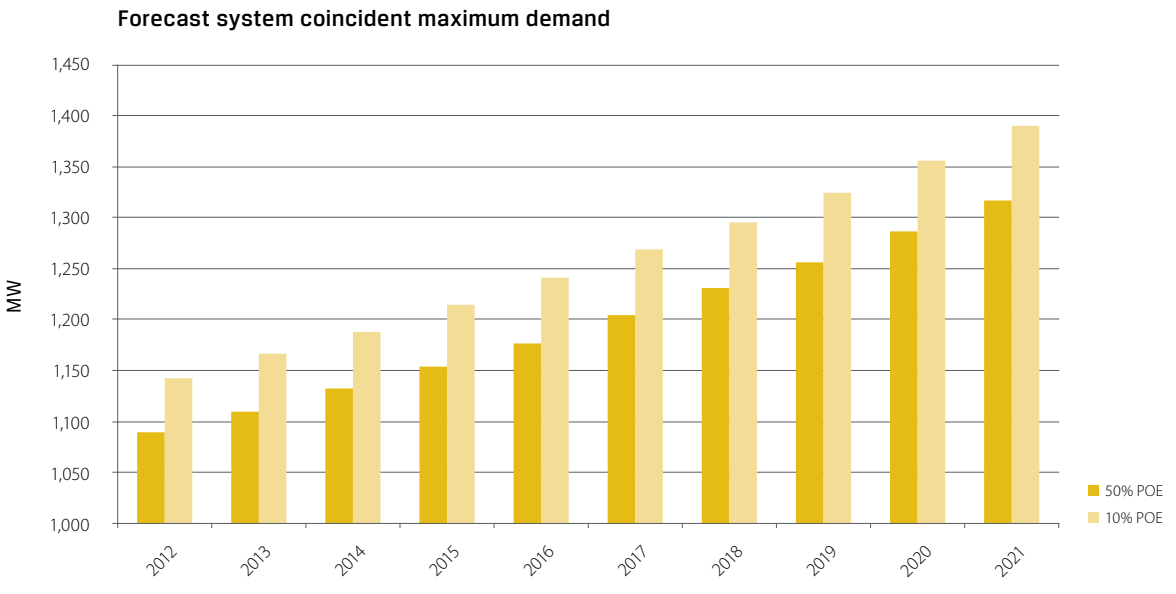
In addition there are approximately 4,900 photo voltaic (PV) systems currently connected to the distribution network, with an average rating of 1.7 kW. Due to the nature of operation of these units (they only generate during hours of daylight) and their dispersion around the distribution network, they do not have a material effect on the winter peak demand, and only a limited effect on the summer peak demand.

3.2.10. System forecast

Figure 3 presents the 10 year revised distribution system forecast of maximum demand for the winter period.

Figure 3

Forecast coincident maximum demand



3.3. Energy consumption forecasts

This section of Aurora's *Revised Regulatory Proposal* sets out Aurora's high level methodology for the development of its revised forecasts for energy consumption (GWh) for the distribution network for the forthcoming *Regulatory Control Period*.

In light of the continued softening in market conditions that have occurred subsequent to the submission of Aurora's *Regulatory Proposal*, Aurora has engaged ACIL Tasman to provide updated energy consumption forecasts for the forthcoming *Regulatory Control Period*.

3.3.1. Consumption forecast methodology

ACIL Tasman has produced an independent energy forecast for six customer classes for Aurora's forthcoming *Regulatory Control Period*. The forecast period also includes the period 2011-12 and therefore encompasses the period 2011-17.

The six customer classes are:

- residential;
- small business – LV;
- large business – LV;
- large commercial – HV;
- irrigation; and
- unmetered supplies.

The ACIL Tasman approach is to estimate multiple regression models for each customer class against a set of drivers which differ for each class and which are validated using standard statistical tools such as goodness of fit, correlation (R^2) and statistical significance (*t*-test).

The key drivers for residential energy consumption are population growth and weather variation. For the small and large business – LV customers, the key driver of energy consumption is economic growth (GSP). Irrigation energy consumption is driven predominantly by variation in annual rainfall. Unmetered supply is driven by growth in Tasmanian GSP.

The large commercial – HV customers contain only a very small number of very large energy customers. In this case, ACIL Tasman considers that a regression based approach is not appropriate as the forecasts would be highly sensitive to changes in company specific factors. The best approach to forecasting energy consumption for very large customers is to survey them regularly to determine their energy requirements. This is the approach taken by Aurora and ACIL Tasman has chosen to adopt Aurora's forecasts for these customers.

Key inputs into the ACIL Tasman forecasting process are projections for Tasmanian economic and population growth rates. For the purposes of ACIL Tasman's economic forecasts, the GSP growth forecasts published in the 2011-12 budget documents of the Tasmanian Government are utilised. ACIL Tasman's population forecasts are the series B population projections produced by the Australian Bureau of Statistics (ABS).

3.3.2. Economic and demographic drivers

Economic growth

It is assumed in modelling that increasing energy use is driven by higher disposable incomes and subsequent demand for new appliances and equipment. It is also driven by increasing commercial and industrial activity.

ACIL Tasman considers that, while the increase in electrical appliances can be expected to have a positive impact on energy consumption, the overall impact is uncertain. For example, many new appliances are considerably more energy efficient than those they replace, potentially leading to lower energy consumption per household.

Economic growth is a major driver of rising incomes and hence growth in energy sales. In addition, it reflects the extent to which economic output is increasing, of which electricity is a key input, particularly for energy intensive manufacturing industries.

The outlook for the Tasmanian economy is relatively weak. As a state that is not generally participating in the resources-led boom which is benefitting resource-rich states such as Queensland and Western Australia, Tasmanian economic activity is being detrimentally affected by the strong Australian dollar (relative to the US dollar).

ACIL Tasman considers that the higher Australian dollar is likely to have an impact on Tasmanian economic activity by hurting:

- agricultural exports and import competition;
- domestic tourism, with the high dollar making overseas travel more attractive and limiting overseas arrivals;
- the manufacturing sector; and
- international education exports.

Recent analysis conducted by the Commonwealth Bank of Australia (CBA), predicts that employment growth in Tasmania will average just 1.25 per cent in 2010-11 and 2011-12, with an associated unemployment rate of 5.75 per cent over the same period.

The CBA also forecasts GSP growth to remain significantly below the long run growth rate of 2.25 per cent. The CBA forecasts a rate of growth of 1.25 per cent in 2010-11 followed by 1.5 per cent in 2011-12.

In its 2011-12 budget, the Tasmanian Government projected a more optimistic rate of growth of 1.75 per cent in 2011-12, increasing to 2.25 per cent from 2012-13 to 2014-15.

Population growth

Energy sales growth shows a steady upward trend. This rising trend has been driven by the growth in connections, offsetting reduced energy consumption per connection. Increasing residential customer numbers are driven by household formation arising from population growth.

Population growth in Tasmania has gone through periods of both relatively strong growth and also periods of stagnation or decline. In the years between 2000 and 2010, the estimated resident population of the State grew by 0.74 per cent per annum, reaching 507,603 by the June quarter of 2010. Over a one and five year time horizon, Tasmania's population growth has averaged 0.9 per cent per annum. Longer term growth rates are significantly lower.

A key input into generating energy consumption forecasts is the projected population for the State. The ABS produces three distinct population projections for Tasmania, known as Series A, B and C. Series A and C are the optimistic and pessimistic scenarios respectively. Series B is the mid-point, which is the scenario that ACIL Tasman adopts for the purposes of producing its energy consumption forecasts.

Under the Series B population scenario, the ABS projects Tasmania's population to reach 537,188 by June 2020, an average growth rate of 0.6 per cent per annum. This ten year forecast is slightly lower than the actual result of 0.7 per cent per annum for the ten years to 2009-10.

ACIL Tasman considers that the rate of household formation is likely to follow population growth closely, given the relatively stable number of 2.4 persons per household for Tasmania in 2006 from data obtained from the ABS Census.

Weather variables

Air temperature

Variations in average weather conditions over the course of a year may drive movements in energy consumption. While a single extreme day is sufficient to result in a season peak maximum demand, that day will make only a small contribution to total annual energy sales. A measure of the overall hotness or mildness of a season is likely to be a better indicator of how temperature is affecting energy consumption. ACIL Tasman assesses the impact of average weather conditions with the concept of heating degree days (HDD) and cooling degree days (CDD).

HDD is a measure designed to reflect the amount of energy required to heat a home or business, while the CDD is designed to reflect how much energy is required to cool a home or business.

In the case of Tasmania, energy consumption is predominantly driven by colder weather which leads to higher energy consumption related to space and hot water heating. Unlike other Australian states, summer peak demand is also predominantly driven by colder rather than hot days. For this reason, ACIL Tasman considers that the more likely driver of energy consumption is heating degree days rather than cooling degree days.

Rainfall

ACIL Tasman considers that annual rainfall will be a significant determinant of energy consumption for the irrigation customer class. Periods of below average rainfall would be expected to correspond to an increased need to irrigate crops resulting in higher energy consumption. Conversely, in periods of above average rainfall, the need to irrigate crops is reduced and hence energy consumption associated with pumping to supply irrigation is also reduced.

Electricity prices

ACIL Tasman considers that another potential driver of energy consumption is the retail price of electricity as there is a negative relationship between price and consumption. Energy consumers are likely to exhibit some sensitivity to rising energy costs, particularly in 2008-09, 2009-10 and 2010-11 as retail prices increased by substantially more than the preceding years where retail prices exhibited more modest rates of growth.

Retail tariffs were relatively stable up to 2007 across all tariff classes, before commencing a more rapid ascent. ACIL Tasman considers that it is therefore reasonable to expect that the strong price rises of recent years have had a dampening effect on energy consumption across the main customer classes.

The degree of responsiveness of energy consumption to changes in price is known as the price elasticity of demand. The degree of responsiveness is thought to differ considerably across customer classes, with residential customers thought to be generally less responsive to price changes compared to commercial and industrial users. This is because energy costs comprise a significantly larger proportion of the total expenditures of large energy users, so that significant price increases might be expected to lead to adaptive behaviour designed to reduce energy consumption and hence costs.

3.3.3. Forecast results

ACIL Tasman has produced energy consumption forecasts for the six customer classes of:

- residential;
- small business – LV;
- large business – LV;
- large commercial – HV;
- irrigation; and
- unmetered supplies.

Figure 4 and Figure 5 present the ACIL Tasman energy consumption forecast for the distribution network and each customer class.

Figure 4

Forecast energy consumption

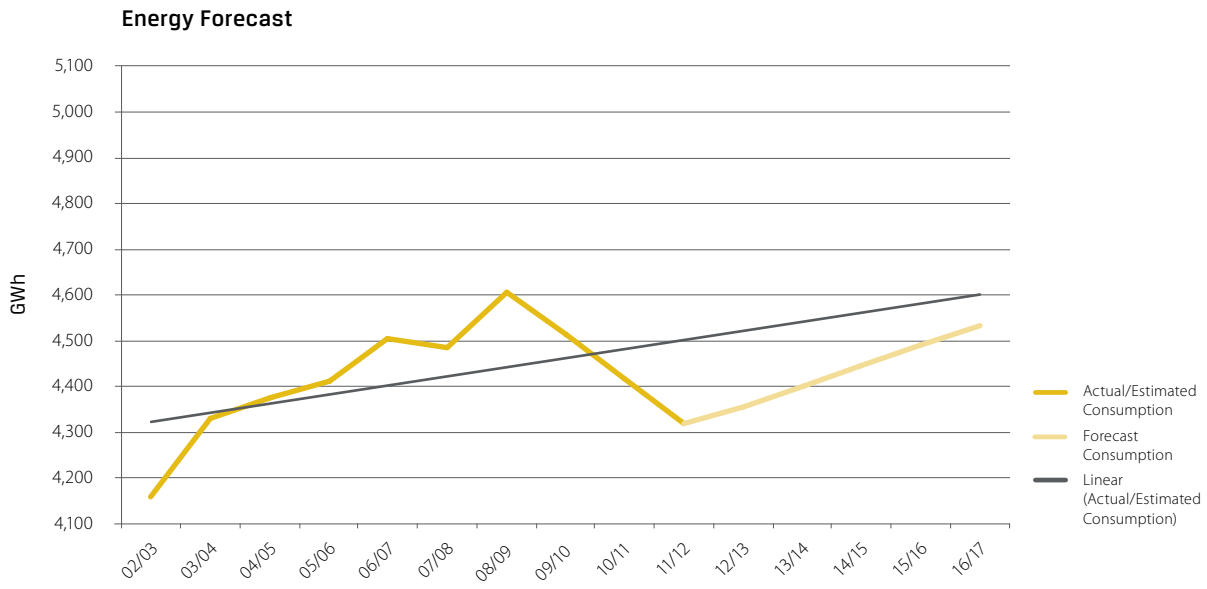
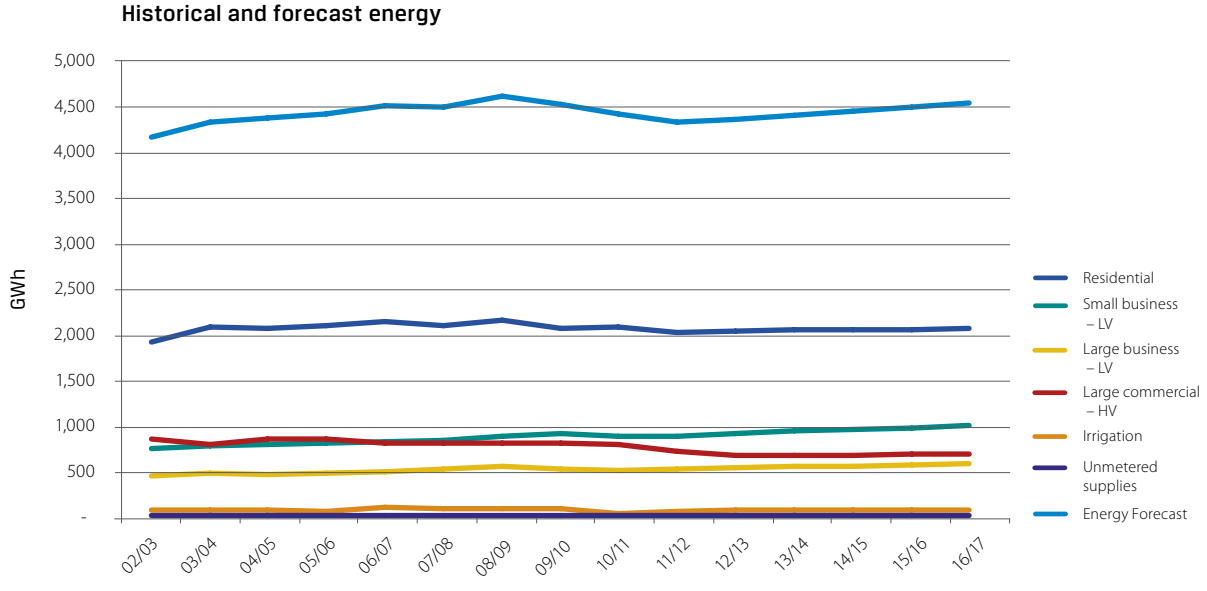


Figure 5

Forecast customer class energy consumption



3.4. Customer number forecasts

This section of Aurora's *Revised Regulatory Proposal* sets out Aurora's high level methodology for the development of its revised forecasts for customer numbers for the distribution network for the forthcoming *Regulatory Control Period*.

In light of the continued softening in market conditions that have occurred subsequent to the submission of Aurora's *Regulatory Proposal*, Aurora has engaged ACIL Tasman to provide customer number forecasts for the forthcoming *Regulatory Control Period*. These revised forecasts have been compared to those developed by the AER to ensure that the AER's forecasts are a valid basis for the forthcoming *Regulatory Control Period*.

The ACIL Tasman forecasts are generally consistent with those proposed by the AER and Aurora has therefore adopted the AER forecasts as the basis for for new customer connections.

3.4.1. Customer forecast methodology

Aurora's revised forecast of customer numbers for the period 2011-17 has been prepared by ACIL Tasman. ACIL Tasman has produced revised forecasts of new customer connections for each of the following groups or customer classes:

- residential connections;
- commercial connections;
- irrigator connections; and
- residential subdivisions (number of lots).

ACIL Tasman has produced disaggregated revised forecasts for each customer class across the three distinct regions of:

- north;
- north west; and
- south.

New residential and commercial customer connections are further split between overhead and underground connections.

Forecasts for all customer classes do not include new connections that require only a simple service connection.

3.4.2. Developing the forecasts

An econometric methodology has been applied by ACIL Tasman to forecast new customer connections. This approach requires the estimation and testing of statistical relationships between the number of new connections and the underlying drivers that influence the number of new connections.

Residential and commercial connections

The most obvious driver for new residential and commercial connections is the number of new buildings. ACIL Tasman has utilised the ABS Building Approvals Series[1] and Building Activity Series[2] for Tasmania as a proxy for the level of building activity.

Both series show a steady increase in the number of annual residential dwelling approvals or commencements with the exception of a sharp fall in the 2005-06 year.

The econometric approach utilised by ACIL Tasman entails the establishment of a relationship between the number of new connections and building activity. This relationship is used to forecast new connections based upon projections of building activity. The ABS does not however produce a projection for building approvals or activity.

The Housing Industry Association (HIA) is a potential source of residential construction activity forecasts. The HIA model produces forecasts for new housing, renovations, non-residential buildings and engineering construction. The HIA has indicated that its forecasting model takes account of the following factors:

- economic growth;
- interest rates;
- employment growth;
- consumer confidence;
- level of oversupply, or pent-up demand for housing;
- interstate and overseas population movements;
- household formation; and
- land availability.

Unfortunately the HIA forecasts are for only two years.

ACIL Tasman has also utilised forecasts provided by the Construction Forecasting Council (CFC). A key advantage of the CFC forecast is that they extend beyond five years. The CFC provides:

- regular short and long term forecasts of the construction and property sectors;
- profiles of national construction activity for major non-residential building and engineering projects across Australia; and
- analysis of the factors driving supply and demand and economic scenarios that underpin the forecasts and sensitivity analysis.

CFC forecasts distinguish 20 categories of construction activity in each State and Territory. The forecasts take into account current (and expected) economic fundamentals along with detailed current and forthcoming activity data published by the ABS and Reed Data Construction, combined with industry intelligence from CFC members.

Irrigation connections

ACIL Tasman examined a range of explanatory variables to forecast the number of new irrigators connected to the Aurora network. ACIL Tasman considered historical time series of irrigation activity from the ABS publication Water use on Australian Farms[3], and looked for any statistical correlations that might exist between the number of new irrigation connections and changes in the total area of irrigated land and the volume of water applied. ACIL Tasman was not able to identify any statistically significant correlations.

For this reason the approach taken to forecasting the number of new irrigation connections is to fit a historical time trend to the data as well as an additional autoregressive term to the model errors to capture some of the dynamics around the upward trend

1 ABS: Catalogue number 8731.0
2 ABS: Catalogue number 8752.0
3 ABS: Catalogue number 4618.0

Regional disaggregation

ACIL Tasman has utilised econometric models relating new connections to real building construction activity and the CFC forecasts to generate forecasts at the Tasmania level for both new residential and commercial connections. Conversely, in the case of irrigation, a simple time trend is applied.

ACIL Tasman has chosen to apply a continuation of the historical trend in the share of total connections across each region in order to disaggregate the forecasts generated across the whole of Tasmania into three separate geographical regions. This was done by estimating a time trend regression for the share of total connections within each region for each of the customer types. These were then extrapolated into the future based on the time trend regression and these forecast shares are used to allocate the total forecast customer numbers across each of the three regions.

Allocation between overhead and underground connections

The split between the number of underground and overhead connections for new commercial and residential connections is determined by estimating separate time trend regressions of the proportion of new connections that are overhead. These regressions are undertaken for each of the three regions. Based on these trends the proportion of overhead versus underground connections for each region is projected into the forecast period.

3.4.3. Developing the forecasts

Output from the statistical models forms the basis of the revised forecasts that have been prepared by ACIL Tasman.

In the case of new residential connections (including subdivisions) a regression was estimated by ACIL Tasman, with the real value of residential construction used as an explanatory variable. For commercial connections, the real value of non-residential construction was the main explanatory variable.

The revised new connection forecasts were then generated by applying the forecasts of residential and non-residential construction published by the CFC to the fitted models.

In the case of irrigation, the main driving variable was the historical time trend.

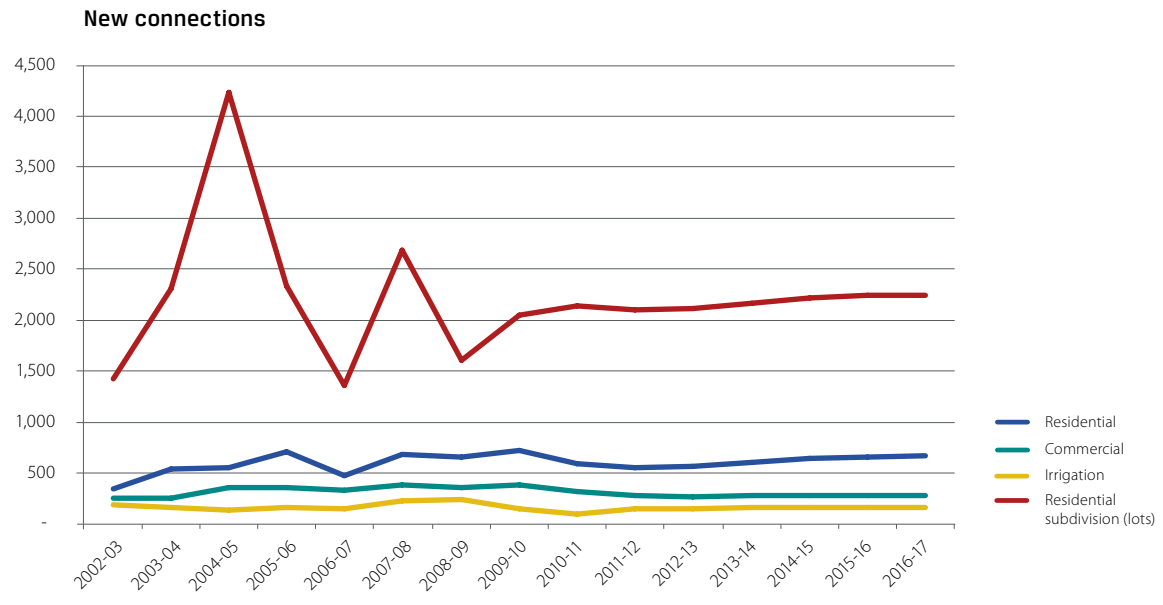
Additional terms were added to the models by ACIL Tasman to capture the dynamic behaviour of the forecast time series.

3.4.4. Forecast results

Figure 6 shows the revised customer forecast for residential, commercial, irrigation and residential subdivision (lots) for the forthcoming *Regulatory Control Period*.

Figure 6

Forecast customer numbers

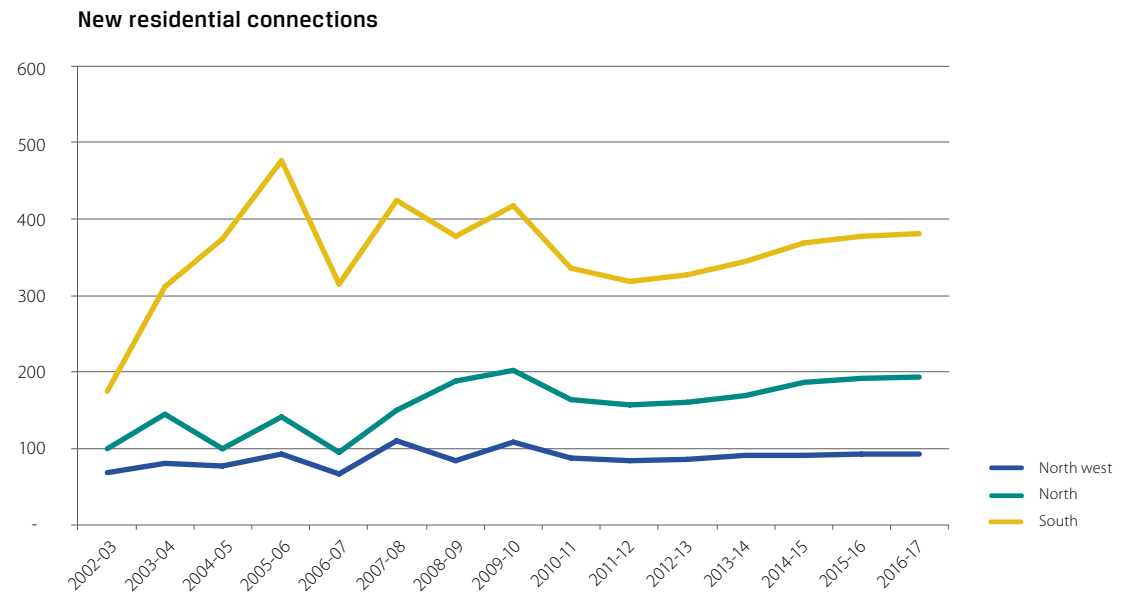


Residential customers

Figure 7 shows the revised residential customer forecast for the north west, north and south regions for the forthcoming *Regulatory Control Period*.

Figure 7

Forecast residential customer numbers

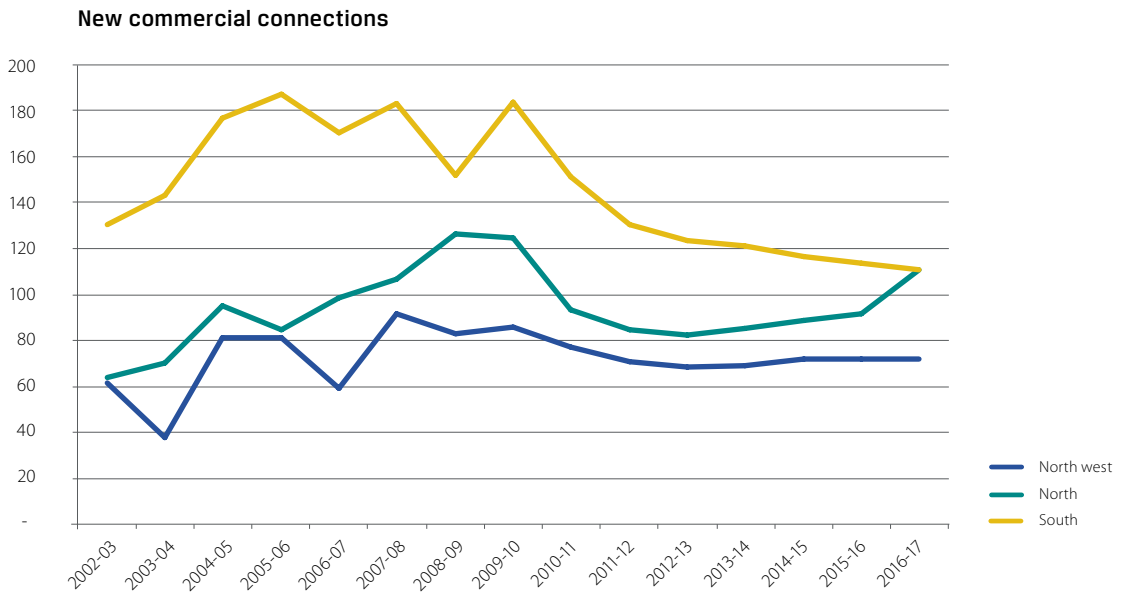


Commercial customers

Figure 8 shows the revised commercial customer forecast for the north west, north and south regions for the forthcoming *Regulatory Control Period*.

Figure 8

Forecast commercial customer numbers

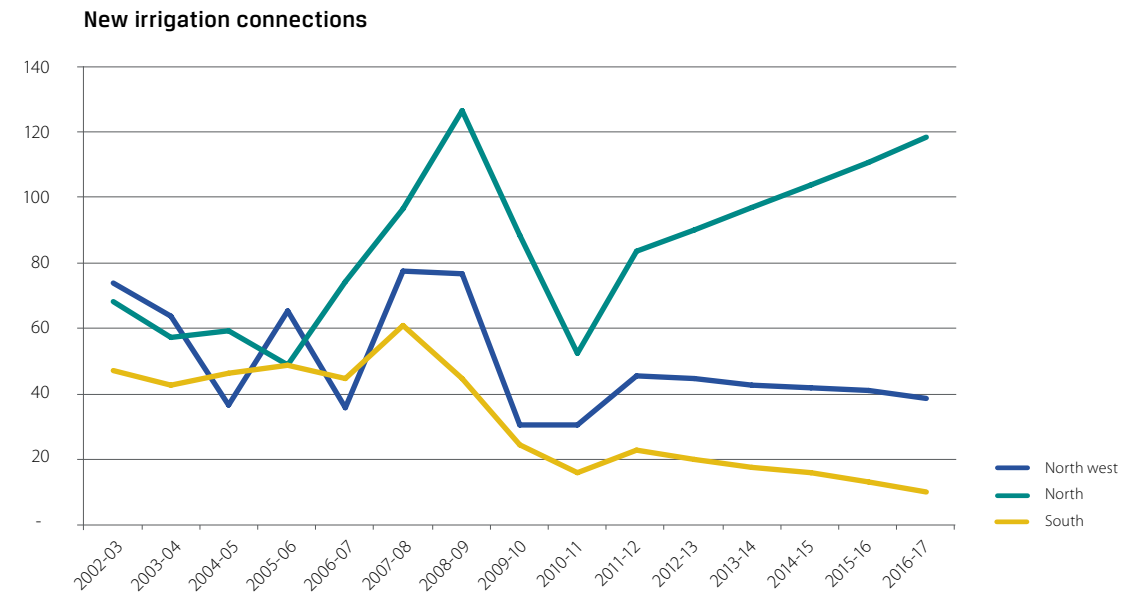


Irrigation customers

Figure 9 shows the revised irrigation customer forecast for the north west, north and south regions for the forthcoming *Regulatory Control Period.*

Figure 9

Forecast irrigation customer numbers

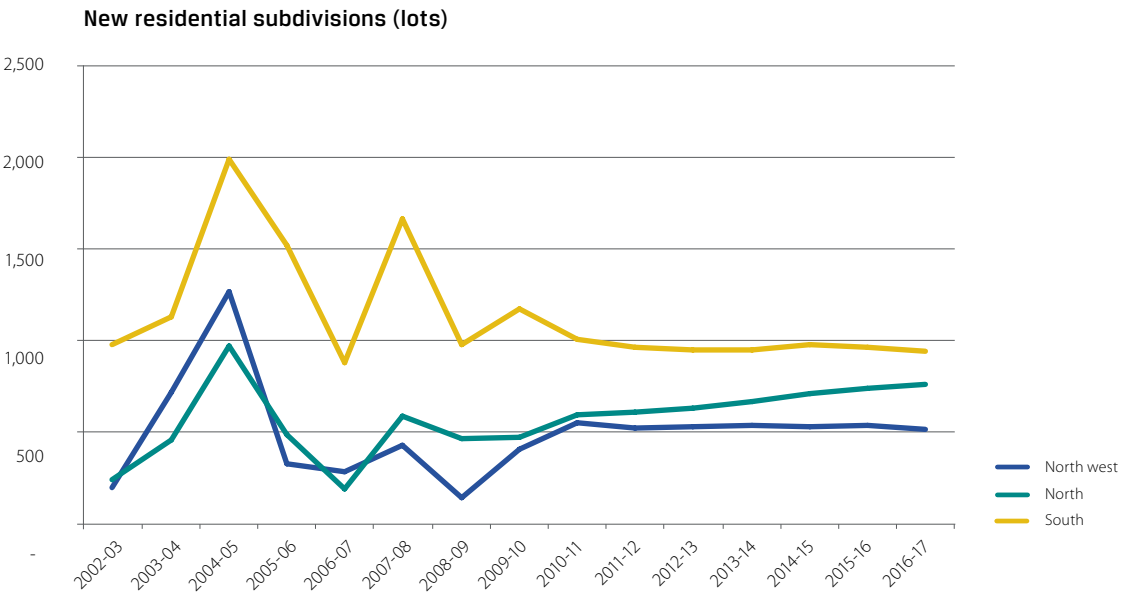


Residential subdivisions

Figure 10 shows the revised residential subdivision lots forecast for the north west, north and south regions for the forthcoming *Regulatory Control Period.*

Figure 10

Forecast residential subdivision lots



4. Capital expenditure

4. Capital expenditure

4.1. Rules requirements

Clause 6.12.3(a) of the *Rules* provides that the AER may accept or approve, or refuse to accept or approve, any element of Aurora's *Regulatory Proposal*. This means the AER may either accept or approve Aurora's total capital expenditure forecasts, or refuse to accept or approve Aurora's total capital expenditure forecasts on the basis of information provided in Aurora's *Regulatory Proposal*.

Clause 6.12.1(3) of the *Rules* provides that where the AER refuses to accept or approve Aurora's total capital expenditure forecasts it must set out its reasons for that decision, and its own estimate of the total of Aurora's required capital expenditure for the forthcoming *Regulatory Control Period*. In reaching a decision the AER must be satisfied that the forecast reflects the capital expenditure criteria, and have regard to the capital expenditure factors.

Clause 6.5.7(a) of the *Rules* requires that Aurora's *Regulatory Proposal* must include the total forecast capital expenditure for the forthcoming *Regulatory Control Period*, which it considers meets each of the capital expenditure objectives. These objectives are to:

(1) meet or manage the expected demand for *Standard Control Services* over that period;

(2) comply with all applicable regulatory obligations or requirements associated with the provision of *Standard Control Services*;

(3) maintain the quality, reliability and security of supply of *Standard Control Services*; and

(4) maintain the reliability, safety and security of the distribution system through the supply of *Standard Control Services*.

Clause 6.5.7(b) of the *Rules* requires that Aurora's capital expenditure forecast must:

(1) comply with the requirements of any relevant regulatory information instrument;

(2) be for expenditure that is properly allocated to *Standard Control Services* in accordance with the principles and policies set out in Aurora's Cost Allocation Method;

(3) include both:

  (i) the total of the forecast capital expenditure for the relevant *Regulatory Control Period*; and

  (ii) the forecast of the capital expenditure for each *Regulatory Year* of the relevant *Regulatory Control Period*; and

(4) identify any forecast capital expenditure that is for an option that has satisfied the regulatory test.

Clause 6.5.7(c) of the *Rules* requires that the AER accept Aurora's forecast of required capital expenditure if it is satisfied that the total of the forecast capital expenditure for the forthcoming *Regulatory Control Period* reasonably reflects the capital expenditure criteria. The capital expenditure criteria require that the forecast reflect:

(1) the efficient costs of achieving the capital expenditure objectives;

(2) the costs that a prudent operator in Aurora's circumstances would require to achieve the capital expenditure objectives; and

(3) a realistic expectation of the demand forecast and cost inputs required to achieve the capital expenditure objectives.

Clause 6.5.7(e) of the *Rules* sets out 10 capital expenditure factors, which reflect the matters which the AER must have regard to in determining its satisfaction that the forecast capital expenditure for the *forthcoming Regulatory Control Period* reasonably reflects the capital expenditure criteria.

Further, schedule 6.1.1 of the *Rules* requires that Aurora set out the following information and matters relating to capital expenditure:

(1) a forecast of the required capital expenditure that complies with the requirements of clause 6.5.7 of the *Rules* and identifies the forecast capital expenditure by reference to well accepted categories such as:

  (i) asset class (e.g. distribution lines, substations etc); or

  (ii) category driver (e.g. regulatory obligation or requirement, replacement, reliability, net market benefit, business support etc),

and identifies, in respect of proposed material assets:

  (i) the location of the proposed asset;

  (ii) the anticipated or known cost of the proposed asset; and

  (iii) the categories of distribution services which are to be provided by the proposed asset;

(2) the method used for developing the capital expenditure forecast;

(3) the forecasts of load growth relied upon to derive the capital expenditure forecasts and the method used for developing those forecasts of load growth;

(4) the key assumptions that underlie the capital expenditure forecast;

(5) a certification of the reasonableness of the key assumptions by the directors of Aurora;

(6) capital expenditure for each of the past *Regulatory Years* of the previous and current *Regulatory Control Periods*, and the expected capital expenditure for each of the last two *Regulatory Years* of the current *Regulatory Control Period*, categorised in the same way as for the capital expenditure forecast; and

(7) an explanation of any significant variations in the forecast capital expenditure from historical capital expenditure.

Clause 6.10.3(b) of the *Rules* requires that Aurora may only make the revisions so as to incorporate the substance of any changes required to address matters raised by the *Draft Distribution Determination* or the AER's reasons in its *Revised Regulatory Proposal*.

Clause 6.10.3(c) of the *Rules* requires that a *Revised Regulatory Proposal* must comply with the requirements of, and must contain or be accompanied by the information required by, any relevant regulatory information instrument.

4.2. AER's Draft Distribution Determination

4.2.1. Introduction

This section outlines the key areas of the AER's *Draft Distribution Determination* and major deviations from Aurora's *Regulatory Proposal* in relation to forecast capital expenditure.

Following the release of the AER's *Draft Distribution Determination*, Aurora has assessed the AER's proposals and identified areas of material concern that Aurora considers are not representative of an efficient level of capital expenditure or reflective of the capital expenditure criteria.

Table 7

Summary of AER's Draft Distribution Determination – 5 year TOTAL

Capex category $2009-10	Aurora proposed	AER Draft Determination	Difference
Capitalised Overheads	99.911	99.911	-
Demand Related			
Customer Initiated	182.958	147.470	(35.488)
Reinforcements	85.810	42.388	(43.422)
Non-Demand Related			
Reliability and Quality Maintained	187.277	129.866	(57.411)
Reliability and Quality Improved	-	-	-
Regulatory Obligations or Requirements	26.424	26.217	(0.207)
Non-Network	75.802	75.802	-
SCADA and Network Control	14.109	14.109	-
TOTAL	**672.290**	**535.762**	**(136.528)**

4.2.2. Capital expenditure classification

The AER, and its consultant Nuttall Consulting, has chosen to reclassify a number of Aurora's capital expenditure programs within the reliability and quality maintained RIN category as part of the *Draft Distribution Determination*, even though it has been contended that certain programs have been accepted in full (i.e. no adjustment). This reclassification has resulted in apparent adjustments to certain programs when compared to Aurora's *Regulatory Proposal*.

The subcategory distribution other assets, is one such reclassification. The Nuttall Consulting report indicates that Aurora's proposal for this subcategory has been accepted in full and statements by the AER in its *Draft Distribution Determination* do not contradict the statement by Nuttall Consulting. When the AER's proposed expenditure in its *Draft Distribution Determination* ($9.429m) is compared to Aurora's forecast in its *Regulatory Proposal* ($14.044m) it appears that there has been a $4.6m reduction by the AER. Examination of the models provided to Aurora by the AER confirms that the expenditure is as proposed by Aurora but not in the same RIN subcategory.

Aurora has provided an analysis of the expenditure that it proposed and the expenditure that was determined by the AER in the *Draft Distribution Determination* in a number of tables in the following sections. These tables reflect the Aurora expenditure classification for

Aurora proposed expenditure (*Regulatory Proposal*) and the AER expenditure classification for AER determined expenditure (*Draft Distribution Determination*). This means that in a number of instances the comparison of expenditure is not for the same RIN subcategory classification.

Aurora understands the underlying purposes for this expenditure far better than the AER and has not reclassified this expenditure in this *Revised Regulatory Proposal* as it considers that the Aurora proposed classifications are correct.

4.2.3. Capitalised overheads

The AER has accepted the capitalised overheads that were proposed by Aurora without modification. In accepting these capitalised overheads the AER has not considered that the quantum of these overheads is ultimately driven by the capital programs that will be delivered by Aurora. The AER has made a number of adjustments to Aurora's capital programs but has not reallocated the capitalised overheads to these modified programs.

Aurora does not agree with the AER's proposals for a number of the capital programs and will reallocate the capitalised overheads in accordance with the Aurora revised proposal for capital expenditure programs.

4.2.4. Demand Related

Customer Initiated

Table 8

Summary of AER's Draft Distribution Determination – Customer Initiated

Capex category $2009-10	Aurora proposed	AER Draft Determination	Difference
Customer Initiated			
Connection Assets	11.756	9.476	(2.280)
Non-major Works	108.224	87.229	(20.995)
Subdivisions	45.250	36.472	(8.778)
Substations	1.282	1.034	(0.248)
Major Works	16.447	13.259	(3.188)
TOTAL	**182.958**	**147.470**	**(35.488)**

Subsequent to Aurora's submission of its *Regulatory Proposal*, market conditions have continued to soften, and during its review process the AER established its own projections of customer initiated capital expenditure using its own assessment of customer connections.

Aurora has reviewed the methodology employed by the AER and engaged its previous provider, ACIL Tasman, to undertake further analysis of the forecast level of the customer numbers that underpin customer initiated capital expenditure. The analysis conducted by ACIL Tasman has confirmed the AER's forecasts in a number of areas. Adoption of the ACIL Tasman forecasts has indicated that minor adjustments should be made to the AER's proposal.

Given the highly uncertain nature of customer initiated capital expenditure forecasting, and the similarity of the ACIL Tasman and AER forecasts, Aurora has accepted the AER's forecasts for customer numbers that underpin customer initiated capital expenditure.

Aurora's revised forecasts for customer initiated capital expenditure will however vary from those proposed by the AER due to changes that Aurora has made to other factors, such as escalators, that also underpin these forecasts.

Reinforcements

Table 9

Summary of AER's Draft Distribution Determination – Reinforcements

Capex category $2009-10	Aurora proposed	AER Draft Determination	Difference
Reinforcements			
Subtransmission	-	-	-
HV Feeders	70.284	31.231	(39.053)
LV Feeders	1.112	1.112	-
Zone Substations	6.634	3.417	(3.217)
Distribution Substations	7.780	6.628	(1.152)
TOTAL	**85.810**	**42.388**	**(43.422)**

The AER considered that Aurora's total system maximum demand forecast was too high, and engaged SKM MMA to develop a substitute forecast. The AER's substitute forecast provides an annual average growth rate of 1.11 per cent from 2010 to 2017, while Aurora's original forecast provides an annual average growth rate of 1.54 per cent over the same period.

SKM MMA provided commentary that was critical of the methodology that Aurora has adopted for its demand forecasts. Aurora therefore engaged its own consultant, ACIL Tasman, to produce a revised forecast for system demand.

Whilst recognising that reconciliation of the spatial (bottom up) forecast with a system (top down) forecast is good practice, SKM MMA rejected the Transend system forecast as being too high and substituted its own system forecast which is based on a simple weather corrected linear trend. The SKM MMA forecast does not take into account changes in economic activity in the forecast period. Generally, the AER agreed with the growth rates, but did not agree with the initial step change driven by the Transend forecast.

Aurora also considers the SKM MMA forecast to be unsuitable due to the lack of econometric drivers and has provided an alternative system forecast that has been produced by ACIL Tasman. This revised forecast is provided as an attachment to this *Revised Regulatory Proposal*.

The AER also made adjustments to a number of sampled projects and then inferred similar reductions across the remaining projects in the reinforcements capital expenditure category. Aurora does not consider that a 'same size fits all' is an appropriate methodology to arrive at forecast expenditure, as it infers that all projects are similar in nature.

The AER has made reductions on the basis that some of Aurora's proposed reinforcements capital expenditure programs provide Aurora with reliability improvements and operational efficiencies as opposed to meeting the sole purpose of meeting demand based growth. Similarly the AER has reduced some proposed projects on this single basis, without further justification, but has not considered other residual factors remaining in the distribution network.

Aurora considers that the AER has made reductions that do not reflect the capital expenditure criteria or take into account the full range of capital expenditure factors.

In particular:

- Sandford

  Aurora proposed a staged implementation of infrastructure at Sandford. This included installing new 33 kV cables but operating them at 11 kV until the full sub-transmission infrastructure was required. Aurora considers that the AER has confused the drivers for the proposed 33 kV feeders running at 11 kV.

  These proposed feeders are meant to manage the existing loading constraints in the area south of Lauderdale on the existing 11 kV feeders for voltage, transfer capacity and reliability, not address Rokeby substation terminal loading.

  The AER's position is that Sandford area loading can be managed by non-network solutions. Any implemented non-network solution will manage the growth but fails to wholly manage the voltage, transfer capacity and reliability until the final solution is delivered.

  Aurora has included this project in full in its *Revised Regulatory Proposal*.

- Gretna

  The AER's contention is that the driver for this project is for non-demand activities (operation and reliability). The AER has assessed that this project is not demand-related and have thus discounted it as being only for load transfer, operation flexibility and reliability.

  Aurora agrees that the primary driver of this project is not demand-related and has been incorrectly classified. This incorrect classification does not mean that the project should simply be excluded and not considered by the AER on its merits. The project is required to negate the need to purchase new transformers at Gretna due to the condition of the existing assets and must proceed.

  Aurora has reclassified this project and included with other non-demand related expenditure in full in its *Revised Regulatory Proposal*.

- St Leonards

  This project was not in the areas reviewed by Nuttall Consulting, but was rather reduced on the 'same size fits all' methodology. A Regulatory Investment Test has been conducted and resulted in the construction of a new Transend substation at St Leonards with the feeder tails being the final connection of the new substation to the distribution network.

  The Aurora component comprises the last stage of the feeder tail development. The amount proposed by the AER does not necessarily allow for the completion of the tails as originally considered. Failure to complete this connection will mean that the proposed load transfers from the other substations in the Launceston area will not be effectively completed.

  Aurora has included this project in full in its *Revised Regulatory Proposal*.

In light of the AER review, Aurora has also reviewed its entire reinforcements capital program, to assess all projects required for the forthcoming *Regulatory Control Period*. This review has highlighted the need by Aurora for the construction of a zone substation at Kingston. This project was part of a joint planning outcome by Aurora and Transend with a Regulatory Investment Test conducted and construction of a new Transend substation already commenced. Aurora has included this project in full in its *Revised Regulatory Proposal*.

4.2.5. Non-Demand Related

Reliability and Quality Maintained

Table 10

Summary of AER's Draft Distribution Determination – Reliability and Quality Maintained

Capex category $2009-10	Aurora proposed	AER Draft Determination	Difference
Reliability and Quality Maintained			
Poles	42.346	27.152	(15.194)
Pole top structures	0.855	-	(0.855)
Conductors	14.959	14.959	-
Underground cables	14.743	11.222	(3.521)
Services	11.930	9.000	(2.930)
Distribution transformers	28.467	22.980	(5.487)
Distribution switchgear	22.048	12.921	(9.127)
Distribution other assets	14.044	9.429	(4.615)
Zone transformers	5.979	0.874	(5.105)
Zone switchgear	2.640	2.640	-
Zone other assets	1.204	0.161	(1.043)
Other	28.062	18.527	(9.535)
TOTAL	**187.277**	**129.866**	**(57.411)**

Reliability maintained

Whilst not a subcategory within the reliability and quality maintained RIN categories there are a number of matters that Aurora raises relating to its ability to maintain required network reliability. The key programs proposed by Aurora in this category were:

- the installation of HV switchgear and associated communications to enable load transfer;
- the installation of fault indicators and communications; and
- to address group fusing issues and spur protection.

Aurora proposed these programs solely as reliability maintenance activities.

The AER has dismissed these programs on the basis that they are not associated with maintaining network reliability, but instead relate to reliability or operational improvement activities.

The AER has then formed a view that Aurora does not have a clear obligation to improve non-performing parts of the network and payment of GSL payments would be a more prudent and efficient action. Accordingly, the AER has reduced the level of reliability based capital expenditure and made some incremental adjustments to GSL provisions.

Similarly the AER has reduced protection and control based projects on the basis that operating expenditure and reliability benefits are not sufficient to support such investments.

While the AER has noted the relationship between reduced reliability capital expenditure and paying increased GSL payments, Aurora does not accept that the AER has adequately accounted for the increased exposure to GSL payments in the adjustment made to GSL-related operating expenditure.

Aurora considers that its reliability programs are necessary to maintain performance in line with the standards imposed by the *TEC*. While certain protection and control projects may provide some reliability improvement, other programs are based upon asset protection.

The *TEC* requires Aurora to meet a certain level of reliability for 101 distinct communities. The AER has considered this in setting its STPIS targets. To achieve these *TEC* standards, Aurora must implement reliability projects for those communities that are below the standard. These projects are instigated as distinct communities fall in and out of compliance. Asset replacement programs (as suggested by the AER) are not sufficient to address these specific reliability compliance issues.

Power quality

Aurora uses 'power quality' to mean compliance with power quality standards. Whilst not a subcategory within the reliability and quality maintained RIN categories there are a number of matters that Aurora raises relating to its requirement to meet power quality within the distribution network.

Aurora proposed a program of reactive investment to rectify issues based on historical spend rates and some proactive initiatives to potentially improve management of power quality related issues on the distribution network.

The AER considered that since there was no evidence presented to clearly demonstrate that customers were dissatisfied with the current level of service with regard to power quality, proactive measures should only be undertaken where firm net benefits can be established. The AER has accordingly proposed reductions in this category.

Aurora accepts the AER's proposed reductions.

Poles

The AER has used its replacement expenditure (repex) model to forecast age based capital expenditure to replace assets that have come to the end of their useful lives. This model is also reported to be 'calibrated' with Aurora's historical volumes of expenditure. Aurora was unable to confirm any independent verification of this 'calibration' with the AER. In its support the AER referred Aurora to the recent Victorian distribution business decision for justification of the repex model outcomes.

Aurora does not accept the AER's assessment on replacement levels. Aurora considers that it has robust and reliable data to predict likely future levels of required expenditure. As pole replacements are driven by a measurement of physical strength, Aurora cannot ignore replacement or reinforcement activities without introducing unacceptable safety and legal consequences to the business. Aurora based its forecasts on a comprehensive and robust data set which was discounted by the AER. These are not the type of engineering decisions that can be undertaken by either the AER or its preferred repex model.

Aurora considers that the conservative projections made by the AER do not align with Aurora's engineering assessment of the future needs for pole replacements and Aurora has proposed its own forecasts for pole related capital expenditure.

Conductors

Aurora proposed a number of replacement programs for aged copper conductor, 3/12 galvanised conductor near coastal environments, and a number of activities to ensure ongoing compliance to industry standards and safety guidelines.

The AER has accepted Aurora's proposals without amendment.

Underground Cables

Aurora's *Regulatory Proposal* included focused replacement programs for poor condition CONSAC cables and to replace existing cast-iron pothead terminations. Both programs are required to address safety and reliability concerns of the business. These programs were accepted by the AER without amendment.

In addition Aurora proposed a general provision to replace other cable assets over time as required due to poor condition.

The AER has proposed some reductions in the provisions for replacement of HV and LV cables during the forthcoming *Regulatory Control Period*.

Overall this reduction does not represent a significant risk to Aurora over the forthcoming *Regulatory Control Period*; although some reprioritisation of investment priorities may be required in the coming years should the rate of cable failures change materially from current levels.

Aurora has therefore accepted the AER's proposed reductions as a factor in its revised forecasts for underground cables related capital expenditure.

Service Connections

The major work category in this section is the replacement of overhead services and fuses. Aurora's *Regulatory Proposal* was based on a comprehensive condition assessment of 10 per cent of the asset population in 2006 and was projected forward at a rate of replacement Aurora considers was appropriate to manage this asset class.

The AER challenged Aurora's projected volumes and has proposed a reduction in the level of investment over the forthcoming *Regulatory Control Period*.

After review of all the available information, Aurora considers that a material deviation from the AER's proposed levels of expenditure is not warranted.

Aurora has therefore accepted the AER's proposed reductions.

Distribution Transformers

This category includes programs to replace ground mounted transformers, H-structures, substation structures, associated earthing and voltage regulators. Aurora proposed a material increase in investment on these assets from previous years to address identified issues with oil leakage (environmental risks), safety risks associated with earthing compliance, and replacement of assets in very poor condition.

The AER has accepted eight of the nine programs as proposed, but removed the proposed renewal of three voltage regulators.

Aurora has considerable concerns regarding the age profile of its voltage regulator fleet and does not accept the AER's proposed treatment of the associated operating risks. Aurora considers that a modification to the AER's proposal is the most efficient mechanism to address Aurora's concerns.

Aurora therefore proposes to increase its requirement to carry increased spares to manage its exposure with these assets.

Distribution Switchgear

Aurora proposed the continuation of a large number of programs to address a wide number of issues relating to its fleet of switchgear. These include:

- removal of some types with operational restrictions to address safety issues;
- removal of switchgear with identified risks from asbestos;
- general replacement of assets from failure and poor condition; and
- replacement of aged EDO assets in high fire-risk areas.

Aurora has identified that aged EDO fuses are prone to potential fire start and had proposed a two-pronged approach to manage this risk. Firstly to replace higher risk sites with boric acid units, and secondly to replace older assets in lower risk situations with new EDO units. This approach was proposed because of the significant cost differential between boric acid and traditional units. The two-pronged approach allowed rapid mitigation of the immediate risk within cost efficiency and progressive replacement with boric acid units over time.

The AER has questioned some of Aurora's asset management practices with regard to replacement of aged EDO fuses in the network to counter fire start risks. The AER proposed that boric acid fuses are the better solution to address these risks. While the AER has proposed this alternate approach it has failed to adjust the proposed expenditure to acknowledge the higher overall capital expenditure costs of the boric acid fuses.

Aurora accepts the AER's proposal for the use of boric acid fuses but will amend the expenditure requirement to match Aurora's forecast requirements.

Distribution Other Assets

Aurora proposed a mix of minor programs to address various safety and compliance-related activities.

The AER has accepted Aurora's proposed expenditure without amendment.

Zone Transformers

Aurora presented dissolved gas analysis (DGA) and condition assessments on a number of the oldest and poorest condition zone transformers to the AER in support of proposed replacements during the forthcoming *Regulatory Control Period*.

The AER's consultants did not agree with Aurora's proposed strategy on zone transformer replacements and proposed an alternate approach of one spare asset and further oil conditioning. The AER, stated that "more cost effective solutions are available", but did not outline on what basis this had been determined.

Whilst Aurora's proposed investment level may have been considered somewhat conservative by the AER's consultants, Aurora considers that the AER's proposed alternative fails to recognise the full costs of the scenario proposed; for example the costs required to construct a suitable foundation to carry a spare transformer and associated oil containment systems. Nor does the AER's proposal consider that one spare transformer is not sufficient to cover the risks introduced to Aurora by the deferral of all projects. Aurora considers that the AER's proposal does not represent a true reflection of the actual costs Aurora will incur with the proposed alternative approach.

Aurora accepts the AER's proposal for the use of spare transformers and has amended the expenditure requirement to match Aurora's forecast requirements to address the total risk.

Zone Switchgear and Zone Other

Aurora proposed the replacement of manual recharge oil filled switchgear, and older CTs and VTs in some of its older substations. These programs have been accepted by the AER, but some reductions in renewals of assets in rural zone substations were rejected.

As this reduction does not represent a significant operating risk to Aurora, in the short term, Aurora accepts the AER's proposal.

Other

This category includes ongoing purchase of CablePI devices, replacement of HV line clamps for operational safety reasons, and other activities associated with mitigation measures for endangered species and undergrounding in special areas.

The AER has accepted the six programs as proposed.

4.2.6. Non-Network

Table 11

Summary of AER's Draft Distribution Determination – Non-Network

Capex category	Aurora proposed	AER Draft Determination	Difference
Non-Network			
IT & Communications	46.305	46.305	-
Motor Vehicles	25.315	25.315	-
Property	1.454	1.454	-
Plant & Equipment	-	-	-
Other	2.728	2.728	-
TOTAL	**75.802**	**75.802**	**-**

The AER has not proposed any changes in Aurora's proposals for non-network capital expenditure.

4.2.7. Demand and economic forecasts

The AER has modified or replaced the majority of the Aurora's demand and economic forecasts with more up-to-date data as part of its review of the Aurora *Regulatory Proposal*. Aurora has in turn updated a number of its previous, and AER amended, forecasts to reflect more up-to-date data sets and includes these updates as part of this *Revised Regulatory Proposal*. These forecasts also underpin a number of the programs that have been proposed for capital expenditure and will therefore impact Aurora's revised capital expenditure forecasts.

Aurora considers that the demand forecasting methodologies now meet the AER requirements and are discussed in chapter 3 of this *Revised Regulatory Proposal*.

4.2.8. Supporting information

Aurora has prepared a number of papers supporting its positions regarding the capital expenditure proposed within the AER's *Draft Distribution Determination*. These papers provide a detailed analysis of the AER's draft decisions and Aurora's reasoning for not accepting or modifying the AER's draft decisions. These papers are appended as an attachment to this *Revised Regulatory Proposal*.

4.3. Revised capital expenditure forecasts

This section of Aurora's *Revised Regulatory Proposal* will focus on the revised forecast capital expenditure for the forthcoming *Regulatory Control Period*.

Aurora has developed a revised detailed work program containing the capital projects it has forecast will be required during the forthcoming *Regulatory Control Period*. This revised work program includes estimated volumes and rates for each project, for each year of the forthcoming *Regulatory Control Period*. These projects have been further classified to individual work and RIN categories and form the basis of Aurora's total revised capital expenditure forecasts for the forthcoming *Regulatory Control Period*. Aurora's revised work program is appended as an attachment to this *Revised Regulatory Proposal*.

Aurora has separated its revised capital expenditure proposals into three primary RIN categories and six subcategories as detailed in Table 12.

Table 12

Capex RIN categories

RIN category	RIN subcategory
Capitalised overheads	Capitalised overheads
System	Demand related
	Non-demand related
	Regulatory obligations or requirements
Non-system	Non-network
	SCADA and network control

Key assumptions

The key assumptions underlying Aurora's revised capital expenditure forecasts are that:

- Aurora's overall network strategy will remain unchanged for the forthcoming Regulatory Control Period;
- Aurora's Management Plans will remain unchanged for the forthcoming Regulatory Control Period;
- Aurora's work practices will remain unchanged for the forthcoming Regulatory Control Period;
- the TEC will remain in force, and that any replacement will impose similar and not more prescriptive requirements upon Aurora in relation to network augmentations;
- Aurora's processes and systems that are used to identify capacity system risks, and its methodologies that are used to address the higher risks and options provide a prudent method of determining the augmentation work timetable for Aurora's assets;
- Aurora's method of undertaking trend analysis and demand forecasts for customer initiated capital works is a prudent method of determining the works required;
- the unit rates applied to demand related expenditure will be the same as the out-turn costs faced by Aurora;
- the overheads applied to demand related expenditure will be the same as the out-turn costs faced by Aurora; and
- the escalation applied to demand related expenditure will be the same as the out-turn costs faced by Aurora.

4.3.1. Capitalised overheads

Variations to AER's Draft Distribution Determination

Aurora has reforecast its capitalised overheads as a consequence of changes that have been made to Aurora's capital expenditure forecasts. These changes are reflected in the revised forecasts and represent a decrease in those proposed in Aurora's *Regulatory Proposal*.

Background

Capitalised overheads relate to the capitalised portion of Network Services direct overheads that are allocated to each of the AER's RIN categories and subcategories. These Network Services direct overheads comprise overhead costs from three shared cost pools, being:

- corporate and shared costs;
- distribution shared services; and
- Network Services management overheads.

Under the normal operation of Aurora's models, the values for each capital expenditure work category of Aurora's work program would be inclusive of the capitalised portion of direct overhead. However, consistent with the AER's RIN requirements, Aurora has created a separate expenditure category in its revised models so that it can quantify the magnitude of this capitalised component throughout the forthcoming *Regulatory Control Period*.

Drivers

The drivers for this category are diverse as they relate to the drivers for each of the three shared cost pools comprising Network Services overheads.

Methodology to derive forecasts

The methodology for deriving capitalised overheads expenditure forecasts varies on the basis of the nature of the shared cost, as the following demonstrates:

- for corporate and shared costs, the volumes and projects for the activities that underpin this expenditure are forecast by Aurora's corporate team. These forecasts are built up with regard to both corporate-wide strategies and parameters; and forecasts and planning considerations by each division and subsidiary within Aurora. The costs are allocated to each division and subsidiary using Aurora's ICAM on the basis of the most appropriate driver;
- for distribution shared costs, the volumes and projects for the activities that underpin this expenditure are forecast by Aurora's distribution business. These forecasts are built up with regard to forecasts and planning considerations of both its Network Services and Network divisions; and
- for Network Services management costs, the volumes and projects for the activities that underpin this expenditure are forecast by Aurora's Network Services division. These forecasts are built up with regard to forecasts and planning considerations of both Network Services and Network divisions.

A revised total of $92.1million is forecast to be required within this category over the forthcoming *Regulatory Control Period*. This expenditure is forecast to be required for the capitalised overhead component of each RIN subcategory. The profile of forecast expenditure varies moderately throughout the forthcoming *Regulatory Control Period*.

Aurora uses the capital expenditure component of its work program, as well as the Network Services component of its unit rates model, to derive capitalised overheads. The methodology for deriving the work program is set out in Aurora's Management Plans and network strategy documents.

Capitalised overheads are calculated by allocating Network Services overheads to each capital expenditure RIN subcategory on the basis of direct labour hours. These overheads are split off from the values in the work program and aggregated on an annual basis to establish the forecasts for the forthcoming *Regulatory Control Period*.

Expenditure variations

There are no instances where revised expenditure differs significantly from that of the current *Regulatory Control Period*. The nature of this expenditure (capitalised overheads) is, however, driven by the volume of projects that are undertaken by Aurora and will vary year by year.

Opex/capex interactions

There is no specific interaction between capitalised overheads and operating expenditure.

Forecasts

Aurora's revised forecasts (including escalations) for capitalised overheads expenditure for the forthcoming *Regulatory Control Period* are set out in Table 13.

Table 13

Capitalised overheads capex

Aurora's capitalised overheads expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	20.506	20.606	19.851	19.383	19.565
Revised Forecast	18.832	18.869	18.349	17.975	18.058

4.3.2. Demand related

Variations to AER's Draft Distribution Determination

Aurora has made a number of changes to its forecasts for customer initiated capital works to reflect the changes to adopt the AER's underlying demand and customer drivers for this expenditure. These changes have resulted in a reduction in the Aurora forecasts for the forthcoming *Regulatory Control Period* that is more reflective of the AER's *Draft Distribution Determination*.

Aurora has included a number of projects that have been modified or rejected by the AER that relate to reinforcements capital expenditure. These changes have resulted in a reduction in the Aurora forecasts for the forthcoming *Regulatory Control Period*. Aurora's revised forecasts are however approximately 70 per cent higher than those proposed by the AER.

Background

Demand related expenditure refers to the capital expenditure required to augment Aurora's distribution network.

This capital expenditure is driven by growth in peak demand across Aurora's network. To ensure ongoing supply to its customers, Aurora must augment its network assets to accommodate this additional demand as peak demand approaches the network capacity limits. Demand related capital expenditure is impacted by two key needs, being:

- the additional capacity requirements of customer initiated works; and
- other reinforcements required to meet growth in demand from existing customers in constrained areas of the network.

Demand related capital expenditure includes projects undertaken in the following categories:

- customer initiated; and
- reinforcements.

Drivers

The drivers for demand related expenditure are:

- customer service;
- legislation;
- safety; and
- capacity.

Methodology to derive forecasts

As noted previously, the volumes and projects for all work categories that underpin this expenditure are set out in Aurora's revised work program. The individual categories within the revised work program can be referenced to specific sections of Aurora's Management Plans.

Customer initiated

This category is undertaken at the request of the customer and includes the creation of a new or an altered customer connection, either directly connected to the network or via dedicated connection assets. The *Rules* and the *TEC* articulate the minimum specific technical requirements when assessing, considering and/or establishing a customer connection.

A revised total of $155.0 million is forecast to be required within this category over the forthcoming *Regulatory Control Period*. This expenditure is forecast to be required across five overall subcategories, being:

- customer initiated connection assets;
- customer initiated non-major works;
- customer initiated subdivisions;
- customer initiated substations; and
- customer initiated major works.

Table 14

Customer initiated capex

Aurora's customer initiated capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Connection assets	1.819	1.951	1.981	1.924	1.906
Non-major works	17.610	18.098	19.054	18.320	18.645
Subdivisions	7.068	7.560	7.741	7.515	7.208
Substations	0.199	0.232	0.258	0.246	0.230
Major works	2.955	2.974	3.254	3.165	3.116

Reinforcements

A revised total of $71.7 million is forecast to be required within this category. This expenditure is forecast to be required across four subcategories, being:

- distribution substations;
- high voltage feeders;
- low voltage feeders; and
- zone substations.

Table 15

Reinforcements capex

Aurora's reinforcements capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Distribution substations	1.613	1.659	1.625	1.599	1.609
High voltage feeders	13.674	9.867	7.491	13.088	9.354
Low voltage feeders	0.233	0.234	0.234	0.231	0.232
Zone substations	1.737	4.689	1.975	0.528	0.029

Expenditure variations

The slowing of economic conditions within the State has resulted in a significant decrease in revised capital expenditure from that of the current *Regulatory Control Period*.

There is also a significant reduction in the requirement for zone substation expenditure, within the reinforcements subcategory, when compared to the scale and number of projects undertaken during the current *Regulatory Control Period*.

There is however a significant increase in the requirement for HV feeder augmentations and constructions as works are undertaken during the forthcoming *Regulatory Control Period* to:

- complete HV feeder augmentations associated with the construction of zone substations within the current *Regulatory Control Period*; and
- augment and construct HV feeders in preparation of expected additional zone substation works required within the 2017-22 *Regulatory Control Period*.

Opex/capex interactions

There is a strong relationship between the revised demand related capital expenditure forecast and:

- the demand management category, which relates to operational expenditure to reduce system demand or alleviate demand through non-network alternatives. This is because there is an inverse relationship between capital expenditure on the works required to meet the capacity requirements of Aurora based on normal load forecasts, and expenditure on demand management initiatives and non-network alternatives. Non-network options are only pursued where it is technically and financially viable to do so; and
- the routine maintenance category which relates to operational expenditure on assets in accordance with the network vision, asset Management Plan and thread Management Plans. With additional demand related capital expenditure comes a corresponding increase in routine maintenance, as these new assets drive increased quantities of scheduled maintenance activities. There is therefore a direct relationship between growth in the network through customer initiated capital expenditure and maintenance expenditure.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for demand related capital expenditure for the forthcoming *Regulatory Control Period* are set out in Table 16.

Table 16

Demand related capex

Aurora's demand related capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	54.855	53.842	52.466	54.062	53.542
Revised Forecast	46.907	47.264	43.613	46.615	42.330

4.3.3. Non-demand related

Variations to AER's Draft Distribution Determination

Aurora has included a number of projects that have been modified or rejected by the AER that relate to reliability and quality maintained capital expenditure. These changes have resulted in a reduction in the Aurora forecasts for the forthcoming *Regulatory Control Period*. Aurora's revised forecasts are however approximately 40 per cent higher than those proposed by the AER.

Background

Non-demand related capital expenditure is undertaken to minimise cost of supply to the customer whilst:

- maintaining network performance;
- managing business operating risks; and
- complying with regulatory (e.g. *TEC* requirements), contractual, legal and safety responsibilities.

Non-demand related capital expenditure includes projects undertaken in the following categories:

- reliability and quality maintained; and
- reliability and quality improvements.

Expenditure forecasts within this section refer to projects undertaken in the reliability and quality maintained category only. This category comprises 12 subcategories covering assets such as poles, transformers and switchgear.

Drivers

The drivers for this category are:

- customer service requirements;
- reliability requirements;
- management of risk;
- proactive replacement of units based on special audit;
- life cycle requirements;
- compliance with the asset management policy;
- capacity requirements;
- compliance with relevant legislative and safety obligations; and
- environmental obligations.

Methodology to derive forecasts

The volumes and projects for all work categories that underpin this revised expenditure are located in Aurora's revised work program. The individual categories within the revised work program can be referenced to specific sections of Aurora's Management Plans, and this section sets out the relevant Management Plan for each work category listed.

Reliability and quality maintained

A revised total of $180.3 million is forecast to be required within this category. This expenditure is forecast to be required across 12 subcategories, being:

- conductors;
- distribution other assets;
- distribution switchgear;
- distribution transformers;
- maintenance services;
- poles;
- pole-top structures;
- other;
- underground cables;
- zone other assets;
- zone switchgear; and
- zone transformers.

Table 17

Reliability and quality maintained capex

Aurora's reliability and quality maintained capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Conductors	3.024	3.046	3.039	3.017	3.014
Distribution other assets	2.380	2.332	2.397	2.139	2.341
Distribution switchgear	3.671	3.726	3.745	3.744	3.713
Distribution transformers	6.446	5.580	5.238	5.322	5.288
Services	1.626	1.635	1.619	1.593	1.575
Poles	7.767	8.180	8.723	9.398	10.330
Pole-top structures	0.169	0.170	0.177	0.175	0.175
Other	5.395	5.531	5.544	5.445	5.449
Underground cables	2.898	2.889	2.891	2.864	2.857
Zone other assets	-	0.080	0.027	0.054	0.026
Zone switchgear	2.128	0.472	0.565	-	-
Zone transformers	6.182	0.471	0.300	1.228	0.479

Reliability and quality improvements

Aurora has not forecast any expenditure within this category. Aurora has made this assumption on the basis that all its reliability improvement projects will be completed within the current *Regulatory Control Period* and future expenditure will be required for compliance activities only, with no specific capital investment aimed at substantive improvements in reliability in the forthcoming *Regulatory Control Period*.

Expenditure variations

Total revised non-demand related capital expenditure does not differ significantly from that of the current *Regulatory Control Period*. There are however a number of significant changes within the subcategories within the non-demand related capital expenditure category.

In relation to the current *Regulatory Control Period,* revised expenditure within the reliability and quality maintained subcategory has increased significantly, whereas expenditure within the reliability and quality improvements subcategory is forecast to be zero. This change represents Aurora's classification of forecast programs as reliability and quality maintained only. This categorisation assumption also means that the forecast expenditure, within each of the subcategories of the reliability and quality maintained subcategory, increases significantly from that of the current *Regulatory Control Period*.

Opex/capex interactions

There is a strong relationship between revised non-demand related reliability and quality maintenance capital expenditure forecast and:

- the routine maintenance operating expenditure category which relates to operational expenditure on assets in accordance with the network vision, asset Management Plans and thread Management Plans. This is because expenditure on replacing assets has an inverse relationship to the amount of routine maintenance required, as these new assets extend the period between and amount of scheduled maintenance required; and
- the non-routine maintenance operating expenditure category which relates to non-routine operational expenditure on assets in accordance with the network vision, asset Management Plans and thread Management Plans. Expenditure on replacing assets has an inverse relationship to the amount of non-routine maintenance required, as these new assets reduce the likelihood of, and amount of, unscheduled maintenance required.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for non-demand related capital expenditure for the forthcoming *Regulatory Control Period* are set out in Table 18.

Table 18

Non-demand related capex

Aurora's non-demand related capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	37.136	38.092	38.338	35.792	37.919
Revised Forecast	41.685	34.112	34.264	34.979	35.246

4.3.4. Regulatory obligations or requirements

Variations to AER's Draft Distribution Determination

The AER has generally accepted Aurora's forecasts for regulatory obligations or requirements capital expenditure. Changes in other capital expenditure programs have however resulted in a reallocation of shared services overheads attributable to capital expenditure. These reallocations have resulted in a slight increase in the Aurora forecasts for the forthcoming *Regulatory Control Period*.

Background

Regulatory obligations or requirements capital expenditure comprises expenditure that is undertaken by Aurora to specifically address legislative requirements. This expenditure comprises four categories relating to Aurora's safety, health, environmental and compliance obligations. As legislative obligations are contained within a variety of Aurora's Management Plans they are not specifically addressed within this section of Aurora's *Regulatory Proposal*.

Drivers

The drivers for regulatory obligations or requirements capital expenditure are compliance with the legislative obligations placed upon Aurora.

Methodology to derive forecasts

The volumes and projects for all work categories that underpin this expenditure are located in Aurora's revised work program. The categories within the revised work program can be referenced to specific sections of Aurora's Management Plans and network strategy documents. As legislative obligations are contained within a variety of Aurora's Management Plans they are not specifically addressed within this section of Aurora's *Revised Regulatory Proposal*.

Regulatory obligations or requirements

A revised total of $26.7 million is forecast to be required within this category. This expenditure is forecast to be required across one subcategory; regulatory obligations or requirements. This expenditure profile varies considerably throughout the forthcoming *Regulatory Control Period*.

The largest work category within regulatory obligations or requirements relates to addressing safety and environmental issues in ground mounted substations.

The methodology used by Aurora to develop the forecast projects for each work category is set out in Aurora's Management Plans and strategy documents.

The anticipated works are based on Aurora's compliance with its legislative obligations.

Key assumptions

The key assumptions underlying Aurora's revised regulatory obligations or requirements capital expenditure works forecast are that:

- Aurora's overall network strategy will remain unchanged for the forthcoming *Regulatory Control Period*;
- Aurora's Management Plans will remain unchanged for the forthcoming *Regulatory Control Period*;
- Aurora's compliance obligations will remain unchanged for the forthcoming *Regulatory Control Period*;
- Aurora's method of assessing forecasts for regulatory obligations or requirements capital expenditure is a prudent method of determining the works required;
- the costs associated with regulatory obligations or requirements capital expenditure will be the same as the out-turn costs faced by Aurora;
- the overheads applied to regulatory obligations or requirements capital expenditure will be the same as the out-turn costs faced by Aurora; and
- the escalation applied to regulatory obligations or requirements capital expenditure will be the same as the out-turn costs faced by Aurora.

Expenditure variations

There are no instances where revised expenditure differs significantly from that of the current *Regulatory Control Period*.

Opex/capex interactions

There is a relationship between revised regulatory obligations or requirements capital expenditure and other capital expenditure categories, and operational expenditure, as new regulatory requirements will typically result in changed practices for both capital and operating expenditure.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for regulatory obligations or requirements capital expenditure for the forthcoming *Regulatory Control Period* are set out in Table 19.

Table 19

Regulatory obligations or requirements

Aurora's regulatory obligations or requirements capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	5.515	5.484	5.230	5.152	5.043
Revised Forecast	5.514	5.502	5.256	5.217	5.214

4.3.5. Non-network

Variations to AER's Draft Distribution Determination

The AER has accepted Aurora's forecasts for Non-network capital expenditure. Changes in other capital expenditure programs have however resulted in a reallocation of shared services overheads attributable to capital expenditure. These reallocations have resulted in a slight increase in the Aurora forecasts for the forthcoming *Regulatory Control Period*.

Background

Non-network capital expenditure comprises five categories of shared expenditure, being:

- other;
- IT and communications;
- motor vehicles;
- plant and equipment; and
- property.

Non-system capital expenditure includes a component of Aurora's distribution network IT strategy. This strategy is a 10 year plan that achieves technology consolidation and simplification and enhanced strategic capabilities. The strategy is based on firstly implementing a foundation to enable Aurora's distribution business to thrive in a "smart world". The second stage addresses market-facing capabilities. The strategy realises a long term vision that transforms Aurora's IT capabilities from their current state into a strategic, business enabling platform.

The final four categories of this expenditure relate to corporate and shared costs which are allocated across Aurora on an organisation-wide level through the capital expenditure ICAM. As the portion allocated to Network Services division is already included in the capitalised overheads component of expenditure, this section only discusses the component of these costs that is allocated to the Network division.

Aurora distribution network ISG strategy

Aurora's Distribution Network ISG Strategy was discussed in detail in Aurora's *Regulatory Proposal*. Aurora has not provided further detailed analysis of this strategy in this *Revised Regulatory Proposal*.

Drivers

Non-network capital expenditure typically provides support services for the other 'network' expenditure classifications. As a consequence, the drivers are both numerous and diverse, and are not set out in this section.

Methodology to derive forecasts

For revised non-system capital expenditure, the volumes and projects for all work categories that underpin this are located in Aurora's revised work program. The individual categories within the revised work program can be referenced to specific sections of Aurora's Management Plans and network strategy documents, and this section sets out the relevant plan and strategy for each work category listed.

For revised corporate and shared costs (the remaining four cost categories within non-network capital expenditure), the volumes and projects for the activities that underpin this revised expenditure are forecast by Aurora's corporate team. These forecasts are built up with regard to both corporate-wide strategies and parameters; and forecasts and planning considerations by each division and subsidiary within Aurora. The costs are allocated to the distribution business using Aurora's ICAM on the basis of the most appropriate driver.

Table 20

Non-network capex

Aurora's non-network capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Other	0.576	0.576	0.575	0.571	0.571
IT and communications	9.937	7.458	7.250	11.118	11.097
Motor vehicles	7.168	6.596	5.138	3.459	3.453
Property	0.497	0.519	0.506	0.489	0.477

Expenditure variations

There are significant variations in the revised expenditure forecasts for non-network capital expenditure from that of the current *Regulatory Control Period*.

Revised expenditure within the IT and communications subcategory is forecast to decrease significantly due to the completion of the NEM and contestability related capital projects undertaken during the current *Regulatory Control Period*. Aurora has forecast that no expenditure will be required for NEM related activities in the forthcoming *Regulatory Control Period*.

Revised expenditure within the property subcategory is forecast to decrease significantly due to the completion of a number of property related capital projects during the current *Regulatory Control Period*.

Opex/capex interactions

There is a general interaction between the revised non-network capital expenditure discussed in this chapter and operating costs as the greater expenditure is in this category, the more resourcing is needed to maintain the assets such as IT, fleet and property.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for non-network capital expenditure for the forthcoming *Regulatory Control Period* are set out in Table 21.

Table 21

Non-network capex

Aurora's non-network capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	17.737	14.712	13.033	15.164	15.155
Revised Forecast	18.177	15.149	13.468	15.638	15.597

4.3.6. SCADA and network control

Variations to AER's Draft Distribution Determination

The AER has accepted Aurora's forecasts for SCADA and network control capital expenditure. Changes in other capital expenditure programs have however resulted in a reallocation of shared services overheads attributable to capital expenditure. These reallocations have resulted in a slight increase in the Aurora forecasts for the forthcoming *Regulatory Control Period*.

Background

SCADA and network control expenditure relates to capital expenditure on Aurora's supervisory control and data acquisition (SCADA) system, as well as expenditure on associated network control activities.

SCADA systems are functionally rich and fully integrated solutions that improve fault management, outage analysis, operations dispatch, crew management, switching order development, safety documentation, and reporting network operations, whilst also managing assets, monitoring real-time performance and delivery security, and providing alerts regarding outage situations.

A large component of this expenditure relates to implementing new SCADA software that will assist Aurora to:

- safeguard its employees and the public;
- improve restoration time and efficiency; and
- reduce the costs, risks, and uncertainties of energy distribution operations.

Drivers

The key driver for this category is security of supply through visibility of network conditions and network operability.

Methodology to derive forecasts

As noted previously, the volumes and projects for all work categories that underpin this revised expenditure are located in Aurora's revised work program. The categories within the revised work program can be referenced to specific sections of Aurora's Management Plans and network strategy documents, and this section sets out the relevant plan and strategy for each work category listed.

SCADA and network control

A revised total of $14.2 million is forecast to be required within this category. This expenditure is forecast across one subcategory; SCADA and network control. This expenditure profile varies considerably throughout the forthcoming *Regulatory Control Period*.

The largest work category within SCADA and network control relates to IT software – SCADA.

Expenditure variations

There are significant increases from that of the current *Regulatory Control Period* resulting from the implementation of the Distribution ISG Strategy.

Opex/capex interactions

There is a strong relationship between revised SCADA and network control capital expenditure and operational expenditure as new SCADA systems allow for the efficient identification, diagnosis, planning and rectification of faults. This minimises operational expenditure in areas including labour costs, spare parts and inventory holdings.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for SCADA and network control capital expenditure for the forthcoming *Regulatory Control Period* are set out in Table 22.

Table 22

SCADA and network control capex

Aurora's SCADA and network control capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	1.157	5.762	5.766	0.715	0.707
Revised Forecast	1.169	5.789	5.764	0.718	0.717

4.4. Total capital expenditure

Aurora's revised forecasts (including escalations and overheads) for capital expenditure for the forthcoming *Regulatory Control Period* are set out in Table 23.

Table 23

Total capex

Aurora's total capital expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Capitalised overheads					
Capitalised overheads	18.832	18.869	18.349	17.975	18.058
System					
Demand related	46.907	47.264	43.613	46.615	42.330
Non-demand related	41.685	34.112	34.264	34.979	35.246
Regulatory obligations or requirements	5.514	5.502	5.256	5.217	5.214
Non system					
Non-network	18.177	15.149	13.468	15.638	15.597
SCADA and network control	1.169	5.789	5.764	0.718	0.717
Total expenditure	**132.284**	**126.685**	**120.714**	**121.142**	**117.162**

5. Operating expenditure

5. Operating expenditure

5.1. Rules requirements

Clause 6.12.3(a) of the *Rules* provides that the AER may accept or approve, or refuse to accept or approve, any element of Aurora's *Regulatory Proposal*. This means the AER may either accept or approve Aurora's total operating expenditure forecasts, or refuse to accept or approve Aurora's total operating expenditure forecasts on the basis of information provided in Aurora's *Regulatory Proposal*.

Clause 6.12.1(4) of the *Rules* provides that where the AER refuses to accept or approve Aurora's total operating expenditure forecasts it must set out its reasons for that decision and its own estimate of the total of Aurora's required operating expenditure for the forthcoming *Regulatory Control Period*. In reaching a decision the AER must be satisfied that the forecast reflects the operating expenditure criteria, and have regard to the operating expenditure factors.

Clause 6.5.6(a) of the *Rules* requires that Aurora's *Regulatory Proposal* must include the total forecast operating expenditure for the forthcoming *Regulatory Control Period*, which it considers meets each of the operating expenditure objectives. These objectives are to:

(1) meet or manage the expected demand for *Standard Control Services* over that period;

(2) comply with all applicable regulatory obligations or requirements associated with the provision of *Standard Control Services*;

(3) maintain the quality, reliability and security of supply of *Standard Control Services*; and

(4) maintain the reliability, safety and security of the distribution system through the supply of *Standard Control Services*.

Clause 6.5.6(b) of the *Rules* requires that Aurora's operating expenditure forecast must:

(1) comply with the requirements of any relevant regulatory information instrument;

(2) be for expenditure that is properly allocated to *Standard Control Services* in accordance with the principles and policies set out in Aurora's Cost Allocation Method;

(3) include both:

  (i) the total of the forecast operating expenditure for the forthcoming *Regulatory Control Period*; and

  (ii) include the forecast of the operating expenditure for each *Regulatory Year* of the forthcoming *Regulatory Control Period*.

Clause 6.5.6(c) of the *Rules* requires that the AER accept Aurora's forecast of required operating expenditure if it is satisfied that the total of the forecast operating expenditure for the forthcoming *Regulatory Control Period* reasonably reflects the operating expenditure criteria.
The operating expenditure criteria require that the forecast reflect:

(1) the efficient costs of achieving the operating expenditure objectives;

(2) the costs that a prudent operator in Aurora's circumstances would require to achieve the operating expenditure objectives; and

(3) a realistic expectation of the demand forecast and cost inputs required to achieve the operating expenditure objectives.

Clause 6.5.6(e) of the *Rules* sets out 10 operating expenditure factors which reflect the matters which the AER must have regard to in determining its satisfaction that the forecast operating expenditure for the forthcoming *Regulatory Control Period* reasonably reflects the operating expenditure criteria.

Further, schedule 6.1.2 of the *Rules* requires that Aurora set out the following information and matters relating to operating expenditure:

(1) a forecast of the required operating expenditure that complies with the requirements of clause 6.5.6 of the *Rules* and identifies the forecast operating expenditure by reference to well accepted categories such as:

  (i) particular programs; or

  (ii) types of operating expenditure (e.g. maintenance, payroll, materials etc),

and identifies in respect of each such category:

  (i) to what extent that forecast expenditure is on costs that are fixed and to what extent it is on costs that are variable; and

  (ii) the categories of distribution services to which that forecast expenditure relates;

(2) the method used for developing the operating expenditure forecast;

(3) the forecasts of key variables relied upon to derive the operating expenditure forecast and the method used for developing those forecasts of key variables;

(4) the method used for determining the cost associated with planned maintenance programs designed to improve the performance of the relevant distribution system for the purposes of any service target performance incentive scheme that is to apply to Aurora in respect of the relevant *Regulatory Control Period*;

(5) the key assumptions that underlie the operating expenditure forecast;

(6) a certification of the reasonableness of the key assumptions by the directors of Aurora;

(7) operating expenditure for each of the past *Regulatory Years* of the previous and current *Regulatory Control Periods*, and the expected operating expenditure for each of the last two *Regulatory Years* of the current *Regulatory Control Period*, categorised in the same way as for the operating expenditure forecast; and

(8) an explanation of any significant variations in the forecast operating expenditure from historical operating expenditure.

Clause 6.10.3(b) of the *Rules* requires that Aurora may only make the revisions so as to incorporate the substance of any changes required to address matters raised by the *Draft Distribution Determination* or the AER's reasons in its *Revised Regulatory Proposal*.

Clause 6.10.3(c) of the *Rules* requires that a *Revised Regulatory Proposal* must comply with the requirements of, and must contain or be accompanied by the information required by, any relevant regulatory information instrument.

5.2. AER's Draft Distribution Determination

5.2.1. Introduction

This section outlines the key areas of the AER's *Draft Distribution Determination* and major deviations from Aurora's *Regulatory Proposal* in relation to forecast operating expenditure.

Aurora submitted its *Regulatory Proposal* to the AER on 31 May 2011. Within Aurora's *Regulatory Proposal*, expenditure and revenue forecasts were classified in accordance with the requirements of the AER and were underpinned by a detailed work program.

In delivery of the AER's *Draft Distribution Determination*, the AER has rejected Aurora's forecast operating expenditure and replaced it with a forecast determined by the AER developed using a base year forecasting approach. This approach appears at odds with the AER's recent rule-change proposal where it stated:

> *"The second restriction that the substitute must be formed on the basis of the DNSP's proposal, locks the regulator into forming a substitute in the same manner as determined by the DNSP in their proposal. As most proposals are based on a large amount of engineering detail and a `bottom up' calculation of the required expenditure, the AER must conduct a line by line analysis in order to reduce the forecast to fall back within the `reasonable' range."*[1]

Table 24

Summary of AER's Draft Distribution Determination

Opex category $2009-10	Aurora proposed	AER Draft Determination	Difference
Operating costs			
Network management	78.830		
Non-network management	56.802		
Operating costs – other	22.927		
Maintenance costs			
Routine maintenance	79.858		
Non-routine maintenance	98.377		
Demand management	3.335		
TOTAL (exc debt raising & DMIS costs)	**340.129**	**307.141**	**(32.988)**

Aurora does not accept the AER's approach in a number of areas and considers that the approach and subsequent *Draft Distribution Determination* is inappropriate at a time when Aurora is undergoing significant structural changes.

Aurora has also undertaken a complete review of information provided to the AER as part of its *RIN Response* relating to operating expenditure as a consequence of the AER's base year forecasting approach. This review has highlighted an allocative error in Aurora's provision accounts for the current *Regulatory Control Period* that is fundamental to the reallocation of Aurora's accounts to match the RIN required service classifications and Aurora's CAM. Correction of this error has resulted in a movement of provision expenses between operating and capital expenditure and between the service classifications.

The remainder of this section will discuss the AER's approach to assessing Aurora's proposed operating expenditure forecasts and detail the differences between Aurora's proposed operating expenditure forecasting approach and the methodology adopted by the AER in its *Draft Distribution Determination*

1 Rule change proposal, Economic regulation of transmission and distribution network service providers, AER's proposed changes to the National Electricity Rules, September 2011

5.2.2. Operating expenditure

The AER has stated that it is not satisfied that Aurora's total forecast operating expenditure reasonably reflects the operating expenditure criteria and has rejected Aurora's methodology for establishing forecast operating expenditure.

Aurora developed its operating expenditure forecasts from a detailed program of work that included each of the operating and maintenance projects Aurora considers will be required during the forthcoming *Regulatory Control Period*. Aurora provided the AER with Management Plans as the basis for justification for each proposed project or program as well as estimated work volumes and rates. Aurora's proposed operating expenditure forecast also included shared costs, including corporate and shared services costs and the distribution business divisional overhead costs.

As part of the review of Aurora's operating expenditure forecasts, the AER engaged Nuttall Consulting to assess Aurora's expenditure in the 2009-10 base year. Nuttall Consulting's assessment of Aurora's proposed operating expenditure was limited to this base year. A full review of Aurora's five year detailed operating expenditure program of work was not undertaken by either Nuttall Consulting or the AER.

The AER has estimated a substituted total operating expenditure for Aurora that the AER considers reflects the operating expenditure criteria. The AER's substituted operating expenditure forecast has been developed using a base year approach rather than Aurora's proposed detailed program of work methodology.

In developing its alternative operating expenditure forecast, the AER has:

- used 2009-10 as the preferred base year (being the most recent year for which audited data was available);
- removed non-recurrent expenditure and movements in provisions;
- determined a level of non-recurrent expenditure, that the AER considers is efficient, which is applied to the base level of operating expenditure;
- reviewed and adjusted some categories of base year expenditure, most notably a downward adjustment to fault and emergency and network management categories; and
- projected the base year forward by adjusting for step changes, forecast network growth and real cost escalation.

Step changes

As part of its review of the AER's *Draft Distribution Determination*, Aurora has also identified an additional 2012-13 step change within the operating costs RIN category that has not been recognised by the AER. This step change relates to the provision of IT system maintenance costs and software charges resulting from the implementation of Aurora's distribution network IT strategy.

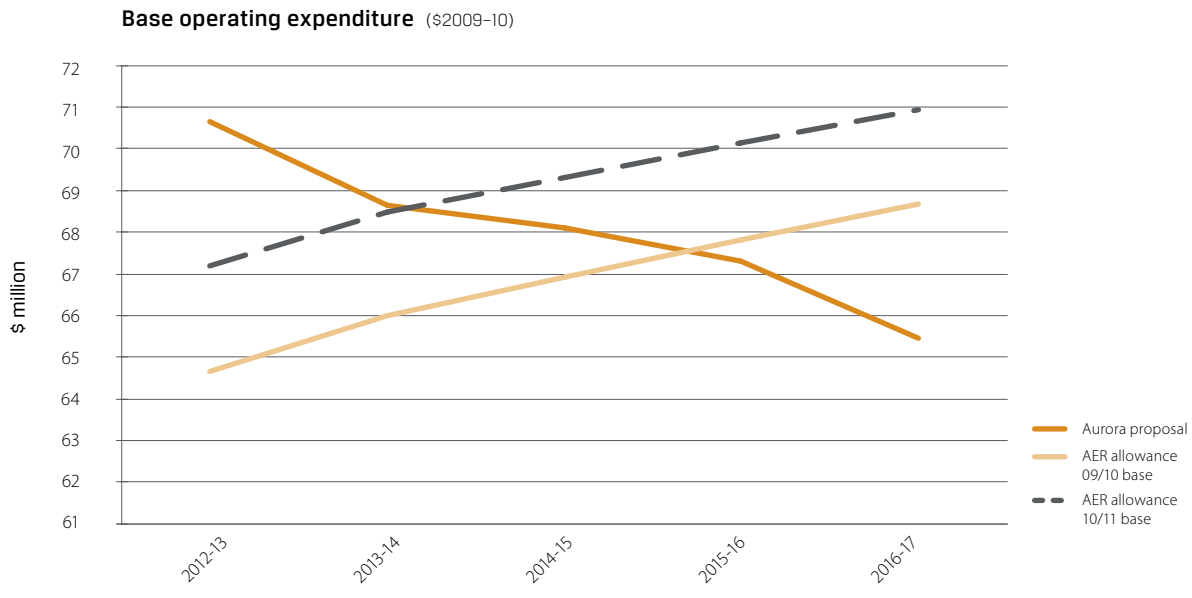
5.2.3. Base year operating expenditure

The AER stated that its 'normal' practice when establishing the base year for operating expenditure is to use the second last (2010-11) year of the *Regulatory Control Period*. As Aurora did not have audited data for the 2010-11 year the AER instead used 2009-10 as its base year. This use of a base year by the AER is in part predicated on the AER's assessment of what constitutes Aurora's 'stable' operating environment and the AER's ability to forecast Aurora's future year-on-year changes.

Aurora considers that the AER's methodology is inappropriate when the operating environment of the distribution business (in this case Aurora) is in a period of substantial change. This is demonstrated by replicating the AER's proposed outcomes utilising 2010-11 as the base year (the AER's `normal' practice). with the Aurora identified adjustments. These outcomes are shown in Figure 11.

Figure 11

Base year operating expenditure



The major driver of this change in forecast operating expenditure is entirely due to the changes, or movements, that have occurred in Aurora's provision accounts. The AER has asserted that these movements are non-recurrent in nature and should be removed from the base year expenditure. This assessment by the AER therefore relies on the business having a 'normal' allocation of provisions each financial year.

Aurora's business operations underwent significant change during the 2009-10 year as the structures of its energy and distribution businesses were redefined. This restructuring resulted in a reallocation of the corporate provision accounts to the newly created businesses (distribution and energy). This reallocation resulted in a significant increase ($1.2 million) in the provisions that were deemed to be held for the distribution business.

During the 2010-11 financial year further restructuring occurred within the distribution business that resulted in the separation of a number of staff and the resultant requirement to `call on' the Aurora provisions. This resulted in a significant decrease ($1.9m) in the provisions that were deemed to be held for the distribution business.

In the case of Aurora, this choice of base year, and the removal of the movements in the provision accounts becomes an important consideration:

- The use of 2009-10 requires the removal of the $1.2 million increase in provisions, or a $1.2 million **decrease** in operating expenditure.
- The use of 2010-11 requires the removal of the $1.9 million decrease in provisions, or a $1.9 million **increase** in operating expenditure.
- The total adjustment arising with the use of 2010-11 is a $3.1 million **increase** in operating expenditure over that utilising 2009-10.

Whilst the use of a base year may appear attractive, Aurora considers that the AER approach is inappropriate at a time when the Aurora business is undergoing fundamental change. At a time such as this, consideration must be given to the underlying factors that drive business expenditure. This operating expenditure volatility is further evidenced by a comparison of the actual and forecasts operating expenditure outcomes for Aurora for the period 2009-13.

Other operating expenditure increases significantly in 2012-13 from that during the period 2009-11 as a consequence of the implementation of Aurora's Distribution Network ISG Strategy. The implementation of this approved strategy will result in associated increases in software and maintenance expenditure for IT systems. There is an increase in routing maintenance expenditure over historic trends in recognition of the decreases that are occurring in Aurora's capital expenditure programs. Aurora is also undertaking activities such as demand management that are not currently performed.

Aurora considers that this volatility in year on year expenditure provides further weight to its argument that use of simple escalation models is incorrect when the base is wrong, and a cost build up approach is the most appropriate mechanism to determine operating expenditure forecasts in a time of significant structural reform.

The use of a base year by the AER also fails to recognise the shared services overheads that must be allocated in accordance with the AER approved Aurora CAM. The Aurora CAM allocates these `overheads' on the basis of the total operating expenditure and relies on the constituent expenditure before these `overheads' are applied. The use of a base year by the AER assumes that these overheads are allocated in the same quantum each year and takes no account of the expenditure (less overheads) that is forecast to be required. The resultant misallocation also means that the other forms of control (especially Alternative Control Services) do not receive an appropriate allocation of these overheads.

Aurora has prepared revised operating expenditure forecasts based on its assessment of the AER's *Draft Distribution Determination*, but has not used a base year approach. Aurora has also analysed the review undertaken by Nuttall Consulting, when reviewing the 2009-10 operating expenditure, and factored a number of these recommendations into its revised operating expenditure forecasts.

Aurora has reviewed Nuttall Consulting's analysis and conclusions in relation to operating expenditure relating to:

- GSL payments;
- emergency and unscheduled power system response and repair; and
- vegetation management.

Aurora has updated its forecast operating expenditure in these areas to reflect the outcomes within Nuttall Consulting's report.

Should the AER continue to utilise a base year approach to setting forecast operating expenditure Aurora contends that it is appropriate to use the most recent year (i.e. 2010-11) as the starting position. Although, once again, the impacts of Aurora's restructuring needs to be factored into the AER's assessment. In view of the significant costs associated with this restructuring, Aurora's distribution business has had to limit its operating expenditure during the current *Regulatory Control Period* to achieve long term sustainable outcomes. However, this is not achievable on an ongoing basis and would impact on reliability and safety outcomes if carried forward to the forthcoming *Regulatory Control Period*. The AER must also make allowance for the significant changes that are occurring within Aurora's provision accounts and the requirements of the Aurora CAM to allocate `overheads'.

5.2.4. Demand and economic forecasts

The AER has modified or replaced the majority of the Aurora's demand and economic forecasts with more up-to-date data as part of its review of the Aurora *Regulatory Proposal*. Aurora has in turn updated a number of its previous, and AER amended, forecasts to reflect more up-to-date data sets and includes these updates as part of this *Revised Regulatory Proposal*. These forecasts also underpin a number of the programs that have been proposed for operating expenditure and will therefore impact Aurora's revised operating expenditure forecasts.

Aurora considers that these forecasting methodologies now meet the AER requirements and Aurora does not expect any other changes in approach by the AER.

5.2.5. Supporting information

Aurora has prepared a number of papers supporting its positions regarding the operating expenditure proposed within the AER's *Draft Distribution Determination*. These papers provide a detailed analysis of the AER's draft decisions and Aurora's reasoning for not accepting or modifying the AER's draft decisions. These papers are appended as an attachment to this *Revised Regulatory Proposal*.

5.3. Revised operating expenditure forecasts

This section of Aurora's *Revised Regulatory Proposal* will focus on the revised forecast operating expenditure for the forthcoming *Regulatory Control Period*.

Aurora has developed a revised detailed work program containing the operating and maintenance projects it has forecast will be required during the forthcoming *Regulatory Control Period*. This revised work program includes estimated volumes and rates for each project, for each year of the forthcoming *Regulatory Control Period*. These projects have been further classified to individual work and RIN categories and form the basis of Aurora's total revised operating expenditure forecasts for the forthcoming *Regulatory Control Period*. Aurora's revised work program is appended as an attachment to this *Revised Regulatory Proposal*.

Aurora has separated its revised operating expenditure proposals into three primary RIN categories and six subcategories as detailed in Table 25.

Table 25

Opex RIN categories

RIN Category	RIN Subcategory
Operating costs	Network division management
	Non-network divisional management
	Operating costs – other
Maintenance costs	Routine maintenance
	Non-routine maintenance
Demand management	Demand management

Key assumptions

The key assumptions underlying Aurora's revised network division management operational expenditure works forecast are that:

- Aurora's overall network strategy will remain unchanged for the forthcoming *Regulatory Control Period*;
- Aurora's Management Plans will remain unchanged for the forthcoming *Regulatory Control Period*;
- Aurora's work practices will remain unchanged for the forthcoming *Regulatory Control Period*;
- the TEC will remain in force, and that any replacement will impose similar and not more prescriptive requirements upon Aurora in relation to asset replacement;
- Aurora's ICAM provides an appropriate method for apportioning corporate and shared costs to the Network division;
- Aurora's aged asset replacement model provides a prudent method of determining the asset replacement timetable for Aurora's assets;
- the frequency and magnitude of network impacts requiring non-routine maintenance experienced in the current *Regulatory Control Period* is a proxy for the level that will be experienced in the forthcoming *Regulatory Control Period*;
- Aurora's method of assessing operating expenditure is a prudent method of determining the costs involved;
- the unit rates applied to expenditure will be the same as the out-turn costs faced by Aurora;
- the overheads applied to expenditure will be the same as the out-turn costs faced by Aurora; and
- the escalation applied to expenditure will be the same as the out-turn costs faced by Aurora.

Methodology to derive forecasts

The methodology used by Aurora to develop the forecast projects for each work category is set out in Aurora's Management Plans.

5.3.1. Network division management

Background

Network division management activities relate to operational expenditure incurred by the Network division in planning, operating and monitoring the distribution network.

The costs incurred in network division management are set out in detail below, and include the following six expenditure subcategories:

- network management;
- customer service;
- regulatory;
- NEM levy;
- electrical safety levy; and
- GSL payments.

The largest category cost within network division management is network management with a revised forecast requirement of $47.7 million ($2009-10 including escalations and overheads) over the forthcoming *Regulatory Control Period*. This is a significant category of expenditure as it reflects the costs of managing the Network division and includes activities such as:

- fault and operations relating to the labour and associated costs with fault operators and manning switchboards;
- the network customer group that facilitates the customer dispute process, implements and improves customer service strategies that meet customer needs and expectations, and administers the customer charter;
- regulatory costs relating to the preparation of regulatory submissions, information requests, responses, setting tariffs, revenue and pricing submissions;
- commercial services relating to the provision of commercial awareness and advice, financial services and analysis across the distribution business, preparation of board reports, revenue recovery analysis, modelling, regulated and year end accounts, and policies and guidelines for the distribution business;
- asset management teams responsible for the management and planning of distribution assets;
- distribution IT systems relating to the management costs associated with strategic planning and IT architecture;
- the distribution executive team – one business development executive team providing shared service across the two divisions (strategic vision and leadership);
- the market services team which has expanded responsibilities with the advent of the NEM and retail competition;
- ensuring compliance with all the metering and connection work, including the meter technical specification, metering procedures, work instructions and the Service and Installation *Rules*; and
- IT licence fees and maintenance contractor and consultancy costs to run the business.

Drivers

The primary cost drivers for revised network division management operational expenditure stem from the following:

- customer service requirements;
- reliability requirements;
- risk requirements;
- life cycle cost requirements;
- asset management policy compliance;
- capacity requirements;
- legislative and safety obligations; and
- environmental obligations.

Methodology to derive forecasts

The costs that underpin this expenditure are located in Aurora's budgeting and forecasting tool (BAF).

Table 26

Network division management opex

Aurora's network division management operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Network management	9.845	9.743	9.524	9.327	9.300
Customer service	1.517	1.502	1.468	1.422	1.412
Regulatory	0.308	0.304	0.742	1.188	1.183
NEM levy	0.313	0.314	0.310	0.308	0.305
Electrical safety levy	2.708	2.715	2.686	2.662	2.637
GSL Payments	1.341	1.309	1.279	1.250	1.258

Expenditure variations

There are no instances where expenditure differs significantly from that of the current *Regulatory Control Period*.

Opex/capex interactions

There is a strong relationship between network division management and capital expenditure as network divisional management is vital from the time that capital expenditure is forecast to be required in network planning, to its costing phase, funding submissions to the regulator, construction phase and operation.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for network division management operating expenditure for the forthcoming *Regulatory Control Period* are set out in Table 27.

Table 27

Network division management opex

Aurora's network division management operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	15.661	15.511	15.737	15.904	16.016
Revised Forecast	16.031	15.886	16.011	16.156	16.094

5.3.2. Non-network division management

Background

Non-network division management comprises three categories of operating expenditure being:

- system operations;
- corporate and shared services costs; and
- NEM and contestability related costs.

Operational activities for systems operations will remain consistent with historical practices. That is, these activities will continue to be performed to manage the real time operation of Aurora's distribution network and to ensure that the network is operated safely and within operating and load limits. It is a business imperative that the activities conducted by system operations deliver:

- no increase in customer service impacts (SAIDI/SAIFI) from current levels;
- no serious injury or loss of life arising from the operation of the network; and
- no prosecutions for breaches of legislative compliance.

Broadly, corporate and shared costs relate to expenditure which is incurred across Aurora at an organisation-wide level. Aurora's ICAM allocates these costs to the Network Services and Network divisions. As the portion allocated to the Network Services division is already included in the work program values set out in other operating expenditure sections, this section discusses just the component of these costs that is allocated to the Network division.

NEM and contestability related costs comprise those activities undertaken within the Network division to ensure Aurora's distribution NEM operational capabilities and retail contestability requirements are met. These activities are typically performed by the members of the Market Services team but do however include those components from other teams that undertake 'market' activities and interactions.

Drivers

The primary cost drivers for the systems operations component of non-network division management operational expenditure stem from the following:

- reliability obligations; and
- customer services obligations.

The drivers of corporate and shared services costs are numerous and diverse and as a consequence are not set out in this section. These are however set out in detail in Aurora's CAM.

The drivers of NEM and contestability related costs are related to Aurora's operations in the NEM and the functions required to enable retail contestability activities.

Methodology to derive forecasts

For revised systems operations, the volumes and projects for all work categories that underpin this expenditure are located in Aurora's revised distribution work program. The individual categories within the revised work program can be referenced to specific sections of Aurora's Management Plans, and this section sets out the relevant plan for each work category listed.

For revised corporate and shared services costs, the volumes and projects for the activities that underpin this expenditure are forecast by Aurora's corporate team. These forecasts are built up with regard to both corporate-wide strategies and parameters; and forecasts and planning considerations by each division and subsidiary within Aurora. The costs are allocated to each division and subsidiary using Aurora's ICAM on the basis of the most appropriate driver.

For NEM and contestability related costs, the revised volumes and projects for the individual categories that underpin this expenditure are located in BAF.

Table 28

Non-network division management opex

Aurora's non-network division management operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
System operations	0.371	0.365	0.357	0.347	0.334
Corporate and shared services costs	9.882	9.856	9.817	9.810	9.808
NEM and contestability related	1.476	1.482	1.476	1.471	1.467

Expenditure variations

There are no instances where revised expenditure differs significantly from that of the current *Regulatory Control Period*.

Opex/capex interactions

There is a strong relationship between revised system operations operating expenditure and the revised non-demand related capital expenditure category which relates to capital expenditure on assets in accordance with the network vision, asset Management Plan and thread Management Plans. This is because expenditure on non-network divisional management ensures assets are operated within manufacturers' specifications and guidelines which will prolong their life and defers the need for new assets.

There is no relationship between revised corporate and shared services operating expenditure and revised capital expenditure.

As Aurora will have implemented its NEM and contestability related capital projects prior to the commencement of the forthcoming *Regulatory Control Period,* there is no relationship between this revised operating expenditure and capital expenditure.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for non-network division management operating expenditure for the forthcoming *Regulatory Control Period* are set out in Table 29.

Table 29

Non-network division management opex

Aurora's non-network division management operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	11.489	11.401	11.381	11.280	11.250
Revised Forecast	11.729	11.702	11.650	11.628	11.609

5.3.3. Other operating costs

Background

The other operating costs operating expenditure covers all other operating expenditure not specifically covered in another category and is consequently diverse in its nature. This expenditure category does not include subcategories.

Projects undertaken under other operating costs relate to the following activities:

- service provider charges (services);
- licences and maintenance agreements;
- system spares management;
- distribution SCADA operating costs, modem, communications, etc;
- the installation of power quality meters – communications costs;
- consumables and minor repairs; and
- data services.

Drivers

The drivers for this category relate to:

- customer service requirements; and
- reliability requirements.

Methodology to derive forecasts

As noted previously, the revised volumes and projects for all work categories that underpin this expenditure are located in Aurora's revised work program, and taking account of the AER's *Draft Distribution Determination* and the review of operating expenditure by Nuttall Consulting. The individual categories within the revised work program can be referenced to specific sections of Aurora's Management Plans and strategy documents.

Other operating costs

A revised total of $22.5 million is forecast to be required within this category over the forthcoming *Regulatory Control Period*. This revised expenditure is forecast across one subcategory; operating costs other. This expenditure profile is constant throughout the *Regulatory Control Period*.

The largest work category expenditure relates to software and hardware service provider charges.

The methodology used to develop the forecast projects is set out in Aurora's Management Plans. The relevant Management Plans are:

- Management Plan 2011 – Protection and Control; and
- Distribution Network IT Strategy.

The anticipated works are based on implementing the initiatives in the Network IT Strategy. Aurora's implementation of this strategy is discussed in greater detail in section 11.4.5 of Aurora's *Regulatory Proposal*.

Expenditure variations

The implementation of the Network IT strategy has resulted in a significant increase in revised operating expenditure from that of the current *Regulatory Control Period*.

Opex/capex interactions

There is a strong relationship between other operating costs operational expenditure and capital expenditure. This is because other operating costs covers hardware service provider charges, maintenance agreements and minor repairs which directly and indirectly prolong the life of existing assets and defers the need for new assets.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for operating costs – other operating expenditure for the forthcoming *Regulatory Control Period* are set out in Table 30.

Table 30

Other operating costs opex

Aurora's other operating costs operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	4.531	4.559	4.586	4.612	4.639
Revised Forecast	4.551	4.525	4.482	4.480	4.497

5.3.4. Routine maintenance

Background

Routine maintenance comprises scheduled inspection and maintenance activities. It is generally carried out at predetermined intervals, or in accordance with prescribed criteria, in order to minimise the probability of network failure; minimise total life cycle costs; meet required operating conditions and performance standards; and keep staff and the public safe. Routine maintenance prolongs the life of existing assets, reduces the probability of failure or the degradation of the performance of an asset and therefore the need for non-routine maintenance.

Work that is identified from the routine maintenance program can be undertaken as either asset replacement capital expenditure or non-routine maintenance, so that operating expenditure due to an unexpected event or failure is minimised and total maintenance expenditure is optimised.

As discussed in Aurora's Asset Management Plan, the maintenance program is driven by the following principles:

- reliable operation to meet the needs of the customer;
- ensure existing assets are safe and compliant with all applicable legislation;
- reach the least cost trade-off between different modes of maintenance (repair, refurbishment, replacement);
- reach the optimal reactive-preventative maintenance ratio for the asset base;
- condition monitoring and predictive analysis forms the foundation of asset maintenance; and
- the optimal mode of managing assets varies between asset classes.

It is noted that time-based cycles of routine servicing are undertaken where condition-based monitoring is not practical or possible. The application of these techniques is based on manufacturer's recommendations, industry practice and Aurora's own experience.

Revised expenditure on routine maintenance is relatively stable each year and is forecast at $90.7 million over the forthcoming *Regulatory Control Period*.

Routine maintenance operational expenditure covers two categories, being:

- network asset maintenance; and
- non-network asset maintenance,

which includes seven subcategories.

Drivers

The drivers for this category are:

- customer service requirements;
- reliability requirements;
- legislative and safety obligations;
- capacity requirements;
- risk mitigation; and
- life cycle cost requirements.

Methodology to derive forecasts

As noted previously, the revised volumes and projects for all work categories that underpin this expenditure are located in Aurora's revised work program and taking account of the AER's *Draft Distribution Determination* and the review of operating expenditure by Nuttall Consulting. The individual categories within the work program can be referenced to specific sections of Aurora's Management Plans, and this section sets out the relevant Management Plan for each work category.

Network asset maintenance

A revised total of $44.3 million is forecast to be required within this category over the forthcoming *Regulatory Control Period*. This expenditure is forecast to be required across five overall subcategories, being:

- ground mounted substations;
- overhead network and structures;
- underground network;
- zone substations; and
- routine maintenance other.

Table 31

Network asset management opex

Aurora's network asset management operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Ground mounted substations	1.141	1.112	1.088	1.056	1.020
Overhead network and structures	5.479	5.459	5.447	5.393	5.304
Underground network	0.157	0.155	0.152	0.149	0.145
Zone substations	1.631	1.627	1.561	1.547	1.518
Routine maintenance other	0.649	0.641	0.631	0.618	0.593

Non-network asset maintenance

A revised total of $46.4 million is forecast to be required within this category over the forthcoming *Regulatory Control Period*. This expenditure is forecast to be required across two overall subcategories, being:

- connection asset repair; and
- vegetation management.

Table 32

Non-network asset management opex

Aurora's non-network asset management operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Connection asset repair	0.576	0.566	0.554	0.538	0.518
Vegetation management	8.917	8.817	8.682	8.629	8.613

Expenditure variations

There are no instances where revised expenditure differs significantly from that of the current *Regulatory Control Period*. Aurora has however forecast increases in expenditure within the overhead network and structures subcategory for asset repairs associated with defects in the overhead network; and within the ground mounted substations and the zone substations subcategories for compliance obligations associated with substations.

Opex/capex interactions

There is a strong relationship between routine maintenance and:

- the non-demand related capital expenditure category which relates to capital expenditure on assets in accordance with the network vision, Asset Management Plan and thread Management Plans. This is because expenditure on routine maintenance prolongs the life of existing assets and defers the need for new assets.

- the non-routine maintenance program because, if routine maintenance programs do not identify assets for replacement which should be identified as such, then issues may occur which require unplanned maintenance activities.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for routine maintenance operating expenditure for the forthcoming *Regulatory Control Period* are set out in Table 33.

Table 33

Routine maintenance opex

Aurora's routine maintenance operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	16.626	16.261	16.034	15.726	15.211
Revised Forecast	18.550	18.377	18.116	17.931	17.712

5.3.5. Non-routine maintenance

Background

Non-routine maintenance expenditure refers to operating expenditure on repair work identified and assessed as defects to prevent dangerous occurrences such as unplanned outages or hazardous electrical events. This category of work is carried out on a regular basis and involves both:

- repair and replacement work that is carried out after defects are identified through routine maintenance, in order to fix the defect and prevent an outage or a dangerous electrical event occurring; and
- unplanned repair, replacement or restoration work undertaken as a matter of urgency after an unexpected event or failure to ensure that the system is at least operating at the minimum standard.

One of the key drivers for non-routine maintenance is Aurora's condition assessment and inspection program. Inspection processes generating high volumes of data utilise electronic field capture systems to minimise data processing.

Although expenditure in this category is emergent, Aurora must make provision for non-routine maintenance activities in deriving its operating expenditure forecasts. Aurora's maintenance program is driven by the need to:

- ensure reliable operation to meet the needs of the customer;
- ensure existing assets are safe and compliant with all applicable legislation;
- reach the least cost trade-off between different modes of maintenance (repair, refurbishment, replacement); and
- reach the optimal reactive-preventative maintenance ratio for the asset base.

Aurora notes that an identified defect can be repaired and expensed as non-routine maintenance, or alternatively capitalised as non-demand related expenditure, with the treatment of the defect being governed by Aurora's capitalisation policies.

Revised expenditure on non-routine maintenance remains relatively stable over the forthcoming *Regulatory Control Period* and is forecast at $101.5 million.

Non-routine maintenance operational expenditure covers two categories, being:

- network asset maintenance; and
- non-network asset maintenance;

which include nine subcategories including overhead network and structures, emergency and unscheduled power system and vegetation management.

Drivers

The drivers for this category are:

- customer service requirements;
- reliability requirements;
- asset management policy compliance;
- risk requirements; and
- life cycle cost requirements.

Methodology to derive forecasts

As noted previously, the revised volumes and projects for all work categories that underpin this expenditure are located in Aurora's revised work program and taking account of the AER's *Draft Distribution Determination* and the review of operating expenditure by Nuttall Consulting. The individual categories within the work program can be referenced to specific sections of Aurora's Management Plans, and this section sets out the relevant Management Plan for each work category listed.

Network asset maintenance

A revised total of $27.8 million ($2009-10 including escalations and overheads) is forecast to be required within this category over the forthcoming *Regulatory Control Period*. This revised expenditure is forecast to be required across six overall subcategories, being:

- decommission assets;
- ground mounted substations;
- non-routine maintenance other;
- overhead network and structures;
- underground systems; and
- zone substations.

Table 34

Network asset maintenance opex

Aurora's network asset management operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Decommission assets	0.636	0.626	0.615	0.600	0.583
Ground mounted substations	0.456	0.449	0.441	0.429	0.416
Non-routine maintenance other	0.910	0.894	0.875	0.850	0.819
Overhead network and structures	3.194	3.151	3.104	3.048	2.983
Underground systems	0.464	0.459	0.453	0.445	0.435
Zone substations	0.093	0.092	0.090	0.088	0.086

Non-network asset maintenance

A revised total of $73.7 million ($2009-10 including escalations and overheads) is forecast to be required within this category. This expenditure is forecast to be required across three overall subcategories, being:

- connection asset repair;
- emergency and unscheduled power system;
- electrical safety and installation inspection; and
- vegetation management.

Table 35

Network asset maintenance opex

Aurora's network asset management operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Connection asset repair	0.107	0.106	0.103	0.100	0.097
Emergency and unscheduled power system	13.872	13.711	13.501	13.216	12.892
Electrical safety and installation inspection	0.300	0.300	0.300	0.300	0.300
Vegetation management	0.924	0.913	0.899	0.893	0.892

Expenditure variations

There are no instances where revised expenditure differs significantly from that of the current *Regulatory Control Period*. Aurora has however forecast increases in expenditure within the overhead network and structures and ground mounted substations subcategory for asset defect repairs.

Opex/capex interactions

There is a strong relationship between non-routine maintenance and:

- the non-demand related capital expenditure which includes capital expenditure on infrastructure components that have failed or are imminently about to fail. This is because one of the objectives of non-demand related programs is to identify where specific activity is required to mitigate network failure as well as to reduce costs and comply with required standards. However it is important to note that non-routine maintenance activities are emergency works and can be driven by unpredictable and unavoidable factors such as adverse weather conditions. As such increased non-demand related capital expenditure activities provide only limited benefits to reducing forced maintenance operating expenditure; and
- the routine maintenance operating expenditure which essentially identifies the assets that require replacement for condition-based risk reasons. There is a minor relationship between these categories as Aurora, at times, undertakes non-routine maintenance to rectify network failure that may not have occurred if it had been identified and rectified earlier. A decision is then made as to whether to rectify the issue as operating expenditure, or to capitalise the expenditure under an asset replacement capital expenditure category. Any reduction in routine maintenance program will result the reduced identification of defects, and will therefore increase outages and dangerous electrical events and a need for increased non-routine maintenance operating expenditure.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for non-routine maintenance operating expenditure for the forthcoming *Regulatory Control Period* are set out in Table 36.

Table 36

Non-routine maintenance opex

Aurora's non-routine maintenance operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	21.439	20.501	19.860	19.030	17.547
Revised Forecast	20.957	20.701	20.382	19.970	19.501

5.3.6. Demand management

Background

Demand management expenditure refers to operating expenditure on activities that are designed to minimise the impact of peak demand on the distribution network and to defer capital expenditure resulting from increases in overall system demand. This category of work is in excess of that undertaken as part of the AER's demand management incentive scheme.

One of the key drivers for demand management expenditure is the need to find suitable alternatives to continued investment in the distribution network as demand grows. This can be achieved by means of alternative non-network solutions or incentives that provide customers with the means to minimise demand increases.

Drivers

The drivers for this category are:

- customer service requirements;
- reliability requirements;
- risk requirements; and
- life cycle cost requirements.

Methodology to derive forecasts

As noted previously, the revised volumes and projects for all work categories that underpin this revised expenditure are located in Aurora's revised work program and taking account of the AER's *Draft Distribution Determination* and the review of operating expenditure by Nuttall Consulting. The individual categories within the revised work program can be referenced to specific sections of Aurora's Management Plans, and this section sets out the relevant Management Plan for each work category.

Demand management

A revised total of $3.3 million ($2009-10 including escalation and overheads) is forecast to be required within this category over the forthcoming *Regulatory Control Period*. This expenditure is forecast to be required across one subcategory; operating costs other. This expenditure profile varies throughout the *Regulatory Control Period*.

The largest work category expenditure relates to capex deferrals.

Expenditure variations

This is a new category of expenditure and is not included in the current *Regulatory Control Period*.

Opex/capex interactions

There is a strong relationship between demand management operating expenditure and demand related capital expenditure. This is because one of the objectives of demand management programs is to identify specific activities that will lead to the deferral or necessity for demand related network investment. Successful implementation of demand management schemes and incentives will lessen the need for demand related capital expenditure.

Forecasts

Aurora's revised forecasts (including escalations and overheads) for demand management operating expenditure for the forthcoming *Regulatory Control Period* are set out in Table 37.

Table 37

Demand management opex

Aurora's demand management operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Original Forecast	0.891	0.411	0.501	0.746	0.786
Revised Forecast	0.895	0.408	0.490	0.724	0.762

5.4. Total operating expenditure

Aurora's revised forecasts (including escalations and overheads) for operating expenditure for the forthcoming *Regulatory Control Period* are set out in Table 38.

Table 38

Total opex

Aurora's total operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Operating costs					
Network management	16.031	15.886	16.011	16.156	16.094
Non-network management	11.729	11.702	11.650	11.628	11.609
Operating costs - other	4.551	4.525	4.482	4.480	4.497
Maintenance costs					
Routine maintenance	18.550	18.377	18.116	17.931	17.712
Non-routine maintenance	20.957	20.701	20.382	19.970	19.501
Demand management					
Demand management	0.895	0.408	0.490	0.724	0.762
Total	**72.713**	**71.599**	**71.131**	**70.889**	**70.175**

6. Expenditure escalations

6. Expenditure escalations

6.1. Rules requirements

There are no specific *Rules* requirements relating to this *Revised Regulatory Proposal* and the methodology and values used to escalate expenditure over the forthcoming *Regulatory Control Period*, however Aurora's RIN as issued by the AER in April 2011, requires that for labour and materials escalators, Aurora must:

- identify the labour and material escalators used in the estimation of the forecast capex and opex proposals;
- provide:
  - the escalator used in percentage terms for each *Regulatory Year*;
  - a copy of the model(s) that have been used to derive and apply the escalators; and
  - a copy of Aurora's current Enterprise Bargaining Agreement;
- identify:
  - the portion of the forecast capex and opex proposals which is due to a change in escalator; and
  - whether the escalator is in real or nominal terms.
- explain:
  - the methodology underlying the calculation of each escalator;
  - the weightings given to each escalator for each capex and opex category and how those weighting have been developed;
  - whether the same expenditure escalators have been used for the forecast capex and opex proposals;
  - why it is appropriate for different expenditure escalators to apply;
  - whether the expenditure estimation process for the escalators involves the application of contingency factors; and
  - how the weightings given to each escalator are expected to change over the forthcoming *Regulatory Control Period*.

Aurora notes that:

- it did not include any contingency factors in its capital and operating expenditure forecasts for the forthcoming *Regulatory Control Period*; and
- references to escalation rates are in real terms (unless otherwise specified).

6.2. AER's Draft Distribution Determination

6.2.1. Labour expenditure escalators

The AER did not accept Aurora's proposal of CPI increases only and application of a 3 per cent efficiency factor. The AER has determined that the labour price index (LPI) is the most appropriate mechanism to escalate and forecast labour wage growth for Aurora.

Aurora has substituted its labour escalations for the first two years of the forthcoming *Regulatory Control Period* based on the recently approved Aurora EA. These escalators reflect the negotiated wage outcomes of Aurora's recently finalised EA and reflect prudent and efficient wage increases. Aurora has substituted its labour escalations for the remaining three years of the forthcoming *Regulatory Control Period* based on the outcomes of the report prepared by Deloitte Access Economics for the AER as part of the AER's review of Aurora's *Regulatory Proposal*.

Aurora considers that this report provides an up-to-date forecast of wages escalation and has adopted this report for the years of the forthcoming *Regulatory Control Period* not covered by the Aurora EA.

6.2.2. Material expenditure escalators

The AER has largely accepted Aurora's proposed materials expenditure escalator components. The AER did not accept the exchange rates utilised by Aurora in determining the materials expenditure escalators. The AER concluded that the exchange rate did not reasonably reflect a realistic expectation of costs given that the exchange rate forecast was calculated by Aurora prior to May 2010. SKM has provided an updated foreign exchange forecast method to reflect the method already employed to forecast commodity price movements.

For its *Revised Regulatory Proposal*, Aurora engaged SKM to revise the escalators based on more up-to-date market information. Aurora also notes that the AER will update the rates in its final determination to reflect the most current rates available at that time.

Other Matters

The AER has been inconsistent in its application of escalators and units rates between and within the service classifications. The AER has only applied its labour escalators to *Standard Control Services* operating expenditure; Aurora considers that these escalators should be applied to all work categories and all forms of control.

6.3. Overview of escalators

A summary of Aurora's framework for its escalators is set out below, and in Table 39 below.

Material cost escalation rates

These rates were established on advice provided by SKM based on analysis drawn from its in-house "Capital Expenditure Cost Escalation Model". The escalators assess long-term trends in the costs of distribution equipment such as transformers, circuit breakers, conductors and poles, used in the construction and maintenance of the distribution network, as well as other equipment used in undertaking work on the network, such as vehicles, plant and tools. The materials portion of Aurora's capital expenditure is escalated across the 49 individual asset categories using the SKM materials escalators. Materials used in the provision of operating expenditure activities are escalated using the SKM materials escalator for "Distribution Equipment".

Labour cost escalation rate

The labour cost escalation rate is applied to the portion of capital expenditure costs allocated to labour (as distinct from materials, contractors and other), and the labour portion of operating expenditure. Aurora has set this escalation rate equal to its enterprise agreement outcomes for the first two years of the forthcoming *Regulatory Control Period*. Aurora has applied labour escalations for the remaining three years of the forthcoming *Regulatory Control Period* based on the outcomes of the report prepared by Deloitte Access Economics for the AER.

Contractor cost escalation rates

These rates were established on advice provided by SKM, and are applied to that portion of costs incurred by employees and contractors in the delivery of the capital expenditure and operating expenditure programs, respectively.

Other cost escalation rates

These rates were determined by Aurora internally. They are applied to components of the capital and operating expenditure programs other than labour, materials and contractors costs. Aurora has set this escalation rate at CPI, which means that it has forecast no real increases in other costs for the term of the forthcoming *Regulatory Control Period*.

Table 39

Methodology used to determine 2012-17 escalation rates by category

	Capital expenditure	Operating expenditure
Material cost escalation	SKM's Capital Expenditure Cost Escalation Model.	SKM's Capital Expenditure Cost Escalation Model – "Distribution Equipment" category.
Labour cost escalation	Aurora EA for first two years of the *Regulatory Control Period*. Deloitte Access Economics report outcomes for remaining three years the *Regulatory Control Period*.	Aurora EA for first two years of the *Regulatory Control Period*. Deloitte Access Economics report outcomes for remaining three years the *Regulatory Control Period*.
Contractor cost escalation	SKM forecast.	SKM forecast.
Other Cost escalation	No escalation in real terms.	No escalation in real terms.

6.4. Materials expenditure escalators

Aurora's materials cost escalation factors apply to its revised capital and operating expenditure forecasts in addition to revised CPI inflators. This approach was chosen on the basis that movements in the CPI do not accurately reflect the movements in nominal costs related to Aurora's work program.

Aurora engaged SKM to prepare material escalation rates for 49 asset categories from 2009-10 to 2016-17. SKM's terms of engagement and expert report are appended as an attachment to this *Revised Regulatory Proposal*.

In the preparation of its revised unit rates for key pieces of plant and equipment, Aurora engaged the services of SKM, which has expertise in researching the increasing cost of capital infrastructure works in the electricity industry. To review the factors likely to affect the escalation of material costs between 2009-10 to 2016-17, SKM used a set of assumptions, which it deemed reasonable, with respect to the likely rate of annual material cost escalation that will be incurred during the forthcoming *Regulatory Control Period*.

Firstly, SKM developed assumptions and forecasts regarding a range of economic cost drivers such as the Consumer Price Index (CPI), the Australia-United States exchange rate, construction costs and commodity prices.

A cost escalation model was then developed to forecast the likely impact of expected movements of specific input cost drivers on future electricity infrastructure materials costs. SKM used forecast escalation rates for the underlying drivers of network infrastructure plant and equipment costs that included consideration of assumed movements in aluminium, copper, steel, oil and construction costs.

SKM then analysed each of the main items of plant, equipment and materials within its database to establish a suitable weighting by which each of these underlying cost drivers could be considered to influence the total price of each completed item.

As noted by SKM in its report on material costs escalation rates, movements in CPI do not necessarily reflect material costs associated with electricity network projects. The impact of adjusting for material cost escalators, in real terms, will result in both increases and decreases in cost drivers and therefore material cost components of various network assets throughout. This means that in real terms some asset forecasts will increase compared to actual expenditure from the current *Regulatory Control Period* and other asset forecasts will decrease.

6.4.1. Capital expenditure methodology and rates

The methodology employed by SKM in updating its capital expenditure cost escalation rates is identical to that described in the original December 2010 SKM report to Aurora with two exceptions; oil price forecasting and foreign exchange forecasting.

In forecasting oil prices, SKM has found that the world oil markets last forward price was a December 2015 position. To develop the updated cost escalation rates, SKM interpolated between December 2015 forward contract price and the Consensus Economics' October survey of the long-term nominal price of USD $102.65 in order to complete the set of oil rates to June 2017.

In the case of foreign exchange forecasting, the AER's *Draft Distribution Determination* challenged the proposed US dollar foreign exchange rates used in the December 2010 and April 2011 SKM reports. The rates used by SKM were sourced from the RBA for historical data and from the KPMG Econotech forecasts from the AER's May 2010 final decision for Ergon and Energex for future forecast data. The AER states in its *Draft Distribution Determination*:

> *"Given the difficulty in forecasting exchange rates, the AER considers the use of forward exchange rates is reasonable"*[1]

Based on the AER's *Draft Distribution Determination*, SKM has updated the foreign exchange forecast method to reflect the method already employed to forecast commodity price movements. Linear interpolation between available forward exchange rates and the long term average exchange rates are used to develop a forecast US dollar and Australian dollar exchange rate for the forthcoming *Regulatory Control Period*. Forward prices are taken from the latest Chicago Mercantile Exchange forward USD/AUD futures contract information available on 15 December 2011.

SKM completed its report having regard to recent AER Determinations and Aurora's operating environment.

SKM's methodology is set out below, being that it:

(1) carried out procurement studies with seven TNSPs and nine DNSPs operating in the Australian electricity industry. This study involved the survey of these participants to provide confidential contract information for the purchase of common items of plant, equipment and materials for the period spanning 2002-09;

(2) identified, on the basis of economic analysis, the following key cost drivers impacting the rises in network capital expenditure:
   - (i) oil;
   - (ii) construction costs;
   - (iii) the Trade Weighted Index, which was set to CPI;
   - (iv) metals such as copper, aluminium, and steel;
   - (v) foreign exchange rates, particularly the USD/AUD relationship;
   - (vi) wood poles, which was set to CPI; and
   - (vii) other cost components including suppliers' transport costs and profit margins sought in the supply chain, to which CPI is assigned as a proxy for cost escalation;

(3) forecast average annual real changes in each of the key cost drivers forecast over 2010-17, which are set out in Table 40.

1 Draft Distribution Determination Aurora Energy November 2011, Sect 4.4.7, p. 103.

Table 40

Average annual real change materials key cost drivers

Cost driver	Jun 2012	Jun 2013	Jun 2014	Jun 2015	Jun 2016	Jun 2017
Aluminium	-12.39%	2.12%	4.48%	3.91%	3.71%	3.17%
Copper	-12.59%	-1.76%	-0.11%	-1.57%	-1.99%	-2.50%
Steel average	2.64%	4.33%	1.04%	0.88%	1.33%	0.88%
Oil	1.94%	1.88%	-2.76%	-1.62%	0.72%	4.46%
Construction costs	-0.17%	-1.18%	-1.54%	-0.61%	-0.19%	0.35%
CPI	2.00%	3.25%	2.50%	2.50%	2.50%	2.50%

(4) assigned individual cost component weightings for each project component. This involved the examination of each of the main items of plant, equipment and materials within its database to establish a suitable weighting, by which each underlying cost driver was considered to influence the total price of each completed item; and

(5) modelled the annual movement in cost of each network asset by applying weightings to each component, and applying forecast movements in the key cost drivers.

SKM's cost escalation model forecasts the likely impact of expected movements of specific input cost drivers on future electricity infrastructure materials costs. This is set out for each individual asset category in Table 41.

Table 41

Materials escalation rates for capital expenditure

Asset category	Jun 2012	Jun 2013	Jun 2014	Jun 2015	Jun 2016	Jun 2017
Overhead Subtransmission Lines	0.986	1.013	1.005	1.007	1.010	1.010
Underground Subtransmission Cables	0.950	1.005	1.008	1.005	1.005	1.006
Overhead Distribution Lines	0.990	1.018	1.007	1.007	1.011	1.013
Underground Distribution Cables	0.977	1.007	1.004	1.006	1.009	1.014
Distribution Equipment	0.993	1.009	1.001	1.001	1.004	1.006
Substation Bays	0.996	1.002	0.996	0.999	1.002	1.005
Substation Establishment	0.998	0.988	0.985	0.994	0.998	1.003
Distribution Substation Switchgear	0.993	1.009	1.001	1.001	1.004	1.006
Transformers (Zone + Distribution)	0.984	1.013	1.004	1.003	1.006	1.007
Distribution Substations	0.985	1.010	1.002	1.002	1.005	1.007
Low Voltage Services	0.941	1.015	1.023	1.020	1.020	1.017
Metering	0.999	1.003	0.998	0.998	1.001	1.004
Communications - Pilot Wires	1.000	1.000	1.000	1.000	1.000	1.000
Generation Assets	1.002	1.012	1.000	1.000	1.003	1.005
Street Lighting	1.003	1.004	1.000	1.000	1.001	1.002
Other Equipment	1.000	1.000	1.000	1.000	1.000	1.000
Control Centre - SCADA	1.000	1.000	1.000	1.000	1.000	1.000
Communications	1.000	1.000	1.000	1.000	1.000	1.000
IT Systems	1.000	1.000	1.000	1.000	1.000	1.000
Office Equipment & Furniture	1.000	1.000	1.000	1.000	1.000	1.000
Motor Vehicles	1.000	1.000	1.000	1.000	1.000	1.000
Plant & Equipment	1.000	1.000	1.000	1.000	1.000	1.000
Buildings	0.998	0.988	0.985	0.994	0.998	1.003
Wood Poles	1.000	1.000	1.000	1.000	1.000	1.000
Steel Poles	1.015	1.022	1.001	1.002	1.007	1.011
Concrete Poles	0.998	0.988	0.985	0.994	0.998	1.003
Switchgear	0.993	1.009	1.001	1.001	1.004	1.006

Table 41

Materials sescalation rates for capital expenditure (continued)

Asset category	Jun 2012	Jun 2013	Jun 2014	Jun 2015	Jun 2016	Jun 2017
Transformers	0.984	1.013	1.004	1.003	1.006	1.007
Structure	0.998	0.988	0.985	0.994	0.998	1.003
Foundation	0.998	0.988	0.985	0.994	0.998	1.003
Civil	0.998	0.988	0.985	0.994	0.998	1.003
P&C	0.999	1.003	0.998	0.998	1.001	1.004
Erection + Commissioning - Subs	1.028	1.023	1.007	1.005	0.999	1.005
Design, Procure, OH	1.020	1.018	1.008	1.010	1.005	1.009
Conductor	0.941	1.015	1.023	1.020	1.020	1.017
Towers	1.012	1.016	0.997	1.001	1.006	1.006
Insulators	1.005	1.005	0.993	0.996	1.002	1.011
Fittings	0.996	1.013	0.999	1.001	1.007	1.016
Foundations	0.998	0.988	0.985	0.994	0.998	1.003
Erection + Commissioning - OH	1.028	1.023	1.007	1.005	0.999	1.005
Cable Al	0.960	1.011	1.013	1.012	1.014	1.016
Cable Cu	0.933	0.993	0.999	0.991	0.990	0.989
Erection + Commissioning - UG	1.013	1.006	0.996	0.999	0.999	1.004
PVC Conduit	1.006	1.006	0.992	0.995	1.002	1.013
Pit	0.998	0.988	0.985	0.994	0.998	1.003
Cable Protection	0.998	0.988	0.985	0.994	0.998	1.003
Re-instatement	0.998	0.988	0.985	0.994	0.998	1.003
Misc Material	1.011	1.016	0.996	0.998	1.005	1.013
Standby Generators	1.002	1.012	1.000	1.000	1.003	1.005

As movements in CPI do not necessarily reflect movements in material costs associated with electricity network projects, adjusting for material cost escalators, in real terms, will result in both increases and decreases in cost drivers and therefore material cost components of various network assets. This means that in real terms some asset forecasts will increase compared to actual capital expenditure from the current *Regulatory Control Period*, and other assets forecasts will decrease.

SKM applied a range of assumptions in relation to underlying economic key cost drivers and forecasts to define and forecast future movements in the key cost drivers. These are detailed in full in the SKM report, and summarised below as follows:

- *CPI* – SKM has continued to apply the methodology used by the AER in the Final Decision for NSW distribution businesses of including both the midpoint of the RBA target range, and short term forecasts and referred to the most recent RBA Monetary Policy Statement of November 2011.
- *USD to AUD Exchange rate* – SKM has updated the method used for the foreign exchange forecast as discussed above. Forward prices are taken from the latest Chicago Mercantile Exchange forward USD/AUD futures contract information available on 15 December 2011.
- *The Trade Weighted Index* – CPI was assumed on the basis that the AER has not been satisfied with the evidence of real cost escalation presented in previous *Regulatory Proposals*. No new evidence has become available since that time.
- *Wood Poles* – was set to CPI on the basis that the AER has not been satisfied with the evidence of real cost escalation presented in previous *Regulatory Proposals*. No new evidence has become available since that time.
- *Contractor's Margin* – was forecast using movements in construction costs as a proxy for information on contractor's margins, as SKM considered that a contractor would pass on the cost of doing business to the end-user.
- *Producer's margin* – was set to CPI on the basis that there are no credible forecasts for future producer's margins for the periods comprising Aurora's forthcoming *Regulatory Control Period*.
- *Construction costs* – was forecast using estimates of related construction costs and annual growth rates developed by the Construction Forecasting Council (CFC). SKM has adopted these estimated movements (presented as Australian National "Engineering" Construction Cost Forecasts) as the likely movements in the construction cost component of relevance to Aurora for cost escalation modelling.
- *Commodity prices* – incorporates the use of commodity futures contract prices into cost escalation rate computations. This employs various combinations of futures contract prices and a range of views from credible forecasting professionals to develop likely year to December price positions of specific key cost components.

6.4.2. Operating expenditure methodology and values

Materials used in the provision of operating expenditure activities are escalated using the SKM materials escalator for "Distribution Equipment". The revised "Distribution Equipment" escalation rates to be applied to operating expenditure materials cost forecasts over the forthcoming *Regulatory Control Period* are set out in Table 42.

Table 42

Materials escalation rates for operating expenditure

Asset category	Jun 2012	Jun 2013	Jun 2014	Jun 2015	Jun 2016	Jun 2017
Operating expenditure escalation rates	0.993	1.009	1.001	1.001	1.004	1.006

As the escalation factors for this category were determined using the SKM Capital Expenditure Cost Escalation Model, the methodology used is identical to that set out above for the individual capital expenditure categories. That is, forecast cost escalation for the "Distribution Equipment" category used the following high level process:

- carried out procurement studies with Australian TNSPs and DNSPs;
- identified key cost drivers impacting on network expenditure;
- forecast average annual real change in each of the key cost drivers;
- established a suitable weighting by which the underlying cost drivers were considered to influence the total price of "Distribution Equipment";
- assigned individual cost component weightings for each project component of "Distribution Equipment"; and
- modelled the annual movement in cost of each network asset by applying weightings to each component, and applying forecast movements in the key cost drivers.

The assumptions applied to determining escalators for operating expenditure are identical to those used to develop SKM's forecast capital expenditure escalators, and are discussed above in section 6.4.1.

6.5. Labour expenditure escalators

In its *Regulatory Proposal*, Aurora anticipated that it would achieve significant efficiencies in labour costs for both its operating and capital expenditure programs via the application of a 3 per cent efficiency factor. In anticipation of this efficiency Aurora applied an escalation rate equal to zero for the delivery of its entire work program which implied that labour costs would increase in accordance with CPI only. In its *Draft Distribution Determination* the AER did not accept Aurora's proposal of CPI increases only and stated:

> *"it considers LPI forecasts, adjusted for productivity effects, most reasonably reflects labour costs during the forthcoming regulatory control period".*[2]

Aurora has substituted its labour escalations for the first two years of the forthcoming *Regulatory Control Period* based on the recently approved Aurora EA. These escalators reflect the negotiated wage outcomes of Aurora's recently finalised EA and reflect prudent and efficient wage increases. Aurora has substituted its labour escalations for the remaining three years of the forthcoming *Regulatory Control Period* based on the outcomes of the report prepared by Deloitte Access Economics for the AER as part of the AER's review of Aurora's *Regulatory Proposal*.

In the preparation of its review of unit rates for labour, the AER engaged the services of Deloitte Access Economics to review the factors likely to affect wage escalation over the year to June periods between 2009-10 to 2018-19.

Deloitte Access Economics have undertaken a detailed analysis of the factors impacting wages growth within Queensland and Tasmania and provided the AER with a comprehensive report.

Aurora considers that this report provides an up-to-date forecast of wages escalation and has adopted this report for the years of the forthcoming *Regulatory Control Period* not covered by the Aurora EA.

The revised labour expenditure escalation rates to be applied to expenditure forecasts over the forthcoming *Regulatory Control Period* are set out in Table 43.

Table 43

Labour escalation rates for capital and operating expenditure

Cost driver	Jun 2012	Jun 2013	Jun 2014	Jun 2015	Jun 2016	Jun 2017
Labour escalation rates	1.003	1.014	1.026	1.014	0.993	0.978

2 Draft Distribution Determination Aurora Energy November 2011, Sect 4.4.5, p. 99.

6.6. Contractor expenditure escalators

Aurora engaged SKM to develop expenditure escalators for its contractor costs, for both capital and operating expenditure over the forthcoming *Regulatory Control Period*.

In 2007 the Essential Services Commission (ESC) of Victoria requested the Allen Consulting Group (ACG) to review two reports commissioned by Envestra that were presented in support of the costs incurred in opex activities within a gas distribution network under an outsourced services contract.

ACG concluded that the use of earnings before interest and taxation as a proportion of revenue was the most appropriate measure of a contractor's margin. However, in comparing these measures of a contractor's margin, ACG concluded that other considerations, such as whether or not arms-length agreements were in place, whether the companies were engaged in undertaking the same principal activity, the overall size of the contractor (with smaller firms being excluded), and its relative level of capital intensity, all affected the relative degree of comparability.

These difficulties in gathering comparable information on contractor's margins, also only pertain to historic costs, as they would be taken from published financial reports.

SKM found there was a lack of credible information regarding forecasts of the likely margins that contractors would be able to claim in the years corresponding to Aurora's forthcoming *Regulatory Control Period*.

In the absence of any such forecast, SKM consider a reasonable proxy of this underlying cost pressure to be changes in construction costs, as it was considered realistic to propose that a contractor would pass on the cost of doing business to the end-user. The cost of doing business to such a contractor would in turn be dependent on the cost of materials and labour.

Table 44 below sets out the revised escalators that will be applied to estimate contractor costs, for both capital and operating expenditure, for the forthcoming *Regulatory Control Period*.

Table 44

Contractor cost escalation rates for capital and operating expenditure

Cost driver	Jun 2012	Jun 2013	Jun 2014	Jun 2015	Jun 2016	Jun 2017
Contractor costs escalation rates	1.004	0.992	0.977	0.971	0.969	0.973

6.7. Other expenditure escalators

In forecasting escalation rates for other costs, Aurora has assumed no real increases in other costs for the forthcoming *Regulatory Control Period*. This is in anticipation of achieving efficiencies across both its operating and capital expenditure programs.

Table 45

Forecast other escalation rates for capital and operating expenditure

Cost driver	Jun 2012	Jun 2013	Jun 2014	Jun 2015	Jun 2016	Jun 2017
Other costs escalation rates	1.000	1.000	1.000	1.000	1.000	1.000

7. Unit rates

7. Unit rates

Aurora utilises unit rates as a key input for determining its capital and operating expenditure programs where similar projects or tasks are undertaken. Unit rates are applied to key items of plant and equipment for both labour and material unit costs. The unit rates currently incurred by Aurora, and reflected in the current average costs of works, have been utilised as the basis for future unit rates.

Aurora derives its input costs on the basis of the current average costs of undertaking similar projects and capital and operating work programs over the current *Regulatory Control Period*. Where a project is unique in nature, Aurora undertakes bottom-up project estimation based on the design components.

These unit rates represent an aggregation of materials and other costs required to complete the works.

In the preparation of its revised unit rates for labour, plant and equipment, and materials, Aurora engaged the services of SKM to review the factors likely to affect the escalation of input costs between 2009-10 to 2016-17. An overview of expenditure escalators and the adopted methodology are covered in chapter 6 of this *Revised Regulatory Proposal*.

7.1. AER's Draft Distribution Determination

The AER has made a number of adjustments to the unit rates proposed by Aurora in its *Regulatory Proposal*.

In its *Draft Distribution Determination* the AER stated that forecast unit rates for new connections were too high. Aurora has reviewed the AER's determination and based on further analysis accepts the AER's decision.

In its *Draft Distribution Determination* the AER did not accept Aurora's proposal of CPI increases for labour. Additionally, the AER also rejected the application by Aurora of a 3 per cent efficiency factor across labour rates. The AER has determined that the labour price index is the most appropriate mechanism to escalate and forecast labour wage growth for Aurora. Aurora accepts the AER's decision on the use of the 3 per cent efficiency and has removed this efficiency factor from its labour component of all unit rates.

The AER has accepted Aurora's proposed materials, and plant and equipment costs within the unit rates.

7.2. Utilisation of unit rates

Aurora applies unit rates to specific tasks within work programs that are of a repetitive nature and are contained within the operating and capital expenditure programs of work; for example pole replacements, transformer installations, replacement of copper conductor, etc. Where there is more than one task within a work program, the unit rate is applied to the forecast volume of tasks to arrive at an overall program cost.

7.3. Determining the unit rates

Aurora's unit rates have been determined using a bottom-up approach by aggregating the following:

- estimated labour time required to undertake the task multiplied by the hourly rate of the skill set utilised;
- materials; and
- plant and equipment.

7.4. Network Services overheads

Network Services overheads are determined for both labour and other costs. Labour overheads include the labour costs of staff not directly billable to tasks. Skills that fall into this category include management, administration staff, apprentices and executive. Other overhead costs include tools, equipment, office supplies and travel costs.

The apportionment of total overhead costs is based on the total number of billable hours which is in turn applied to unit rates based on the estimated time. Overhead costs are further covered in chapter 16 of Aurora's *Regulatory Proposal*.

7.5. Prudency and efficiency of unit rates

Under clauses 6.5.6(c)(1)-(2) and 6.5.7(c)(1)-(2) of the *Rules*, the AER must accept Aurora's forecasts of capital and operating expenditure if it is satisfied that the total expenditure for the 2012-2017 *Regulatory Control Period* reflects:

- the efficient costs of achieving the expenditure objectives; and
- the costs that a prudent operator in Aurora's circumstances would require to achieve its capital and operating expenditure objectives.

The Aurora distribution business is structured to align with its long-term objective of ensuring that there is no increase to customer prices as a result of its efforts, which is consistent with the prudency and efficiency requirements of the *Rules*.

Aurora confirms that the unit rates contained within the revised capital and operating expenditure programs therefore represent those that a prudent and efficient operator would apply.

8. Regulatory asset base

8. Regulatory asset base

8.1. Rules requirements

Clause 6.5.1 of the *Rules* describes the nature of the regulatory asset base (RAB). The *Rules* require the AER to develop and publish a model for the roll forward of the RAB and provide the requirements for that roll forward model (RFM).

The *Rules* further require that Aurora establish the RAB at the commencement of the forthcoming *Regulatory Control Period* (1 July 2012) and then roll forward that RAB consistent with the AER's RFM.

Schedule 6.1.3(7) of the *Rules* requires Aurora's Building Block Proposal to contain a calculation of the RAB for each year, using the RFM, together with:

- details of all amounts, values and other inputs;
- a demonstration that the amounts, values and inputs comply with the relevant requirements of Part C of Chapter 6 of the *Rules*; and
- an explanation of the calculation of the RAB for each year and of the amounts, values and other inputs involved in the calculation.

Schedule 6.1.3(10) of the *Rules* requires Aurora's Building Block Proposal to contain a completed post tax revenue model (PTRM) and RFM.

Other provisions relating to the RAB are set out in schedule 6.2 of the *Rules*. In particular:

- subclause 1(c)(1) establishes a value for the RAB of Aurora as at 1 January 2008, by reference to the RAB value used by OTTER in the current *Regulatory Control Period*;
- subclause 1(c)(2) specifies how this initial value is to be adjusted for the difference in estimated and actual capital expenditure in the previous *Regulatory Control Period*;
- subclause 1(e) specifies the method of adjustment of value of the RAB between *Regulatory Control Periods*; and
- subclause 3 specifies the method of adjustment of value of the RAB for each year within a *Regulatory Control Period*.

8.2. AER's Draft Distribution Determination

The AER has determined that Aurora's opening RAB as at 1 July 2012 to be $1,439.0 million ($nominal) compared to Aurora's proposed $1,484.9 million ($nominal). The AER did not accept Aurora's proposed RAB as at 1 July 2012 and made input changes to the RFM relating to the indexation approach to account for inflation and the removal of movements in provisions.

Aurora does not accept part of the AER's *Draft Distribution Determination* and outlines its reasons in the following sections.

8.2.1. Indexation approach

The AER did not accept Aurora's treatment of indexation of its RAB for the roll forward during the current *Regulatory Control Period*. The AER stated[1]:

> *"Accordingly, the AER has made two changes to the way actual inflation adjustments were applied by Aurora in the RFM. These changes are:*
>
> 1. *The AER has applied actual inflation over the current regulatory control period based on the change in December to December CPI, consistent with the current control mechanism as required under clause 6.5.1(e)(3) of the NER. Aurora proposed June to June CPI.*
> 2. *The AER has changed the forecast inflation rate input in the RFM to 3 per cent for the current regulatory control period, consistent with the forecast used by OTTER in its final determination. Aurora proposed 4.5 per cent..."*

1 Draft Distribution Determination Aurora Energy November 2011, Sect 7.4.2, p. 197.

Aurora does not accept the AER's position at item 1 above and maintains that the correct treatment of actual inflation over the current *Regulatory Control Period* is the proposed June to June. This position is supported by OTTER, with the following email to Aurora and the AER dated 2 May 2011, OTTER stated:[2]

> *"For your information, at the TER meeting on Friday the TER considered an application by Aurora to continue to index the assets in the ringfenced accounts by the June on June CPI. The TER have agreed on the basis that this is the methodology used to index the regulatory asset base in the model underpinning the investigation and that to do otherwise would lead to an inconsistency between the 2006-07 and the 2007-08 Regulatory Accounts. These were matters not considered at the time the Guideline was revised post the 2007 Investigation and Determination."*

Aurora does accept the AER's treatment of the inflation rate input in the RFM and will adjust its RFM accordingly.

8.3. Treatment of provisions

The AER has reduced Aurora's proposed RFM by $8.7 million ($nominal) for movement in capitalised expense provisions for each year of the current *Regulatory Control Period*. Aurora accepts the AER's methodology but does not accept the way the AER has treated the reduction in the first year of the current *Regulatory Control Period*.

Aurora's current *Regulatory Control Period* was for a period of 4½ years commencing on 1 January 2008. The AER has treated the first year of the current *Regulatory Control Period* as a full year and adjusted a full years worth of provisions $0.8 million. Aurora argues that this reduction should be reduced to $0.4 million to reflect the half year for the first period of the current *Regulatory Control Period*.

2 Email from Heather Cerutty, Office of the Tasmanian Economic Regulator, 2 May 2011.

Aurora has also undertaken complete review of information provided to the AER as part of its *RIN Response* relating to capital expenditure (and consequentially the RAB) as a consequence of the AER's base year forecasting approach. This review has highlighted an allocative error in Aurora's provision accounts for the current *Regulatory Control Period* that is fundamental to the reallocation of Aurora's accounts to match the RIN required service classifications and Aurora's CAM. Correction of this error has resulted in a movement of provision expenses between operating and capital expenditure and between the service classifications.

Aurora's RAB in this *Revised Regulatory Proposal* has been updated to reflect the change in capitalised provisions and treatment of the first year of the current *Regulatory Control Period* as discussed above.

8.4. Summary

Aurora's revised nominal opening RAB (as at 1 July 2012) value of $1,474.59 million is based on:

- the RAB value as prescribed by the *Rules*;
- adjustments as provided by the *Rules*;
- depreciation during the current *Regulatory Control Period*;
- actual capital expenditure during the current *Regulatory Control Period* (net of capital contributions);
- actual disposals (based on written down book value) during the current *Regulatory Control Period*;
- actual inflation during the current *Regulatory Control Period*; and
- estimates of capital expenditure and disposals for the 2011-12 financial year.

Table 46 summarises Aurora's revised forecast of the RAB over the forthcoming *Regulatory Control Period*.

Table 46

RAB – 2012-17

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Opening RAB – 1 July	1,474.59	1,560.23	1,640.38	1,718.51	1,807.50
Forecast capital expenditure	148.67	145.97	142.75	147.03	145.95
Forecast straight-line depreciation	86.18	89.49	89.38	85.52	87.38
Forecast disposals	0.75	1.08	1.69	1.55	1.60
Forecast customer contributions	16.15	17.35	17.66	17.35	17.43
Closing RAB – 30 June	1,520.19	1,598.28	1,674.40	1,761.11	1,847.05

8.5. Establishment of the RAB value at 1 January 2008

8.5.1. Specified RAB value as at 1 January 2008

Schedule 6.2.1(c)(1) of the *Rules* specifies the opening RAB for Aurora as $981.108 million, in July 2006 dollars.

8.5.2. Adjustment to the 1 January 2008 RAB value for capital expenditure

The specified value of $981.108 million is required to be adjusted, as specified in Schedule 6.2.1(c)(2) of the *Rules*, for the difference between:

- any estimated capital expenditure that is included in those values for any part of a previous *Regulatory Control Period*; and
- the actual capital expenditure for that part of the previous *Regulatory Control Period*.

In setting the asset value as part of the 2007 Pricing Determination OTTER was required to estimate the capital expenditure that would occur until 1 January 2008. As the RAB value was to be set at a point mid way through a financial year (2007-08) and the last available ring-fenced accounts provided by Aurora covered the financial year ended 30 June 2006; OTTER was required to estimate Aurora's capital expenditure for the period 1 July 2006 – 31 December 2007 or a period of eighteen months. The adjustment to Aurora's 1 January 2008 RAB will therefore require a similar treatment.

Establishing 1 July 2007 RAB value

The establishment of Aurora's opening RAB at 1 January 2008 provides a number of uncertainties regarding an appropriate methodology to allow an assessment of the differences between actual and forecast expenditure. Aurora has therefore removed from the 1 January 2008 RAB valuation OTTER forecast allowances for capital expenditure, asset depreciation, capital contributions and asset disposals for the period 1 July 2007 to 31 December 2007. This has enabled Aurora to establish a RAB value commencing at the conclusion of the 2006-07 financial year, or 1 July 2007.

Establishment of a RAB valuation at this point in time allows Aurora to compare a full financial year OTTER forecast with actual outcomes and utilise those differences in the AER's RFM.

These differences then provide an adjusted RAB value for the financial year commencing 1 July 2007.

Table 47 summarises Aurora's revised adjustments to the 1 January 2008 opening RAB.

Table 47

RAB – 1 January 2008

July 2006 dollars	($m)
Opening RAB – 1 January 2008	981.108
Capital expenditure forecasts 1/7/2007 – 31/12/2007 (net of customer contributions)	48.28
Asset depreciation forecasts 1/7/2007 – 31/12/2007	30.36
Asset disposal forecasts 1/7/2007 – 31/12/2007	1.20
Adjusted 1 July 2007 RAB	964.40

Adjustments for 2006-07 financial year

As the establishment of Aurora's opening RAB at 1 January 2008 also included an estimation of such amounts for the 2006-07 financial year, a similar treatment to that undertaken above to arrive at the adjusted RAB value at 1 July 2007 is also required.

Aurora has removed the OTTER forecast amounts for capital expenditure, asset depreciation, capital contributions and asset disposals for the period 1 July 2006 to 30 June 2007.

These differences then provide an adjusted RAB value for the financial year commencing 1 July 2006.

This opening RAB value has been input into the AER's RFM.

Table 48 summarises Aurora's revised adjustments to the 1 July 2007 opening RAB.

Table 48

RAB – 1 July 2007

July 2006 dollars	($m)
Adjusted RAB – 1 July 2007	964.40
Forecast capital expenditure 2006-07 (net of customer contributions)	112.60
Forecast straight-line depreciation 2006-07	55.54
Forecast disposals 2006-07	0.86
Opening RAB 1 July 2006	908.20

8.6. Roll forward of the RAB to 30 June 2012

8.6.1. Methodology used to roll forward the RAB value

Aurora has applied the methodology set out in schedule 6.2 of the *Rules* and has used the AER's RFM.

As required by clause 6.5.5(b)(3) of the *Rules*, depreciation has been applied using the same prime cost methodology and same asset lives as applied in OTTER's 2007 Determination.

8.6.2. Assumptions applied to the RAB roll forward

Aurora has made a number of assumptions in the roll forward of the RAB to 30 June 2012.

Adjustment for inflation

The RAB has been indexed each year in a manner consistent with the annual price adjustments in the current *Regulatory Control Period*.

Indexation of the RAB for the years ended 30 June 2008 to 30 June 2012 has been determined by applying the actual All Groups CPI, Weighted Average of Eight State Capital Cities (published by the Australian Bureau of Statistics) for the years to 30 June 2007 to 2010 respectively.

Remaining asset lives

The RAB is currently held within Aurora's ring-fenced accounts with capitalised additions added for each year since the establishment of the asset base by OTTER in 1998. These yearly additions are held as individual subcategories of the asset class and have been aggregated to a single category with a weighted average remaining life for inclusion in the RFM and PTRM.

Disposals of assets

Asset disposals largely comprise assets such as vehicles, land and buildings. Asset disposals are recognised in the year of disposal, with the written down value deducted from the RAB.

Assumptions for the 2011-12 Regulatory Year

At the time of preparing this *Regulatory Proposal*, actual data for the 2011-12 *Regulatory Year* for capital expenditure, depreciation and asset disposals is not available.

The actual data for 2011-12 will not be available for the AER's final Determination. Therefore the roll forward has applied Aurora's estimate of the 2011-12 capital expenditure. The difference between this amount and the actual amount will be reflected in the RAB roll forward for 2017-22

Table 49 summarises Aurora's revised roll forward of the RAB over the 2006-12 period.

Table 49

RAB – 2006-12

Nominal dollars	2006-07 ($m)	2007-08 ($m)	2008-09 ($m)	2009-10 ($m)	2010-11 ($m)	2011-12 ($m)
Opening RAB – 1 July	908.20	984.14	1,072.60	1,157.87	1,270.79	1,385.95
Capital expenditure[1]	11.73	116.57	139.93	155.21	148.44	152.99
Depreciation	54.87	61.28	60.20	67.47	49.19	72.29
Customer contributions	-	10.56	9.55	8.96	9.24	10.46
Disposals	-	0.55	1.01	1.17	0.60	4.77
Closing RAB – 30 June	965.06	1,028.31	1,141.78	1,235.48	1,340.20	1,451.41
Inflation rate	2.10%	4.50%	1.50%	3.05%	3.60%	2.00%

1 Capital expenditure is net of capital contributions and disposals.

8.6.3. Adjustments applied by RFM

There are a number of adjustments that are applied by the AER's RFM to the closing RAB value at 30 June 2012 prior to the commencement of the forthcoming *Regulatory Control Period*. These adjustments are required for the differences between actual and forecast capital expenditure, a return on the difference between actual and forecast capital expenditure and to establish the opening value of the RAB for the forthcoming *Regulatory Control Period*.

Table 50 summarises the revised RFM adjustments to the 30 June 2012 closing RAB.

Table 50

RFM RAB – 30 June 2012

	($m)
Closing RAB – 30 June 2012	1,451.41
Difference between actual and forecast capital expenditure (net)	(21.85)
Return on difference	(11.32)
RFM adjustment to closing RAB	27.72
RFM closing RAB 30 June 2012	1,445.96

8.7. Roll forward of the RAB from 1 July 2012 to 30 June 2017

8.7.1. Methodology used to roll forward the RAB value

Aurora has modelled the roll forward of the RAB for the forthcoming *Regulatory Control Period* based on the closing RAB value of $1,445.96 million as at 30 June 2012, as detailed in section 8.6 above.

Aurora has applied the methodology set out in schedule 6.2.1 of the *Rules* and has used the AER's PTRM.

8.7.2. Assumptions applied to the RAB roll forward

Aurora has made a number of assumptions in the roll forward of the RAB to 30 June 2017.

Work-in-progress

The opening balance of work-in-progress at 1 July 2012 is based on the work-in-progress balance at 30 June 2011. The *Revised Regulatory Proposal* reflects the actual value for work-in-progress at 30 June 2011.

Forecast expenditure

Forecast capital expenditure (net of customer contributions) has been applied, as detailed in chapter 4 of this *Revised Regulatory Proposal*.

Depreciation

Depreciation has been calculated on a straight-line basis, using asset lives as provided in chapter 10 of this *Revised Regulatory Proposal*.

Disposals

Forecast asset disposals have been incorporated.

Inflation rate

An inflation rate has been assumed, which is consistent with the rate used for the WACC.

8.7.3. Amendments to the RAB value for other control services and provisions

Clause 6.5.1(a) of the *Rules* requires that the RAB is the value of those assets that are used by Aurora for the provision of *Standard Control Services*, but only to the extent that they are used to provide such services.

In setting the asset value as part of the 2007 Pricing Determination OTTER has allocated distribution assets, excepting metering and road lighting assets, as prescribed distribution services, meaning that certain prescribed assets may be used to provide other services only in forthcoming *Regulatory Control Periods*.

Consistent with the requirements of clause 6.5.1(a) the adjusted RAB value will also require an adjustment for those OTTER prescribed service classification assets that will be treated as providing other services during the forthcoming *Regulatory Control Period*.

In assessing the difference in service classifications, the methodology applied is to identify those assets within the RAB that will provide other services and remove their actual value from the RAB.

Where there are shared service assets, such as IT, an adjustment is also made to the RAB. This adjustment is undertaken by deducting an amount determined as the percentage of total spend for the other control services.

Consistent with the outcomes of the AER's *Draft Distribution Determination* Aurora has also made adjustments for the differences in the provision accounts that have occurred over the current *Regulatory Control Period*.

The provisions adjustment undertaken by Aurora involved the calculation of provisions attributable to capital expenditure for OTTER regulated services each year for the period 1 January 2008 to 30 June 2012. The RAB was then adjusted for the movement in the provisions, whereby each asset class was adjusted using a weighted approach resulting in a single adjustment for the *Regulatory Control Period*. Adjustments to reflect service classification where then undertaken as described above.

These differences have been input into the AER's RFM.

Table 51 summarises Aurora's revised adjustments to the RAB for other services.

Table 51

RAB – 1 July 2012

	($m)
RFM closing RAB 30 June 2012	1,445.96
Provisions adjustment	2.17
Other control services adjustments	(11.39)
Amended closing RAB	1,436.74
Inflation on amended closing RAB	37.87
Opening RAB 1 July 2012	1,474.59

8.8. 2012-17 RAB

Table 52 summarises Aurora's revised forecast of the RAB over the forthcoming *Regulatory Control Period*.

Table 52

RAB – 2012-17

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Opening RAB – 1 July	1,474.59	1,560.23	1,640.38	1,718.51	1,807.50
Forecast capital expenditure	148.67	145.97	142.75	147.03	145.95
Forecast regulatory depreciation	86.18	89.49	89.38	85.52	87.38
Forecast disposals	0.75	1.08	1.69	1.55	1.60
Forecast customer contributions	16.15	17.35	17.66	17.35	17.43
Closing balance	1,520.19	1,598.28	1,674.40	1,761.11	1,847.05
Forecast inflation rate	2.63%	2.63%	2.63%	2.63%	2.63%

9. Return on capital

9. Return on capital

9.1. NEL requirements

The National Electricity Objective set out within the NEL at section 7 is:

> *to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:*
>
> *(a) price, quality, safety, reliability and security of supply of electricity; and*
>
> *(b) the reliability, safety and security of the national electricity system.*

The revenue and pricing principles at section 7A(5) further state that:

> *A price or charge for the provision of a direct control network service should allow for a return commensurate with the regulatory and commercial risks involved in providing the direct control network service to which that price or charge relates.*

Section 16 2(a)(i) of the NEL requires that the AER must, when exercising a discretion in making those parts of a Distribution Determination relating to direct control network services take into account the revenue and pricing principles.

9.2. Rules requirements

Clause 6.4.3 of the *Rules* prescribes that the revenue requirement for Aurora must be determined using a Building Block approach. The *Rules* require that one of the components of the Building Block should be a return on capital and further that the return on capital is calculated in accordance with clause 6.5.2.

Clause 6.5.2 requires that the return on capital must be calculated by applying a rate of return for Aurora to the value of the regulatory asset base. The rate of return for Aurora is the cost of capital as measured by the return required by investors in a commercial enterprise with a similar nature and degree of non-diversifiable risk as that faced by Aurora and must be calculated as a nominal post-tax weighted average cost of capital (WACC) in accordance with the following formula:

$$\text{WACC} = k_e \frac{E}{V} + k_d \frac{D}{V}$$

where:

k_e *is the return on equity and is calculated as:*

$$r_f + \beta_e \text{ x } MRP$$

where:

r_f *is the nominal risk free rate;*

β_e *is the equity beta; and*

MRP *is the market risk premium.*

k_d *is the return on debt and is calculated as:*

$$r_f + DRP$$

where:

DRP *is the debt risk premium.*

E/V *is the value of equity as a proportion of the value of equity and debt, which is 1 - D/V; and*

D/V *is the value of debt as a proportion of the value of equity and debt.*

Clause 6.5.2(c) states that the nominal risk free rate is (unless some different provision is made by a relevant statement of regulatory intent) the rate determined by the AER on a moving average basis from the annualised yield on Commonwealth Government bonds with a maturity of 10 years.

Clause 6.5.2(e) states that the debt risk premium is the premium determined by the AER as the margin between the annualised nominal risk free rate and the observed annualised Australian benchmark corporate bond rate for corporate bonds which have a maturity equal to that used to derive the nominal risk free rate and a credit rating from a recognised credit rating agency.

Clause 6.5.4(a) and (d) requires that the AER must carry out reviews of the following matters:

(1) the nominal risk free rate;

(2) the equity beta;

(3) the market risk premium;

(4) the "default" maturity period and bond rates used to calculate the nominal risk free rate;

(5) the ratio of the value of debt to the value of equity and debt;

(6) credit rating levels used to calculate the debt risk premium; and

(7) the assumed utilisation of imputation credits used to calculate the estimated cost of corporate income tax (refer to chapter 11 of this *Regulatory Proposal*).

Clause 6.5.4(c) requires that the AER must, in consequence of a review, issue a statement (a statement of regulatory intent or SORI) adopting values, methods and credit rating levels for DNSPs or for specified classes of DNSPs.

Clause 6.5.4(f) requires that a SORI adopting a revised value, method, or credit rating level applies only for the purposes of a Building Block Proposal submitted to the AER after publication of the SORI.

Clause 6.5.4(g) requires that a Distribution Determination to which a SORI is applicable must be consistent with the SORI unless there is persuasive evidence justifying a departure, in the particular case, from a value, method or credit rating level set in the SORI.

Clause 6.5.4(h) requires that, in deciding in a Distribution Determination whether a departure from a value, method or credit rating level set in a SORI is justified, the AER must consider:

(1) the criteria on which the value, method or credit rating level was set in the SORI (the underlying criteria); and

(2) whether, in the light of the underlying criteria, a material change in circumstances since the date of the SORI, or any other relevant factor, now makes a value, method or credit rating level set in the SORI inappropriate.

Clause 6.12.1(5) states that a Distribution Determination is predicated on a constituent decision by the AER in relation to the rate of return on whether to apply or depart from a value, method or credit rating level set out in a SORI in accordance with clause 6.5.4.

Clause S6.1.3(9) requires that a Building Block Proposal must at least contain Aurora's calculation of the proposed rate of return, including any departures from the values, methods or credit rating levels set out in the SORI.

9.3. AER's Draft Distribution Determination

The AER has not accepted Aurora's proposed WACC of 10.33 per cent and has replaced it with an indicative WACC of 8.08 per cent. The AER has indicated that the WACC reflects parameters, such as the nominal risk free rate (RFR) and debt risk premium (DRP), estimated over an indicative averaging period and will be updated for the AER's *Final Distribution Determination*.

In establishing the indicative WACC, the AER has accepted Aurora's proposed averaging period to calculate the nominal RFR, and proposed values for the equity beta and gearing. The AER has not accepted Aurora's proposed values for the market risk premium (MRP) and DRP.

Aurora proposed an MRP of 6.5 per cent as specified in the SORI. The AER considers that it has persuasive evidence justifying a departure from the SORI value and replaced it with an MRP of 6.0.

Aurora proposed to estimate the DRP by commencing with the DRP that is obtained from the longest term to maturity for which the Bloomberg BBB band fair value curve is produced, and then to extrapolate this DRP to one that is consistent with a 10 year term to maturity. The AER has rejected the Aurora proposed method and considers its method to calculate the DRP, based on the average of observed bond yields, appropriately incorporates relevant information from the market.

The AER has accepted Aurora's proposed value with regard to the assumed utilisation of imputation credits (gamma), which affects the tax building block allowance.

In addition to bottom-up analysis on the parameter inputs, the AER has also assessed the overall rate of return against market data to ensure that the WACC is appropriate.

9.4. AER's statement of regulatory intent

The AER undertook a review of the cost of capital values, methods and credit rating levels in accordance with clause 6.5.4 of the *Rules* and released its SORI in May 2009.

The SORI confirms the cost of capital values, methods and credit rating levels that will apply to Aurora when the AER makes its *Final Distribution Determination* unless Aurora proposes any departures from those values, methods or credit rating levels.

The values, methods and credit rating levels applicable in the AER's SORI are shown in Table 53.

Table 53

AER's SORI values

WACC parameter	AER's SORI Value
Risk free rate	Annualised yield on 10 year Commonwealth Government bonds based on an agreed averaging period.
Equity beta	0.80
Market risk premium	6.50%
Value of debt as proportion of value of debt and equity	0.60
Debt risk premium	To be based on a credit rating level of BBB+ as specified in clause 6.2.5(e) of the *Rules*.
Value of imputation credits	0.65

9.5. Aurora's proposal

Aurora's proposal for its return on capital addresses the relevant provisions of the NEL, the *Rules*, the SORI issued in May 2009 ("the applicable SORI") and the AER's *Draft Distribution Determination*.

In setting out its proposal, Aurora notes that the provision of an adequate return on capital is of critical importance to Aurora's owners and its customers. In particular, regulatory decision-making that results in the provision of an inadequate post-tax return will damage incentives for investment, and will ultimately deny customers the economic benefits that flow from distribution network investment.

Aurora has prepared a detailed analysis of the cost of capital requirements and its proposals for the values, methods and credit rating levels that will apply to Aurora. This analysis is appended as an attachment to this *Revised Regulatory Proposal*.

9.5.1. Risk free rate

The SORI requires that:

- the nominal RFR be calculated on a moving average basis from the annualised yield on Commonwealth Government bonds with a maturity of 10 years (based on the indicative mid rates published by the RBA); and
- the period of time in which the RFR is to be calculated should be as close as practically possible to the commencement of the forthcoming *Regulatory Control Period*, and should initially be proposed by the DNSP and agreed by the AER.

Averaging period

The AER has concluded that it is bound to apply the agreed averaging period to determine the risk free rate, irrespective of the state of capital markets at that time. The recent Federal Court decision in ActewAGL's application for judicial review was quoted in support of this view[1].

The AER accepted the measurement period for the establishment of the RFR as proposed by Aurora in its *Regulatory Proposal* and determined that it is bound to apply the agreed averaging period to determine the risk free rate, irrespective of the state of capital markets at that time. Aurora notes that ActewAGL's building block proposal was submitted before the AER issued its SORI, which had the effect of entirely replacing clause 6.5.2(c) of the *Rules* in relation to the determination of the RFR (in accordance with clause 6.5.4). The *Rules* provide the AER with the ability to depart from a method that is set out in the SORI if there is persuasive evidence justifying a departure. As discussed further below, Aurora considers that there is persuasive evidence to depart from the method for deriving the RFR that is set out in the SORI and that the AER should therefore consider these matters.

Equally, the manner of determining the averaging period for the RFR (as set out in the SORI) is a matter that could be departed from on this basis. Aurora believes that it would be contrary to the purpose of the discretion in clause 6.5.4(g) for the AER to not consider an alternative proposal from Aurora on the basis that the SORI itself prevents the AER from reviewing a previously agreed period.

The specific issue before the court in the ActewAGL case was whether, once the AER had specified an averaging period, it could subsequently alter that period in circumstances where the specified period had already concluded. Aurora previously sought the AER's agreement to reconsider an agreed averaging period prior to it commencing. Aurora considers that it is entirely consistent with clause 6.5.2(c) (and the corresponding provisions in the SORI) that the distributor and the AER should be able to agree to a revised averaging period at any time before its commencement.

Subject to the matter discussed below, Aurora is not proposing an alternative averaging period to that previously agreed by the AER.

Point adjustment to the risk free rate

Although the Australian real economy has performed relatively well during the recent global financial crisis and the current sovereign debt crisis, this has been due to the cushioning impact of strong underlying demand for mineral resources from developing Asian countries.

Australian equity and debt markets operate in financial markets, which are integrated with world financial markets. This has been (recently) evidenced by two historical lows in the yields on 10 year Commonwealth Government Securities (CGS).

The first of these falls in the 10 year CGS was in 2008-09 during the global financial crisis. The second is occurring currently, due to the world sovereign debt crisis.

During these two periods there has been a `flight to quality' in global financial markets, which has seen capital attracted to Australian CGS

1 ActewAGL Distribution v The Australian Energy Regulator (2011) 195 FCR 142

given the political stability of the country, and a relatively strong Australian dollar. These exceptional levels of demand for Australian CGS have been manifested in rising prices and plummeting CGS yields.

The regulatory framework that is focused on returns estimated through application of the Capital Asset Pricing Model (CAPM). In circumstances of temporary financial market instability there is a significant danger that the estimated returns will under-estimate the true cost of equity. This is because the CAPM will work relatively well if a long term MRP and a long term estimate of the RFR are applied, or if a short term MRP is applied in conjunction with a short term (i.e. crisis affected) RFR, but will fail when one of these elements is fixed to the long term while the other is allowed to vary with short term market conditions.

By proposing a long term MRP of 6.00 per cent, and the currently observed (short term) RFR, the AER will underestimate the rate of return required in the market place for funds.

The application of the CAPM for the RFR in the current `fight to quality' financial market circumstances will result in an investor's return on equity having a substantially lower rate than other DNSP's assets (for the same type of Australian assets). Aurora considers there is no compelling reason, that investment in Tasmanian based assets should deliver a lower return than investment in similar infrastructure assets in other States. The AER, in fulfilling the National Electricity Objective, should allow a return, that enables Aurora to receive a similar return as its assets are of a similar nature and degree of non-diversifiable risk as other DNSPs.

In its recent final decision on the Sydney Desalination Plant, the Independent and Regulatory Pricing Tribunal (IPART) recognised that current events in world financial markets are affecting Australia's CGS market. These events have depressed the RFR relative to the long term average, and an adjustment must be made to the RFR (or equivalently to the WACC as a whole) to compensate for the effect. IPART's key deliberations on this matter were as follows:[2]

> *"We determined the values for the parameters of the WACC based on market conditions over the 20 days to 28 October 2011. The risk free rate and debt margin have been affected by market volatility and the prolonged weak market following the credit crisis of 2008. The change in these factors has potentially created a disparity between these parameters (for which we use short term average data) and the market risk premium (for which we use long term average data).*
>
> *However, the effects of this disparity are mitigated by our decision to use a point estimate of 6.7%, which is 80 basis points higher than the midpoint of our estimated WACC range. In doing so, we had strong regard to the calculated WACC using longer term averages for market parameters."*

IPART further elaborated upon its approach as follows:[3]

> *"For this review, we consider that the value of the risk free rate is currently well below long term averages and that there is a high level of market uncertainty. We consider the risks in setting a 5-year determination in the current conditions are more significant than under normal market conditions.*
>
> *We acknowledge the argument that there may be greater stability in the sum of the market risk premium and the risk free rate (i.e., the expected market return) than in the individual components. In the current market circumstances, there is some evidence, as SDP noted, to support the view that expectations for the market risk premium have risen as bond yields have fallen."*

There are therefore two choices that can be made when addressing a period of extraordinary volatility in financial markets that depresses CGS yields:

- the first is to adopt an MRP that reflects the current market environment, i.e. adopt a higher MRP than the long term MRP; and
- the second approach is to adjust the RFR to a level that reflects the long term average.

Aurora considers the latter approach is appropriate.

In estimating the long term average of the 5 year CGS, IPART derived an estimate of 5.4 per cent. Aurora notes that from the start of 2000, to the beginning of the global financial crisis, the long term average yield on 10 year CGS has averaged at 5.50 per cent. As expected this is slightly higher than IPART has concluded for a 5 year CGS.

Aurora proposes that the AER adopts IPART's approach, and calculates the RFR for Aurora's WACC based on an estimated long term average of 5.50 percent.

The RFR for this *Revised Regulatory Proposal*, estimated in the manner described above, is 5.50 per cent.

2 IPART (2011), Review of water prices for Sydney Desalination Plant Pty Limited: Final Report, December, p.80.

3 IPART (2011), Review of water prices for Sydney Desalination Plant Pty Limited: Final Report, December, pp.93-94.

9.5.2. Debt risk premium

Bloomberg should continue to be used to derive the debt risk premium

Aurora notes that the AER has changed its method for estimating the DRP and no longer utilises the Bloomberg fair value curve. The AER proposal is to instead derive the DRP as a simple average of the debt risk premia for the Australian corporate bonds on issue that have a term of between seven and 13 years. Aurora has concerns regarding the AER's method, and the application of its method.

As discussed below, Aurora considers that the Bloomberg curve has a series of significant advantages over the AER's proposed method and should continue to be applied to derive DRP for regulated businesses.

Much of the AER's criticism of the ability for Bloomberg to `follow the market' is explained by the fact that Bloomberg understated the cost of debt between late 2008 and the end of 2009. PricewaterhouseCoopers demonstrated this in a report that was submitted to the AER approximately two years ago[4]. The AER does place weight on Bloomberg's statement that it is not intended to be a source of `predictive pricing information'.[5] However, the letter provided by Bloomberg does state that its curves are `intended to indicate if a bond is trading rich or deep as compared to peer bonds (as defined by the curve)'. This is the purpose of the Bloomberg curve when being used for setting the DRP. It could be interpreted that Bloomberg considers that its curve was not intended to predict beyond the range of its data inputs.

The main advantage with the Bloomberg curve is that it is an observable benchmark that is simple to apply. Additionally, the Bloomberg service imposes a series of tests to ensure that the data that it applies is of sufficient quality. It is this `screen' that has led to the currently perceived problems that it has not included all of the new bonds that have been issued and so has been interpreted as ignoring relevant information.

Aurora considers that these two points together create a particular strength for Bloomberg. The fact that the Bloomberg curve is observable and that Bloomberg is careful as to how new evidence is taken into account means that it has been feasible (at least prior to the GFC) to commit to using the Bloomberg curve in advance without requiring a detailed analysis of the outcomes in a particular averaging period.

The reliability of the outcome provided by the AER's method is questionable. The method is highly dependent on the quality of the bonds that are present at any point in time, and on the sample having an average credit rating and term that approximates to the SORI requirements.

Aurora considers it reasonable to continue to rely on estimates based on the Bloomberg fair value curve as the primary methodology to estimate the DRP. Aurora has therefore derived the DRP estimate based on the Bloomberg fair value.

Although Aurora considers that the Bloomberg fair value curve should be used to determine DRP, it has also examined the DRP estimated by the AER and has submitted variations to the AER's approach to address technical and method errors.

The AER methodology

The AER has changed its method for estimating the DRP and dispensed with the use of the Bloomberg fair value curve and instead derived the DRP as a simple average of the debt risk premia for the Australian corporate bonds on issue that have a term of between seven and 13 years.

The reliability of the outcome provided by the AER's proposed method is highly dependent on the quality of the bonds that are present at any point in time, and on that sample having an average credit rating and term that approximate to the SORI requirements. Aurora also has concerns with a number of the bonds that the AER has used in its sample, which is discussed further below.

Aurora also notes that it is conceivable that more Australian bonds (or bonds that the AER interprets as Australian corporate bonds) may be issued prior to Aurora's averaging period, which may have a material impact on the outcome. If the AER seeks to incorporate new bonds into the sample that is used to determine Aurora's DRP, Aurora considers that this would amount to a change in the method the AER has applied. Aurora considers it would be denied due process if it is not provided with an opportunity to comment on the applicability of any new bonds that the AER proposes to include in its sample.

Aurora also notes that if the AER intends to infer the DRP directly from observed bond yields (rather than using a published fair value curve), there may be benefit from applying more sophisticated techniques to derive the premium. This is particularly the case given the likelihood that it will be necessary to use bonds that have a term that is materially different to 10 years and a credit rating from bands other than BBB+.

Composition of the AER sample

Aurora has a number of concerns with the sample of bonds that the AER has considered for the purpose of deriving the DRP.

Aurora believes that the inclusion of the Coca Cola Amatil bond is contrary to the *Rules* requirement to have regard to Australian corporate bonds as this bond was issued in Europe.

Aurora notes that a review of the DRP suggests that this bond is an outlier and should have alerted the AER to the potential for the bond not to be representative. Aurora is concerned that such a bond was allowed to flow through to the AER's *Draft Distribution Determination*.

The AER's sample also includes a series of SPI bonds. Notwithstanding that its adviser, Oakvale Capital, advised that the market does not treat bonds issued by SPI as representative of its credit rating (A– in this case), but rather attribute substantial value to the Singapore Government's ownership of SPI.

Aurora considers that both the the Coca Cola Amatil and SPI bonds should be removed from the sample. Aurora has also reviewed the completeness of the bonds that the AER included in its narrow and larger sample and the debt risk premia that the AER published.

4 PricewaterhouseCoopers, Victorian Distribution Businesses - Methodology to Estimate the Debt Risk Premium, November 2009

5 Draft Distribution Determination Aurora Energy November 2011, Sect 9.3, p. 219.)

Within the sample, Aurora found only one bond for the extended sample that it considers the AER omitted. This was a fixed rate bond that Sydney Airport issued (issued 19 May 2011, maturing on 6 July 2018).

Aurora has replicated most of the AER's estimates, although it found errors (albeit some positive and some negative but which were not material to the outcome) for four of the bonds. Aurora further notes that for some of the bonds there was substantial disagreement between the different information sources as to what the prevailing market yield for the bond actually is. This is reflective of the effects of continued low levels of trade in the corporate bond market, which suggests that caution needs to be exercised when interpreting the corporate bond information.

Aurora analysis found that the DRP should be:

- 347 basis points from eliminating the European issued Coca Cola Amatil bond); and
- 364 basis points if the pseudo-sovereign SPI bond and Coca Cola Amatil bond are removed (the more appropriate sample).

Aurora therefore considers that a DRP of 364 basis points should be the DRP derived under the AER's method.

Aurora notes that the AER may update this premium prior to its *Final Distribution Determination* by taking an average over the agreed averaging period. There is also the potential for additional bonds to be issued prior to this period. If the Bloomberg fair value curve is not used to determine DRP, and should the AER seek to expand the sample of bonds beyond what was discussed above, Aurora contends this will amount to a change to the method for deriving the DRP and Aurora will be denied due process if it is not provided with a reasonable opportunity to comment upon the appropriateness of any new bonds.

Aurora's proposed DRP

The DRP for this *Revised Regulatory Proposal*, based on the Bloomberg fair value curve is estimated as 398 basis points.

9.5.3. Gearing level

The SORI requires that the value of debt as a proportion of the value of debt and equity (D/V or "gearing") be set at 0.60.

Aurora proposes to adopt a value of 0.60 for the gearing level, consistent with the SORI.

9.5.4. Market risk premium

The SORI requires that the value of the MRP be set at 6.50 per cent.

The AER has determined that there is persuasive evidence to reduce the MRP from the value that the AER adopted in its SORI to 6.00 per cent. As noted above, the AER has decided on this change notwithstanding that the RFR, during the averaging period, used is at a level commensurate with what was observed during the worst of the GFC.

Aurora also notes that the AER has stated that Aurora has not provided material in its *Regulatory Proposal* in support of adopting the value the AER determined in the SORI. Aurora considers that this is an unusual and surprising statement given; that the intention of the SORI process is to reduce the administrative cost of regulation by avoiding the need for each parameter to be reargued at each review. The AER has criticised DNSPs for seeking to reopen SORI values during price reviews and referred to that behaviour as `cherry picking': [6]

> *"For many parameters, the current rule framework in chapter 6 provides for the AER and DNSPs to be in continual 'WACC review' mode where considerable resources are spent at every determination process re-examining issues. The incentive for DNSPs to argue with the AER has also resulted in reviews by the Australian Competition Tribunal in pursuing a level of precision which can only be considered spurious in the context of many WACC parameters. Moreover, where the AER has undertaken a thorough review in the context of chapter 6A and made an overall decision which reflects the views and interests of all stakeholders, it remains open for DNSPs to cherry pick those component parameters of the WACC which they consider unfavourable for them. This process detracts from the AER's ability to adequately consider the resulting overall rate of return."*

The core proposition of the AER's analysis is that the weight of evidence suggests that financial markets have returned to normal since the GFC. The AER has also referred to a regulatory consensus for a MRP of 6.00 per cent, and has referred to more recent evidence; namely more recent 'evidence' from excess returns (including the AER's apparent decision to also consider geometric averages of returns, thus contradicting its SORI decision) and dividend growth measures.

Aurora considers that some of this evidence is not new, cannot justify a change, and otherwise contains errors. It cannot therefore be considered `persuasive'.

Aurora notes that the recent joint expert report on WACC matters commissioned by the ENA, in the context of the AER's current rule change proposal, set out in some detail evidence and secondary opinions regarding the ongoing effects of the GFC (with the current incarnation reflecting the ongoing European debt crisis)[7].

In the case of the AER's *Draft Distribution Determination*, most of the evidence the AER relies upon to demonstrate that financial markets have returned to normal relates to observations about the real economy; that is, matters such as economic output, employment levels, and so forth. It is the case that the Australian real economy (at least in aggregate) weathered the 'GFC storm' better than probably any other industrialised economy. This was, in a large

6 AER, 2011, Economic regulation of transmission and distribution network service providers Rule change proposal, p.65.

7 Balchin, J., Dermody, C. and G. Houston, 2011, Joint Expert Report on WACC issues – Report for the ENA, Chapter 3.

part, attributable to the boom of the commodities sector and the continued growth of China.

However, this evidence on the real economy that the AER has introduced is largely irrelevant. What matters, and what the *Rules* require the AER to consider when determining whether there is 'persuasive evidence' for change, is evidence relating to the state of financial markets. Aurora considers that Clause 6.5.4(e)(1) makes this intention clear (in the context of a review of WACC parameters and methods) when it requires regard to be had to:

> *"the need for the rate of return calculated for the purposes of clause 6.5.2(b) to be a forward looking rate of return that is commensurate with prevailing conditions in the market for funds and the risk involved in providing Standard Control Services"*

It is noted that the AER does assert that financial markets are now comparable with normal market conditions, as follows:[8]

> *"The AER does not consider that (short-term) market conditions now are identical to the (short-term) market conditions just before GFC began (that is, the 2006–07 financial year). However, the present market conditions are comparable to the market conditions that generally existed across the fluctuating business cycles through the last fifteen years."*

The yield on 10 year CGS since the RBA was provided with monetary policy independence and given an explicit inflation target depicts that the current yield on CGS is substantially lower than any rates observed during the preceding period. This yield could therefore not be considered as "comparable to the market conditions that generally existed across fluctuating business cycles through the last fifteen years".

Similarly, the current debt risk premia are substantially higher than observed prior to the GFC, with margins rising to more than required to `fill in the gap' left by the falling risk free rate. That is, the risk premium on debt has not merely risen to compensate for the fall in the risk free rate compared to pre-GFC times, rather the premium has risen by substantially more, implying a higher current total cost of debt compared to pre-GFC. As noted earlier, the risk free rate was about 5.5 per cent prior to the GFC, and at that time the `going rate' for the debt risk premium was 120 basis points. This implied a total cost of debt of 6.70 per cent. In contrast, the current debt risk premium (calculated using the Aurora corrected AER method) is approximately 364 basis points, implying a total cost of debt of 783 basis points, or a gap of 122 basis points. The risk premium that investors require for holding risky assets that are in the form of bonds is substantially higher than prior to the GFC. The same outcomes would be expected for long term risky assets held in the form of equity. The only difference between debt and equity is that the required returns for debt are much easier to observe. It is well documented that debt risk premia are driven by the same systematic risk factors that drive equity risk premia and would therefore be expected to move together.

Aurora is also concerned that the AER has again quoted as evidence "surveys" on the MRP that practitioners currently apply in Australia without analysing the quality of that evidence.
As Envestra noted, the Fernandez 2010 survey was based on the results of only seven anonymous email responses, which is not a representative (nor deep) sample.[9] The AER provides further background to the series of surveys that Fernandez and others have conducted. However, looking across those surveys, the most striking feature is that the results present ranges that are significantly divergent from one survey to the next, with no explanation of what may be causing this. The most reasonable view of this evidence is it is not sufficiently reliable to place weight upon when setting regulated prices for an essential service.

Moreover, the AER has not reported any survey of how market practitioners have measured the risk free rate during the times when it has been unusually low, nor the assumption that market practitioners make about "gamma". Aurora understands that the adjustment to the risk free rate as proposed above has been applied by a number of valuations practitioners, and that the majority of market practitioners apply a classical CAPM approach (that is, do not ascribe a value to franking credits).

The AER has presented new evidence of estimating the historical excess returns to equity, however, this is considered to be more of a new opinion about how premium should be measured. The AER concluded in the SORI that it should consider the long term arithmetic average of past returns with the new view to consider a form of blend of arithmetic and geometric averages, with the geometric average much lower than the arithmetic average.

Aurora does not consider it appropriate for the AER to seek to introduce new refinements to the theory of estimating MRP in the context of an individual DNSP's determination. The periodic, industry-wide review is the more appropriate forum for such innovation to be raised and properly tested by all stakeholders. Aurora submits that the use of an arithmetic average was a key part of the underlying criteria that supported the SORI decision, and that the AER's proposal amounts to a change to that criterion.

Lastly, the AER has presented ex ante estimates of the MRP using the dividend growth model. The AER has used a theta value of 0.35, dividend growth rate of 6 per cent (nominal) and a range for the dividend yield of 4-5 per cent thus delivering an ex ante MRP of 4.5 - 5.6 per cent. Applying those assumptions with the AER's decision for the RFR of 4.28 per cent then a range for the ex ante MRP ignoring the value of franking credits is between 6 per cent and 7 per cent. Adding on the value of franking credits would raise this further. These results do not provide any basis for varying the MRP from what was set out in the SORI.

In summary, the clear evidence suggests that conditions in financial markets are no less uncertain now than when the AER determined an MRP of 6.50 per cent in its SORI document, new approaches to estimating the historical excess return are not appropriate to bring in for an individual DNSP determination and the dividend growth model would support an MRP range of 6 - 7 per cent. Aurora contends that there is no persuasive evidence for change.

Aurora proposes to adopt a value of 6.50 per cent for the MRP, consistent with the SORI.

8 AER (2011), Aurora Draft Decision, p.225.

9 Envestra, 2011, Revised Access Arrangement Proposal, Attachment 9.9.

9.5.5. Value of imputation credits

The AER has accepted the Australian Competition Tribunal's value for gamma of 0.25.

Aurora proposes to adopt a value of 0.25 for gamma, consistent with the Australian Competition Tribunal's outcomes.

9.5.6. Equity beta

The equity beta has been assigned a value of 0.80 in the SORI.

Aurora proposes to adopt a value of 0.80 for the equity beta, consistent with the requirements of the SORI.

9.5.7. Inflation

Aurora proposes to adopt an inflation forecast of 2.63 per cent per annum for this *Regulatory Proposal*.[10] The forecast inflation is the geometric average of the forecast annual inflation for each of the ten years from 2011 to 2020, as shown in Table 54.

Table 54

Forecast inflation (per cent per annum, June year end)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Inflation forecast	3.60	2.00	3.25	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Geometric average	2.63									

For the 2011-13 years, the expected inflation estimates are consistent with the data on median inflation expectations for market economists as reported in the RBA's November 2011 Statement of Monetary Policy[11].

For the 2014 year and beyond, the expected inflation estimates are the midpoints of the RBA's long term inflation target range of 2 per cent to 3 per cent (i.e. 2.50 per cent).

Aurora understands that this approach is consistent with the AER's preferred approach for estimating the forecast inflation rate.

9.5.8. Aurora's parameters

The values, methods and credit rating levels proposed by Aurora for the cost of capital are shown in Table 55.

Table 55

Aurora proposal

Parameter	AER's Draft Determination	Aurora proposal
Nominal risk free rate	4.28%	5.50%
Equity beta	0.80	0.80
Market risk premium	6.00%	6.50%
Value of debt as a proportion of the value of debt and equity (gearing)	0.60	0.60
Debt risk premium	3.14%	3.98%
Value of imputation credits	0.25	0.25
Inflation	2.62%	2.63%
Cost of equity (ke)	9.08%	10.70%
Cost of debt (kd)	7.42%	9.48%
Nominal vanilla WACC	8.08%	9.97%
Post-tax nominal WACC	6.38%	7.85%

10 Aurora Energy understands that this estimate will be updated during the AER's determination process as data becomes available.

11 Reserve Bank of Australia, Statement on Monetary Policy, February 2011, Table 6.1, page 60

10. Depreciation

10. Depreciation

10.1. Rules requirements

Clause 6.4.3 of the *Rules* provides that the annual revenue requirement must be determined using a Building Block approach, which includes a component for depreciation calculated pursuant to clause 6.5.5.

Clause 6.5.5(a)(1) states that depreciation must be calculated based on the value of the RAB at the beginning of each year.

Clause 6.5.5(a)(2) states that depreciation is to be calculated using depreciation schedules nominated by Aurora in the Building Block Proposal.

Clause 6.5.5(b)(1) requires that depreciation schedules must be based on the economic life of the assets.

Clause 6.5.5(b)(2) requires that the recovery of depreciation must maintain net present value neutrality over the life of the asset.

Clause 6.5.5(b)(3) requires that the economic life, depreciation rates and methods underpinning the calculation of depreciation for a *Regulatory Control Period* must be consistent with that specified for that period in the previous Distribution Determination.

Clause S6.1.3(12) requires the depreciation schedules nominated by Aurora to be categorised by asset class or category driver, together with details of the amounts, values and other inputs used to compile the depreciation schedules, and a demonstration that the depreciation schedules conform with the requirements set out in clause 6.5.5(b) of the *Rules*.

10.2. Depreciation methodology

The *Rules* do not set out a precise mechanism for calculating depreciation. The AER has however issued its preferred methodology in the PTRM. Aurora has used the AER's PTRM without amendment, and has therefore calculated its depreci–ation allowance using that methodology.

Aurora has depreciated new assets according to standard lives for each asset class. These are set out below in the Table 56.

Aurora has depreciated its existing assets over their remaining asset lives. Opening asset values at 1 July 2012 have been calculated applying the AER's RFM. Details on how Aurora has undertaken this process are set out in chapter 8 of this *Revised Regulatory Proposal*.

10.3. AER's Draft Distribution Determination

The AER has accepted Aurora's proposed asset classes, standard and remaining lives and straight-line method to calculate the regulatory depreciation allowance and considers that the proposed asset classes and standard asset lives are consistent with those approved by OTTER.

In its *Draft Distribution Determination*, the AER did not accept Aurora's proposed forecast regulatory depreciation allowance of $231.9 million ($nominal) for the forthcoming *Regulatory Control Period*. Adjustments made to the proposed opening RAB, forecast capital expenditure and inflation have impacted the regulatory depreciation allowance.

Aurora has provided a revised regulatory depreciation allowance in this *Revised Regulatory Proposal* taking into account adjustments made for revised capital expenditure, revised escalators and the revised opening RAB. Aurora has not made any amendments to asset classes or standard and remaining lives. These remain consistent with Aurora's *Regulatory Proposal*.

10.4. Standard and remaining lives for asset classes

Aurora has adopted standard and remaining asset lives in accordance with good engineering practice and its own financial records.

Opening remaining asset lives for 1 July 2012 are calculated using the AER's RFM and are an input to the PTRM. These are calculated values. Aurora's methodology for establishing the opening asset lives at the commencement of the previous *Regulatory Control Period* is set out in chapter 8 of this *Revised Regulatory Proposal*.

Aurora's proposed standard asset lives by asset class have been derived from Aurora's ring-fenced accounts.

Table 56 provides standard and remaining asset lives by asset class.

Table 56

Standard and remaining lives

Asset category	Standard life (years)	Remaining life (years)
Overhead subtransmission lines (urban)	50	29.43
Underground subtransmission lines (urban)	60	38.22
Urban zone substations	40	31.08
Rural zone substations	40	29.63
SCADA	10	2.60
Distribution switching stations (ground)	40	32.42
Overhead high voltage lines urban	35	24.03
Overhead high voltage lines rural	35	20.87
Voltage regulators on distribution feeders	40	23.22
Underground high voltage lines	60	42.19
Underground high voltage lines SWER	60	47.98
Distribution substations HV (pole)	40	33.48
Distribution substations HV (ground)	40	17.04
Distribution substations LV (pole)	40	23.01
Distribution substations LV (ground)	40	24.63
Overhead low voltage lines underbuilt urban	35	23.88
Overhead low voltage lines underbuilt rural	35	17.66
Overhead low voltage lines urban	35	24.39
Overhead low voltage lines rural	35	25.93
Underground low voltage lines	60	38.10
Underground low voltage common trench	60	47.22
HVST service connections	40	2.08
HV service connections	40	28.29
HV metering CA service connections	40	11.12
HV/LV service connections	40	27.17
Business LV service connections	35	13.14
Business LV metering CA service connections	25	6.37
Domestic LV service connections	35	21.97
Domestic LV metering CA service connections	20	3.92
Emergency network spares	n/a	n/a
Motor vehicles	6	3.53
Minor assets	5	2.64
Non-system property	40	17.27
Spare parts	n/a	n/a
NEM assets	5	1.79

10.5. Forecast regulatory depreciation

Table 57 shows the revised depreciation Building Blocks for *Standard Control Services* for 2012-17:

Table 57

Depreciation building blocks

	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Straight-line depreciation (real)	83.97	84.95	82.67	77.08	76.73
Straight-line depreciation (nominal)	86.18	89.49	89.38	85.52	87.38
Regulatory depreciation (nominal)	48.34	49.44	47.28	41.42	40.99
Inflation on opening RAB	2.63%	2.63%	2.63%	2.63%	2.63%

10.6. Regulatory tax lives for asset classes

Aurora's opening tax asset values, and opening tax asset lives in the AER's RFM, are set out in chapter 11 of this *Revised Regulatory Proposal*.

In relation to the forthcoming *Regulatory Control Period*, Aurora has forecast its cost of corporate income tax pursuant to clause 6.5.3 of the *Rules*, using the PTRM in accordance with the AER's preferred methods. Aurora has calculated tax depreciation in accordance with tax law and with the methodology contained within the PTRM. In accordance with the PTRM, Aurora has calculated tax depreciation on a straight-line basis, using applicable straight-line tax depreciation rates.

Table 58 provides tax asset lives by asset class.

Table 58

Tax lives

Asset category	Tax life (years)	Remaining life (years)
Overhead subtransmission lines (urban)	45	38.70
Underground subtransmission lines (urban)	50	48.25
Urban zone substations	33	28.60
Rural zone substations	33	30.72
SCADA	33	29.16
Distribution switching stations (ground)	36	28.67
Overhead high voltage lines urban	35	29.13
Overhead high voltage lines rural	33	24.67
Voltage regulators on distribution feeders	45	43.61
Underground high voltage lines	31	18.88
Underground high voltage lines SWER	31	0.00
Distribution substations HV (pole)	38	33.08
Distribution substations HV (ground)	33	25.35
Distribution substations LV (pole)	37	31.83
Distribution substations LV (ground)	34	28.75
Overhead low voltage lines underbuilt urban	37	31.35
Overhead low voltage lines underbuilt rural	39	34.45
Overhead low voltage lines urban	35	28.64
Overhead low voltage lines rural	37	30.80
Underground low voltage lines	42	39.46
Underground low voltage common trench	43	40.92
HVST service connections	36	0.00
HV service connections	36	31.37
HV metering CA service connections	36	34.98
HV/LV service connections	36	31.45
Business LV service connections	36	31.09
Business LV metering CA service connections	36	34.90
Domestic LV service connections	36	31.87
Domestic LV metering CA service connections	36	34.59
Emergency network spares	n/a	n/a
Motor vehicles	9	4.42
Minor assets	5	2.89
Non-system property	35	21.16
Spare parts	n/a	n/a
NEM assets	3	1.54

10.7. Forecast regulatory tax depreciation

Aurora's revised forecast tax depreciation schedule for the forthcoming *Regulatory Control Period*, which has been used to calculate Aurora's nominal allowance for corporate income tax, is shown in Table 59. Section 10.8 of this *Revised Regulatory Proposal* provides further details on Aurora's proposed allowance for corporate income tax.

Table 59

Tax depreciation schedule

Asset category	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Overhead subtransmission lines (urban)	0.1	0.1	0.1	0.1	0.2
Underground subtransmission lines (urban)	0.0	0.1	0.1	0.1	0.1
Urban zone substations	1.1	1.2	1.4	1.5	1.7
Rural zone substations	0.1	0.1	0.1	0.1	0.1
SCADA	0.2	0.2	0.4	0.6	0.6
Distribution switching stations (ground)	0.9	0.9	1.0	1.0	1.0
Overhead high voltage lines urban	3.1	3.2	3.4	3.6	3.8
Overhead high voltage lines rural	10.0	10.8	11.6	12.4	13.2
Voltage regulators on distribution feeders	0.1	0.1	0.1	0.1	0.2
Underground high voltage lines	6.8	7.4	8.0	8.6	9.2
Underground high voltage lines SWER	0.0	0.0	0.0	0.0	0.0
Distribution substations HV (pole)	0.0	0.0	0.0	0.0	0.1
Distribution substations HV (ground)	0.3	0.4	0.5	0.6	0.8
Distribution substations LV (pole)	2.4	2.6	3.0	3.3	3.6
Distribution substations LV (ground)	1.3	1.4	1.6	1.8	1.9
Overhead low voltage lines underbuilt urban	1.3	1.4	1.5	1.6	1.7
Overhead low voltage lines underbuilt rural	0.5	0.6	0.7	0.8	0.8
Overhead low voltage lines urban	1.6	1.7	1.8	1.9	2.1
Overhead low voltage lines rural	1.4	1.6	1.8	2.0	2.3
Underground low voltage lines	0.8	0.9	1.1	1.3	1.4
Underground low voltage common trench	0.5	0.6	0.7	0.7	0.8
HVST service connections	-	-	-	-	-
HV service connections	0.0	0.0	0.0	0.0	0.0
HV metering CA service connections	0.0	0.0	0.0	0.0	0.0
HV/LV service connections	0.0	0.1	0.1	0.1	0.1
Business LV service connections	0.1	0.2	0.2	0.2	0.2
Business LV metering CA service connections	0.1	0.1	0.1	0.2	0.2
Domestic LV service connections	1.3	1.4	1.5	1.6	1.7
Domestic LV metering CA service connections	0.1	0.1	0.1	0.2	0.2
Emergency network spares	-	-	-	-	-
Motor vehicles	5.5	6.3	6.9	7.4	4.5
Minor assets	9.7	11.9	12.6	5.6	8.2
Non-system property	1.2	1.2	1.2	1.2	1.2
Spare parts	-	-	-	-	-
NEM assets	4.1	2.2	-	-	-
Residual tax value	1,082.10	1,163.10	1,237.70	1,319.70	1,397.30

10.8. Actual or forecast depreciation

Clause 6.12.1(18) of the *Rules* requires the AER to make a decision as to whether depreciation for establishing the RAB as at the commencement of the forthcoming *Regulatory Control Period* is to be based on actual or forecast capital expenditure.

Aurora proposes that depreciation for establishing the RAB as at the commencement of the forthcoming *Regulatory Control Period* is based on its revised forecast capital expenditure.

10.8.1. Roll forward 2012

Aurora proposes that depreciation for establishing the RAB as at the commencement of the 2012-17 *Regulatory Control Period* be based on its:

- actual capital expenditure for the period 2006-07 to 2009-10; and
- forecast capital expenditure for the period 2010-11 and 2011-12.

10.8.2. Roll forward 2017

Aurora proposes that depreciation for establishing the RAB as at the commencement of the 2017-22 *Regulatory Control Period* be based on its:

- difference between the forecast and actual capital expenditure for the period 2010-11 and 2011-12;
- actual capital expenditure for the period 2012-13 to 2014-15; and
- forecast capital expenditure for the period 2015-16 and 2016-17.

10. Depreciation

11. Corporate income tax

11. Corporate income tax

11.1. Rules requirements

Clause 6.4.3(a) of the *Rules* requires that Aurora's annual revenue requirement for each *Regulatory Year* of the forthcoming *Regulatory Control Period* must be determined using a Building Block approach, under which one of the building blocks is the estimated cost of corporate income tax of Aurora for that year.

Clause 6.4.3(b)(4) specifies that the estimated cost of corporate income tax is determined in accordance with clause 6.5.3 (below); and notes that a statement of regulatory intent (SORI) may be relevant to the calculation (clause 6.5.4).

Clause 6.5.3 requires that the estimated cost of Aurora's corporate income tax for each *Regulatory Year* (ETCt) must be calculated in accordance with the following formula:

$$ETC_t = (ETI_t \times r_t)\ (1 - \gamma)$$

where:

ETI_t is an estimate of the taxable income for that *Regulatory Year* that would be earned by a benchmark efficient entity as a result of the provision of *Standard Control Services* if such an entity, rather than Aurora, operated the business of Aurora, such estimate being determined in accordance with the PTRM;

r_t is the expected statutory income tax rate for that *Regulatory Year* as determined by the AER; and

γ is the assumed utilisation of imputation credits.

For these purposes:

- the cost of debt must be based on that of a benchmark efficient Distribution Network Service Provider (DNSP); and
- the estimate must take into account the estimated depreciation for that *Regulatory Year* for tax purposes, for a benchmark efficient DNSP, of assets where the value of those assets is included in the regulatory asset base for the relevant distribution system for that *Regulatory Year.*

Clause 6.5.4(d)(7) provides that the AER may review the value of the assumed utilisation of imputation credits referred to in clause 6.5.3 and issue a SORI setting out this value (and other values).

The AER determined that the value of imputation credits, or gamma should be 0.65 in the SORI relevant to Aurora's distribution Building Block Determinations[1]. A departure from the SORI is only permissible where there is persuasive evidence to justify that departure.

Section 2.5 of the RFM Handbook details how Aurora's opening tax value for the final *Regulatory Year* of the previous *Regulatory Control Period* should be used to establish the nominal opening tax value for each *Regulatory Year* of the current *Regulatory Control Period.*

Section 2.1 of the PTRM Handbook sets out how the opening tax value for each asset class must be determined on the basis of closing tax asset values for the current *Regulatory Control Period*, and how the tax remaining life and tax standard life should be recorded.

Consistent with the above *Rules* requirements this chapter sets out the methodology used by Aurora to determine the estimated cost of corporate income tax; and summarises the estimated tax costs. Importantly, the corporate income tax allowance is based on estimates of the tax paid by a "benchmark efficient DNSP", not on the tax actually paid, or forecast to be actually paid.

11.2. AER's Draft Distribution Determination

In its *Draft Distribution Determination*, the AER has accepted Aurora's proposed methodology used to establish the opening tax asset base for the pre-tax to post-tax transition framework. The AER has also accepted Aurora's proposed standard tax asset lives and remaining tax asset lives which were used to quantify and establish the opening tax asset base.

The AER has not accepted Aurora's proposed estimated cost of corporate income tax allowance for the forthcoming *Regulatory Control Period* of $110 million ($nominal). Adjustments to the opening tax asset base as at 1 July 2012 and other building block adjustments including return on the AER's proposed capital expenditure and operating expenditure have impacted on the estimated corporate income tax allowance.

1 AER Statement of regulatory intent on the revised WACC parameters (distribution), May 2009, p.7.

Aurora has provided a revised forecast of corporate income tax allowance in this *Revised Regulatory Proposal* taking into account adjustments made for returns on revised capital expenditure, revised operating expenditure, and the revised opening tax asset base. Aurora has not made any amendments to its proposed methodology used to establish the opening tax asset base or to the standard tax asset lives and remaining tax asset lives. These remain consistent with Aurora's *Regulatory Proposal*.

11.3. OTTER treatment of corporate income tax

OTTER applied a pre-tax real approach to determine Aurora's revenue requirements for the current *Regulatory Control Period*[2] which meant that it did not establish a tax asset base for Aurora. This was because there was no requirement to specifically provide an allowance for corporate income tax.

Previously OTTER was required only to make a broader assessment of tax implications by having regard for "*the impact on pricing policies of any borrowing, capital, dividend and taxation or tax equivalent obligations of the electricity entity, including obligations to renew or increase assets*"[3]. Accordingly OTTER allowed a return on capital that was sufficient to cover estimated corporate income tax payments over the forthcoming *Regulatory Control Period*.

Aurora is registered under the National Tax Equivalent Regime (NTER) which requires the lodgement of an income tax equivalent return for each year. Under the NTER the relevant tax laws are applied notionally to Aurora as if it were the subject of the laws. Aurora's income tax equivalent liability is assessed annually by the Australian Taxation Office (ATO), and it must pay quarterly instalments of the liability to the Department of Treasury and Finance on the basis of this assessment.

Table 60 summarises Aurora's NTER values for *Standard Control Services* through to the period ending 2010-11, as assessed by the ATO.

Table 60

NTER Values for Standard Control Services to 2009-10

	2003-04 ($m)	2004-05 ($m)	2005-06 ($m)	2006-07 ($m)	2007-08 ($m)	2008-09 ($m)	2009-10 ($m)	2010-11 ($m)
Total NTER Opening Asset Value	288.691	336.150	394.778	472.209	526.091	607.635	705.729	816.099
Disposals	1.245	1.073	1.395	7.533	0.524	0.972	1.120	0.570
Tax Depreciation	21.157	23.883	29.782	31.606	29.407	35.926	37.113	41.828
Actual Capital expenditure	69.861	83.585	108.608	93.020	111.475	134.990	148.600	141.740
Total NTER Closing Asset Value	**336.150**	**394.778**	**472.209**	**526.091**	**607.635**	**705.729**	**816.099**	**915.439**

11.4. Forthcoming Regulatory Control Period overview

Aurora has calculated its revised corporate income tax allowance for each *Regulatory Year* of the forthcoming *Regulatory Control Period* consistent with the requirements of the *Rules*, and RFM and PTRM Handbooks. For this purpose, Aurora has adopted the following high level approach, where it:

(1) established the appropriate asset balances for its revised opening tax asset base as of 1 July 2007 using the methodology devised and endorsed by Deloitte and KPMG respectively. A total opening tax asset base of $526.10 million was calculated;

(2) entered the opening tax asset base values and required data, as of 1 July 2007, into the AER's RFM, to determine the revised closing tax asset base of $1,009.34 million as at 30 June 2012;

(3) adjusted the revised closing tax asset base value to account for the use of shared services assets to determine the closing tax asset base as at 30 June 2012, which then was input into the PTRM as the revised 1 July 2012 opening tax asset base of $993.74 million;

(4) calculated its revised tax income as the estimated ARR of $1,541.65 million, plus the revised estimated value of customer contributions of $83.01 million, using the PTRM;

(5) calculated its revised estimated tax expense of $1,164.17 million based on the costs that a "benchmark efficient entity" would incur under the current statutory corporate tax rate as prescribed by ATO taxation rules. Tax expenses included were the estimated values for operating expenditure, tax depreciation, and interest or debt servicing expenses;

(6) calculated revised pre-tax income of $460.50 million, being its total tax income less total tax expenses, as determined in the steps above;

(7) recorded a carried forward tax loss equal to zero as at 1 July 2012;

(8) aggregated the values determined in steps (4) and (5) to obtain the value for total taxable income of $460.50 million;

(9) applied the current statutory corporate tax rate of 30 per cent, as prescribed by ATO taxation rules to its total taxable income to determine the revised tax allowance building block; and

2 OTTER 2007 Electricity Pricing Investigation – Final Report, p. XIX, 2007.

3 Tasmanian Electricity Supply Industry (Price Control) Regulations 2003, s33(2)(j).

(10) adjusted the revised corporate income tax allowance to offset for imputation credits. A gamma value of 0.25 was applied, reflecting a departure from the value of 0.65 set out in the AER's SORI.

The specific issues encountered, and the rationale underpinning Aurora's approach, in undertaking this process and associated calculations are discussed below.

Aurora's opening tax asset base as of 1 July 2007 was calculated to be $526.1 million; and its opening tax asset base as of 1 July 2012 was estimated to be $993.74 million. Aurora's corporate income tax cost estimate for the forthcoming *Regulatory Control Period* is set out in Table 61.

Table 61

Corporate income tax estimate for forthcoming Regulatory Control Period

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)	TOTAL ($m)
Tax payable	27.43	27.99	27.52	27.57	27.63	**138.15**
Less value of imputation credits	6.86	7.00	6.88	6.89	6.91	**34.54**
Net corporate income tax allowance	20.57	21.00	20.64	20.68	20.72	**103.61**

11.5. Opening tax asset base

The establishment of the revised opening tax asset base forms the foundation step in calculating Aurora's corporate income tax allowance. As OTTER applied a pre-tax real approach to determine Aurora's revenue requirements for the current *Regulatory Control Period*, Aurora has not previously been required to establish a tax asset base. As a result, it has been necessary for Aurora to develop, on the basis of available data, a methodology to establish the opening tax asset base for input into the RFM and the PTRM.

Aurora engaged the services of Deloitte to develop, and KPMG to endorse, the methodology it has used to establish the opening tax asset base as at 1 July 2007. In developing its methodology Deloitte had regard to its understanding of the AER's ideal approach[4], being to:

- identify when the entity was first subject to the tax equivalence regime;
- verify the tax value of the assets as at that date;
- identify a historical profile of when assets first became subject to tax;
- calculate a tax roll-forward to the commencement of the regulatory period using tax depreciation and actual capital expenditure and disposals; and
- depreciate on a straight-line basis for tax purposes.

Aurora proposes an opening tax asset base as at 1 July 2007 of $526.1 million as determined using the below methodology.

11.5.1. Fixed asset registers

Consistent with the approach developed by Deloitte[5], Aurora adopted a methodology which sourced asset data from two fixed asset registers, dependent on when the assets were acquired, being:

- tax fixed asset register for assets acquired up to 30 June 2002; and
- accounting fixed asset register for assets acquired between 1 July 2002 and 30 June 2007.

Aurora used its tax written down values as at 30 June 2002 in order to provide consistency between how Aurora actually depreciates assets for tax purposes under the NTER, with the method to account for tax depreciation under the RFM and PTRM models in terms of the measurement of the effective lives of Aurora's assets.

It was necessary that Aurora use values from the accounting fixed asset register for the period 1 July 2002 to 30 June 2007, rather than the tax fixed asset register, for several reasons:

- in the tax fixed asset register, low value assets are pooled under concessional accelerated depreciation rules consistent with Division 40 of the *Income Tax Assessment Act 1997* (ITAA);
- in the accounting fixed asset register, assets are not pooled which enables all additions in the period to be separately identified and depreciated using specific straight-line depreciation rates; and
- the tax pooled assets include *Alternative Control Services* assets, being street lights and meters, which can only be separately identified and excluded using the accounting fixed asset register.

Aurora notes that the effective lives associated with the accounting fixed asset register are determined using the same principles as for the tax fixed asset register.

For assets acquired up to 30 June 2002 Aurora's tax fixed asset register supplied the data pertaining to asset acquisition costs; depreciation start dates; and straight-line depreciation rates and associated effective asset lives. Where information on depreciation rates and effective asset lives was not available, values used for the equivalent depreciation rate for an asset with the same effective life were used as a proxy for the actual data.

4 Deloitte, Aurora Energy Pty Ltd, Australian Energy Regulator, 24 November 2010, section 1.1.

5 Deloitte, Aurora Energy Pty Ltd, Australian Energy Regulator, 24 November 2010, section 1.3.

For assets acquired in the period 1 July 2002 to 30 June 2007 Aurora's accounting fixed asset register supplied asset acquisition costs, depreciation start dates, and straight-line depreciation rates and associated effective asset lives.

Aurora notes in relation to its tax fixed asset register, used up until 30 June 2002, that the acquisition values included low value tax pooled assets. It is acknowledged that the pooled assets potentially include alternative control assets; however these do not impact on Aurora's tax asset base model. This is because these assets are written off under Aurora's model prior to 30 June 2007, and are consequently not included in the 30 June 2007 values under the tax asset base model.

The remainder of assets that would have fallen within the low value pool, such as tools, computer and communications equipment, were considered to have short effective lives, meaning that they would have had minimal, if not a nil, written down value as at 30 June 2007, regardless of whether separate effective lives were determined and used for these assets. On this basis, Aurora considered its approach of using the tax, then accounting fixed asset register data, as appropriate and consistent with *Rules* requirements.

11.5.2. Segregation of Standard Control Services assets

Aurora removed fully depreciated assets, land assets not eligible for depreciation deductions, and low value tax pooled assets from its tax asset base model. Where separately coded, and therefore identifiable, non-*Standard Control Services* assets were also removed from the tax asset base model, and this included the removal of:

- the portion of shared assets that could not be attributed to *Standard Control Services*;
- *Alternative Control Services* assets, where separately recorded as meters or streetlights;
- Meter Data Management System (MDMS) assets; and
- Aurora's energy business assets.

11.5.3. NTER

Aurora, as a Government-owned business, is not subject to the ITAA for Constitutional reasons, but must pay income tax under the NTER for competition neutrality reasons. It is noted that Aurora's methodology to establish the opening tax asset base is also consistent with NTER requirements.

Where an entity was under a state Tax Equivalent Regime (TER), and commenced being under the NTER prior to 30 June 2002, the NTER entity's commencing position for the purposes of the NTER was required to be equal to its closing positions in the TER[6]. In this respect, the Hydro-Electric Corporation commenced under the State TER in 1990. Whilst Aurora was also initially under the State TER, a transfer of assets at written down values is in line with the subsequent NTER requirements.

Where there is a transfer of assets from one NTER entity to another under a Government imposed restructure, the restructure should be treated in a tax neutral manner for NTER purposes[7]. A tax neutral manner suggests that assets are transferred at tax written down values, meaning there is no gain or loss, or step up or down of cost base, from the transfer of depreciable assets from one NTER entity to another. Aurora confirms that its approach has been consistent with NTER requirements in this regard.

11.5.4. Depreciation

Aurora considers its method of depreciation to be appropriate with the requirements of the *Rules* on the basis that it:

- applies straight-line depreciation;
- is consistent with the effective lives of assets as used for NTER tax depreciation purposes;
- depreciates assets from the time the assets were acquired as per Aurora's historic records; and
- uses effective lives consistent with accounting fixed asset register effective lives.

It should be noted that there is a differential between the written down values of Aurora's model and those of the tax fixed asset register, which included assets that were subject to accelerated depreciation provisions of the ITAA. This is consistent with requirements of the RFM and PTRM, where the straight-line method of depreciation has been used for the period from 1 July 2002 to 30 June 2007.

To determine straight-line depreciation rates Aurora has, in the past, calculated tax depreciation using self-assessed effective lives based on the effective lives assessed for accounting depreciation purposes. In its tax asset base model Aurora determined the straight-line depreciation rate by using the effective life stated for each asset in its registers.

Where there was no statement of the effective life or the prime cost rate for the assets, the rate was determined using the diminishing value rate of depreciation used in the tax fixed asset register. This is only relevant for assets acquired up to 30 June 2002.

11.5.5. Effective lives

Aurora did not consider it appropriate to use effective lives, as published by the ATO, and accepted by the Commissioner of Taxation, in determining the straight-line depreciation rate for its assets. This is because Aurora's asset base is characterised by a large number and variety of depreciable assets and it is difficult to apply the Commissioner's rates to each individual asset.

Although effective lives could be allocated based on asset categories to accommodate the Commissioner's rates, this approach would have been less precise than the self assessed lives allocated by Aurora, which were determined on an asset-by-asset basis. For this reason, it is considered that using Aurora's self-assessed effective lives provides a more accurate basis for determining the effective lives of assets, given that they were determined upon the initial entry of each individual asset into the fixed asset register.

6 ATO Manual for the National Tax Equivalent Regime January 2008 (Version 6), s91

7 ATO Manual for the National Tax Equivalent Regime January 2008 (Version 6), s103.

11.5.6. Work in progress

This *Revised Regulatory Proposal* reflects the forecast work in progress at 30 June 2012 based on currently available data. To accommodate the depreciation of work in progress the estimated work in progress value at 1 July 2012 has been calculated on the basis of the work in progress balance at 30 June 2011.

11.5.7. Determination of acquisition costs

Limited historical information was available to enable the written down cost base of the tax assets to be determined. An examination of Aurora's current and historical records carried out by Deloitte determined that the most complete and reliable information was the tax fixed asset register as at 30 June 2002, supplemented by additions and disposals as per the accounting fixed asset register for each of the years ended 30 June 2003 to 30 June 2007 inclusive.

Aurora could only use historical asset data back to 2002 as a result of its migration to a new accounting system and the transfer of all asset values to a new tax fixed asset register. That information was revised for incorporation into the new accounting system, and consequently the historical data prior to 2002 could not be extracted for preparing this *Revised Regulatory Proposal*. An approach consistent with that adopted for Aurora's *Regulatory Proposal*.

Broadly, to determine the original cost of assets, the following methodology, as developed by Deloitte, was applied:

- for assets acquired up to the period ended 30 June 2002, acquisition cost of assets as stated in Aurora's tax fixed asset register at 30 June 2002 were sourced;
- for assets acquired in the period from 1 July 2002 to 30 June 2007, acquisition costs of assets as per Aurora's accounting fixed asset register were sourced;
- disposals in the period from 1 July 2002 to 30 June 2007 were allocated to each individual asset, using the fixed asset numbers (whether acquired pre or post 30 June 2002). In some cases, the disposal amount was greater than the asset value, or related to assets no longer appearing on the asset register. These surplus amounts were treated as a gain on disposal and excluded from the tax asset base model;
- shared use assets were included in the assets listed as *Standard Control Services* assets and were separately identified according to asset class code. This percentage was then applied to the acquisition cost of *Standard Control Services* assets to reduce the starting value of assets;
- *Alternative Control Services* assets, MDMS assets, and Aurora's energy business assets, where separately identified, were removed from the tax asset base model; and
- fully depreciated assets, including low value tax pooled assets, and land assets that are not entitled to depreciation deductions were removed from the model.

11.5.8. Determination of straight-line depreciation rates

In its tax asset base model Aurora determined the depreciation rate by using the effective life stated for each asset in either the tax fixed asset register at 30 June 2002 or the accounting fixed asset register. Each effective life was stated in years with the straight-line depreciation rate being determined by dividing 100 per cent by the effective life.

Where there was no statement of the effective life or the straight-line depreciation rate for the assets, the rate was determined using the diminishing value rate of depreciation used in the tax fixed asset register. This was only necessary for some assets acquired up to 30 June 2002, with all assets acquired after this date having known effective lives.

To determine the rate in these instances, the diminishing value rate of depreciation was determined by using a gross-up rate of 150 per cent up until 9 May 2006. After this date, the gross-up rate of 200 per cent could be used. The self-assessed effective lives used by Aurora in the raw data were then determined using the established diminishing value rate. Finally, the straight-line rate of depreciation, based on the Aurora self-assessed effective lives, was then determined.

11.5.9. Determination of 30 June 2007 tax asset values

Aurora's tax asset base model uses the straight-line method for writing down the value of assets, at the rates determined by Aurora's self-assessed effective lives for each asset, or where not available, using the conversion of diminishing value rates of depreciation to straight-line rates.

The assets were depreciated from the depreciation start date provided in the raw data, which therefore included start dates in the 1950s and sometimes earlier. Accordingly, many of the assets under this methodology were fully written down as at 30 June 2002, and were removed from the tax asset base model.

The raw data sourced acquisition costs of assets, as stated in the tax fixed asset register up until 30 June 2002 (and after that date the accounting cost of additions) rather than written down values given to the assets, were depreciated from the date of acquisition.

From 1 July 2001, assets costing less than $1,000 were pooled and depreciated at 37.5 per cent applying the diminishing value method, consistent with the method applied in Aurora's raw data. While the low value asset pooling *rules* in Division 40 of the ITAA 1997 specify a diminishing value rate of 37.5 per cent for low value pools, this rate has been converted to a straight-line depreciation rate to align with the AER's approach.

Although this does not comply with the requirements of the ITAA 1997, which prescribes the diminishing value method, given the use of the same effective life, the rate used is considered appropriate in the circumstances. The 37.5 per cent diminishing value converts to an effective life of four years, and a straight-line depreciation rate of 25 per cent. Using this rate of 25 per cent, these assets would be

fully depreciated by 30 June 2007, and so will not affect the value of assets brought into Aurora's model.

Additions from 1 July 2002 to 30 June 2007 have been extracted from the accounting fixed asset register and so do not contain tax pooling as an asset class. In respect of this period, *Alternative Control Services* assets have been excluded based on their fixed asset class codes.

11.6. Imputation credits

Under clause 6.5.4(g) of the *Rules*, Aurora's Distribution Determination may be inconsistent with the values set out by a SORI, but only if there is persuasive evidence to justify a departure. The value of imputation credits, or gamma that is proposed to apply to Aurora is 0.65, as set out in the SORI for *Regulatory Proposals* submitted to the AER between 1 May 2009 and 1 April 2014.

As discussed in section 9.5.5 of this *Revised Regulatory Proposal*, Aurora has departed from the SORI value and is proposing that a gamma value of 0.25 apply for the purposes of Aurora's *Revised Regulatory Proposal*.

12. Efficiency Benefit Sharing Scheme

12. Efficiency Benefit Sharing Scheme

12.1. Rules requirements

Clause 6.5.8 of the *Rules* provides that the AER must develop an efficiency benefit sharing scheme.

Clause 2.3.2 of the AER's Efficiency Benefit Sharing Scheme (EBSS) sets out that:

- The AER will permit Aurora to propose a range of additional cost categories for exclusion from the operation of the EBSS. These categories must be specific to Aurora, and Aurora must provide an identifiable reason for exclusion, and should not involve an ongoing business activity. Aurora must propose cost categories for exclusion from the EBSS in its *Regulatory Proposal* prior to the commencement of the forthcoming *Regulatory Control Period* during which the EBSS will be applied.
- Aurora must justify a proposal to exclude cost categories to the AER. Aurora must also not seek to exclude categories of costs that could otherwise be regarded as controllable costs, for example, labour and materials costs and service provider costs.

The EBSS also states that proposed adjustments to the forecast operating expenditure will only be accepted by the AER if they are for changes in costs the AER considers are uncontrollable and will not adversely impact the operation of the EBSS.

12.2. AER's Draft Distribution Determination

The AER has accepted the majority of the exclusions proposed by Aurora for the operations of the EBSS. The AER did not accept two of Aurora's proposed exclusions from the EBSS being:

- self insurance costs; and
- trunk mobile radio charges.

12.2.1. Self insurance costs

Aurora does not currently incur, nor expect to incur these costs in the forthcoming *Regulatory Control Period.* Aurora accepts that in the absence of self insurance costs, that there is no requirement to exclude them from the EBSS.

12.2.2. Trunk mobile radio charges

In rejecting trunk mobile radio (TMR) costs in its *Draft Distribution Determination*, the AER stated:

"In addition, Aurora proposed to exclude trunk mobile radio costs from the EBSS. Aurora stated that arrangements for the provision of this service had yet to be finalised and the costs were uncertain and beyond the control of Aurora. However, the AER considers that, absent a legal obligation on Aurora to participate in the trunk mobile radio, the decision to continue to participate and incur costs rests with Aurora. In this way trunk mobile radio costs are controllable and the AER considers they should be included in the EBSS."

Aurora proposes that this cost category be excluded for the purposes of calculating the EBSS.

12.3. Proposed cost exclusions

Consistent with the AER's decision, Aurora agrees that the following cost categories also be excluded for the purposes of calculating the EBSS, being:

- superannuation costs relating to defined benefit and retirement schemes;
- demand management incentive scheme amounts (DMIA);
- expenditure for non-network alternatives;
- recognised pass through events and recognised regulatory change events or service standard events;
- electrical safety inspection levy;
- national energy market levy;
- NEM and retail contestability costs;
- movements in provisions;
- debt raising costs; and
- guaranteed service level payments.

12.4. Additional exclusions

There are a number of cost categories that Aurora considers, by their nature, are beyond the control of Aurora and should be excluded for the purposes of calculating the EBSS. These include costs associated with trunk mobile radio charges.

12.4.1. Trunk mobile radio

Aurora contributes to a joint government department cost of running the trunk mobile radio (TMR) network within Tasmania for emergency services. Arrangements surrounding the provision of this service to all Tasmanian Government agencies have yet to be finalised and costs for the provision of this service still remain uncertain.

This charge is calculated by the Police and Emergency Management Department each financial year and is beyond the control of Aurora.

Aurora provides the contract relating to the TMR network as a confidential attachment to this *Revised Regulatory Proposal*. This contract outlines Aurora's requirements relating to the provision of the TMR.

In light of the existing contract, Aurora proposes that this cost category be excluded for the purposes of calculating the EBSS.

12.5. Forecast operating expenditure for EBSS purposes

Table 62 outlines Aurora's revised operating expenditure forecasts for the purposes of calculating the EBSS for the forthcoming *Regulatory Control Period*.

Table 62

Operating expenditure for EBSS purposes

Aurora's EBSS operating expenditure					
$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Total *Standard Control Services* operating expenditure	72.713	71.599	71.131	70.890	70.175
EBSS exclusion adjustments	10.856	10.858	10.711	10.601	10.485
Total operating expenditure for EBSS purposes	**61.857**	**60.741**	**60.420**	**60.289**	**59.690**

13. Service Target Performance Incentive Scheme

13. Service Target Performance Incentive Scheme

13.1. STPIS objectives

The role of the AER Service Target Performance Incentive Scheme (STPIS) is to provide incentives for Aurora to maintain and improve service performance as set out in the *Rules*.

To that end, the AER STPIS:

(1) defines the performance incentive parameters that measure Aurora's service performance;

(2) sets out the requirements with which the values to be attributed to the parameters must comply;

(3) will be used to decide the service standards financial reward or penalty component of Aurora's Determination; and

(4) provides guidance about the approach the AER will take in reviewing Aurora's service performance.

The AER objectives are that the STPIS:

(a) is consistent with the national electricity objective in the NEL;

(b) is consistent with the *Rules* which require that the AER must take into account:

  (i) the need to ensure that benefits to consumers likely to result from the STPIS are sufficient to warrant any reward or penalty for Aurora;

  (ii) any regulatory obligation or requirement to which Aurora is subject;

  (iii) the past performance of Aurora's network;

  (iv) any other incentives available to Aurora under the *Rules* or a relevant Distribution Determination;

  (v) the need to ensure that the incentives are sufficient to offset any financial incentives Aurora may have to reduce costs at the expense of service levels;

  (vi) the willingness of the customer or end user to pay for improved performance in the delivery of services; and

  (vii) the possible effects of the STPIS on incentives for the implementation of non-network alternatives;

(c) promotes transparency in:

  (i) the information provided by Aurora to the AER; and

  (ii) the decisions made by the AER.

The AER is required by the *Rules* to include a STPIS as a component of a Building Block Determination for the provision of *Standard Control Services*[1] by distributors. To this end, the AER published a Guideline "*Electricity distribution network service providers service target performance incentive scheme*" (the STPIS Guideline), most recently amended in November 2009, describing the formation and application of the STPIS.

In its application of a STPIS, the AER is obliged to consider jurisdictional GSL Schemes and performance targets[2]. The Tasmanian performance standards are contained within the *TEC*[3] and OTTER has noted that the performance standards will not be revised, but that the boundaries of the communities may be reviewed to account for community growth. The jurisdictional GSL Scheme is provided in the GSL Guideline.

13.2. AER's Draft Distribution Determination

In its *Draft Distribution Determination*, the AER has generally accepted Aurora's proposed application of the STPIS Guideline, but:

- applied the standard revenue at risk of ±5 per cent;
- altered Aurora's SAIDI and SAIFI targets; and
- substituted a telephone answering parameter target for the first three years of the forthcoming *Regulatory Control Period* while Aurora collects data with which to set targets for the final two years.

1 *Rules*, Chapter 6, Part C
2 *Rules*, clause 6.6.2
3 *TEC*, clause 8.6.11

13.2.1. Revenue at risk

The AER set the revenue at risk for the non-GSL components of the STPIS to ±5 per cent.

The telephone answering parameter will be capped at:

- revenue at risk to ±0.25 per cent in the first three years; and
- revenue at risk to ±0.5 per cent in the final two years

of the forthcoming *Regulatory Control Period*.

Aurora does not accept the AER's draft determination of revenue at risk for the non-GSL components of the STPIS to be ±5 per cent of the annual allowable revenue.

Aurora notes again that this proportion of annual revenue at risk is significantly larger than previously applied in respect of the Service Incentive Scheme applied by OTTER. OTTER placed 1.25 per cent of Aurora's revenue at risk in the previous *Regulatory Control Period*, with a similar amount of total revenue being placed at risk over the current *Regulatory Control Period*. Aurora considers that an increase of such magnitude does not adequately consider OTTER's considerations of the appropriate revenue at risk when making the 2007 Determination and OTTER's observation that reporting of category and community performance was sufficient to ensure no loss of reliability.

Aurora notes that the current jurisdictional GSL Scheme that the AER proposes to partially implement was designed as a stand-alone Service Incentive Scheme, with an appropriate revenue at risk component[4].

Given that the AER has indicated that it will not retain the two GSL "safety nets", the revenue at risk associated with the GSL Scheme is much greater than intended by OTTER. It is also potentially in excess of the revenue at risk under the impost of the AER's STPIS and the jurisdictional GSL Scheme.

Aurora considers that to recognise this additional revenue risk to Aurora that the revenue at risk associated with the GSL Scheme should also be considered when setting the maximum revenue at risk for the S-factor components of the STPIS.

In particular, Aurora proposes that the revenue at risk attached to the S-factor be adjusted downwards to account for the historical impact of GSL payments under the scheme that was designed as a stand-alone Service Incentive Scheme and set at a value of a maximum of 2.5 per cent of annual revenue.

Aurora considers that the 2.5 per cent would create sufficient incentive to achieve the expected level of reliability for customers, through the combination of the minimum reliability requirements outlined in the *TEC* and the jurisdictional GSL Scheme.

The incentive is enhanced by the AER's decision to align the STPIS reliability targets with the jurisdictional reliability targets.

The alignment creates something of a "stretch target" for Aurora, given that Aurora forecast no capital expenditure for reliability improvements in its *Regulatory Proposal*, coupled with the fact that the AER has determined that it will excise a significant portion from Aurora's forecast capital expenditure for works that it considers to be reliability-related.

4 Investigation of Prices for Electricity Distribution Services and Retail Tariffs on Mainland Tasmania, Final Report and Proposed Maximum Prices, September 2007, page 233

Aurora considers that the 2.5 per cent revenue at risk would balance the inherent asymmetry introduced into the STPIS by the alignment of the jurisdictional and STPIS performance targets whilst reducing significantly the available capital expenditure to perform the work to meet those targets.

13.2.2. Calculation of performance

The AER stated that:

> *"Aurora has proposed to weight its SAIDI and SAIFI numbers by kVA capacity (embedded transformer capacity) as an approximation to the number of customers."*

This is an incorrect assessment of Aurora's methodology. Aurora will be using installed transformer capacity in kVA *in place of* customer numbers in calculating SAIDI and SAIFI.

This approach is in line with jurisdictional regulatory precedent.

13.2.3. Incentive rates

The AER set the incentive rates for the STPIS to apply to Aurora for the forthcoming *Regulatory Control Period* in accordance with the AER's STPIS Guideline.

Aurora has also calculated these incentive rates as per the AER's STPIS Guideline, using the inputs described in the remainder of this chapter.

13.2.4. Performance targets

The AER has accepted the performance targets proposed by Aurora, however made further modifications to the performance targets to reflect, at a minimum, the mandated *TEC* reliability standards.

Aurora proposed SAIDI and SAIFI targets which included modifications to address the effects of works undertaken in the current *Regulatory Control Period*. The AER recalculated SAIDI and SAIFI targets, based upon data supplied by Aurora and further modified them.

The AER's rationale for these further modifications are:

> *"Aurora has proposed adjustments to the STPIS targets for Targeted Reliability Improvement Projects (TRIPs). These are for reliability improvement programs that Aurora has undertaken in the current period. The AER has accepted these adjustments as they represent the effect of projects that Aurora was funded to deliver in the previous period.*
>
> *However, the AER considers further adjustments are required because these adjustments do not fully account for the performance improvements that Aurora proposed to undertake. Aurora has adjusted its performance targets so that the targets reflect the historical trend in reliability improvement. This method does not reflect the projects allowed by OTTER to deliver new reliability standards. Though the historical trend goes some way to ensuring that the STPIS targets reflect new reliability standards, in a few of instances the targets are higher than would be expected if Aurora complied with the reliability standards. This is because Aurora's historical average*

performance is below the TEC reliability standards in some instances. Where the historical performance has been below the TEC reliability standards, the AER has made an adjustment so the targets reflect performance at the level of the performance standards, and not below them. For this reason the performance targets are consistent with the TEC standards and the capital allowance in Aurora's previous regulatory determination."

Aurora further notes that, in the current *Regulatory Control Period* Aurora proposed capital expenditure for a range of projects to address reliability, specifically with the intention of meeting the *TEC* standards.

In its 2007 Final Decision, OTTER determined that the capital expenditure was appropriate in cost and scope[5]. The projects designed to address reliability were completed, ahead of expected time. The expected reliability improvements resulting from these projects were incorporated into the reliability targets proposed by Aurora in its *Regulatory Proposal*.

The comment by the AER that:

"This method does not reflect the projects allowed by OTTER to deliver new reliability standards"

is incorrect. The projects allowed by OTTER were discrete projects with measurable outcomes.

Due to the nature of reliability reporting, the full effect of a reliability project is not evident until the end of the first full year after the completion of the project.

Aurora has considered this when applying the expected corrections to the STPIS targets to account for reliability improvements resulting from works in the current *Regulatory Control Period*. Aurora did not, as claimed by the AER, adjust "...its performance targets so that the targets reflect the historical trend in reliability improvement."

Any variation between the expected outcomes of the reliability works forecast in 2006 and the actual system performance in the present day are due to errors in forecasting and the variation in the reliability of the other 270+ feeders that were not subject to intensive reliability upgrades and yet contributed to the reliability indices.

Despite these comments, Aurora agrees with the objectives of the scheme, and does not seek an undue reward at the expense of Aurora's customers. Accordingly, Aurora accepts the AER's approach to adjusting its reliability targets to account for jurisdictional reliability targets.

Aurora notes, however, that the AER appears to have made a coding error in its spreadsheet, and has used data from two different sources with differing exclusions. Aurora provides a spreadsheet containing Aurora's amendments to address these issues as an attachment to this *Revised Regulatory Proposal*.

13.2.5. Major Event Day threshold

In its *Draft Distribution Determination*, the AER determined the MED threshold to be 9.09 minutes.

Aurora has accepted the AER's proposal for MEDs.

13.3. Telephone answering

The AER's performance target for the telephone answering parameter is 73.6 per cent for the first three years of the forthcoming *Regulatory Control Period*. This target is based on data for other, ostensibly comparable, DNSPs.

Aurora accepts the AER's parameter for telephone answering for the first three years of the forthcoming *Regulatory Control Period*.

The AER has determined that the incentive rate for the telephone answering parameter of the Service Target Performance Incentive Scheme was to be 0.040 per cent per unit of the telephone answering parameter[6].

Clause 5.3.2(a) of the AER's STPIS Guideline states that:

"Unless the AER decides otherwise, the incentive rate for the 'telephone answering' parameter must be either:

(1) –0.040% per unit of the 'telephone answering' parameter, or

(2) a value determined from an applicable assessment of the value that customers attribute to the level of service proposed."

Based upon the similarity of the "0.040" in the AER's *Draft Distribution Determination* and the "–0.040" in the AER's STPIS Guideline for the same parameter, Aurora has assumed the value of -0.040 as expressed in the AER's STPIS Guideline for the telephone answering parameter.

13.4. Aurora proposed scheme

13.4.1. Introduction

The principles of the STPIS proposed by Aurora are discussed below.

13.4.2. Reliability of supply component – network segmentation

Aurora understands the AER's approach to network segmentation to mean that each of the five categories listed in Table 3 of Chapter 8 of the *TEC* (Critical Infrastructure, High Density Commercial, Urban and Regional Centres, High Density Rural, and Lower Density Rural) is considered to be a distinct segment. In consequence, each category will have its own series of SAIDI and SAIFI targets based upon appropriate historical reliability data. Aurora supports the AER's proposed approach to network segmentation.

13.4.3. Reliability of supply component – calculation methodology

The reliability of supply component of the STPIS proposed by the AER is intended to use unplanned SAIDI and SAIFI as the parameters. Further, Appendix A of the STPIS Guideline requires that SAIDI and SAIFI be calculated using customer numbers. Aurora is unable to adequately meet this requirement.

5 2007 Final Decision, page 105

6 Draft Distribution Determination Aurora Energy November 2011, Sect 12.1.3, page 269

Aurora's current reliability reporting system monitors outages down to transformer level; that is, the system can identify whether a transformer has experienced an outage and the duration of that outage. The capacity of the transformer (in kVA) is then used in the reliability calculations in conjunction with the outage data. Additionally, the number of customers affected by a transformer outage is generally estimated from the capacity of the transformer assuming that a customer has certain, standard demand. Using this kVA approach, Aurora can confidently provide an outage history back to 2004. On this basis, Aurora proposes that the kVA approach to calculating the SAIDI and SAIFI analogues be continued.

13.5. Incentive rates

Clause 3.2.2 of the STPIS Guidelines sets out a methodology for developing incentive rates. Aurora accepts this methodology.

13.5.1. Incentive rate calculation

The calculation for unplanned SAIDI within the STPIS Guideline at clause 3.2.2(h) requires that the incentive rate is calculated by:

(1) multiplying the portion of VCR assigned to the unplanned SAIDI (in $/MWh) by the average annual energy consumption by network type (in MWh) expected for the forthcoming *Regulatory Control Period*;

(2) dividing by the average of the smoothed Annual Revenue Requirement for the forthcoming *Regulatory Control Period* (in $, real referenced to the first *Regulatory Year* of the *Regulatory Control Period*) as determined by the AER in the relevant Distribution Determination; and

(3) dividing by the average number of minutes in a *Regulatory Year*.

The calculation for unplanned SAIFI within the STPIS Guideline at clause 3.2.2(i) requires that the incentive rate is calculated by:

(1) multiplying the portion of VCR assigned to the unplanned SAIFI (in $/MWh) by the average annual energy consumption by network type (in MWh) expected for the forthcoming *Regulatory Control Period*;

(2) dividing by the average of the smoothed Annual Revenue Requirement for the forthcoming *Regulatory Control Period* (in $, real referenced to the first *Regulatory Year* of the *Regulatory Control Period*) as determined by the AER in the relevant Distribution Determination;

(3) dividing by the average number of minutes in the relevant *Regulatory Year;* and

(4) multiplying by the average of the annual performance targets for unplanned SAIDI in the forthcoming *Regulatory Control Period* and dividing by the average of the annual performance targets for unplanned SAIFI in the forthcoming *Regulatory Control Period*.

Average annual energy consumption

Aurora has determined the annual energy consumption for the *Regulatory Control Period* by examining the measured annual energy in the 2009-10 financial year and applying the proportion of consumption for each network type to the forecast annual energy consumption for the forthcoming *Regulatory Control Period*, as shown in Table 63.

Table 63

Average annual energy consumption

Parameter segment	Average annual energy consumption (MWh)
Critical Infrastructure	158,615
High Density Commercial	225,470
Urban and Regional Centres	2,975,455
High Density Rural	767,450
Lower Density Rural	558,129

Average smoothed annual revenue requirement

The STPIS Guideline requires that the average of the smoothed Annual Revenue Requirement for the forthcoming *Regulatory Control Period* (in $ real, referenced to the first *Regulatory Year* of the *Regulatory Control Period*) is utilised in calculating the incentive rate.

Aurora's calculation of its annual revenue requirement is detailed in chapter 17 of this *Revised Regulatory Proposal*. Aurora proposes an average smoothed Annual Revenue Requirement for the forthcoming *Regulatory Control Period* of $293.054 million as shown in Table 64.

Table 64

Annual revenue requirement

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2016-16 ($m)	2016-17 ($m)
Notional Building Block smoothed revenue	284.731	290.425	295.653	300.383	294.075
Average smoothed revenue	293.054				

13.5.2. Incentive rates

Utilising the algorithms prescribed within the STPIS Guideline Aurora has calculated the incentive rates to apply in the forthcoming *Regulatory Control Period* as shown in Table 65.

Table 65

Incentive rates

Parameter Segment		Incentive Rate
SAIDI	Critical Infrastructure	0.0057
	High Density Commercial	0.0081
	Urban and Regional Centres	0.0497
	High Density Rural	0.0125
	Lower Density Rural	0.0091
SAIFI	Critical Infrastructure	0.4857
	High Density Commercial	0.5580
	Urban and Regional Centres	4.2699
	High Density Rural	1.3886
	Lower Density Rural	1.1548

13.6. Exclusions

Aurora accepts the AER's proposed exclusions from the operations of the STPIS.

13.7. Setting the targets

Aurora is not proposing any specific capital investment aimed at substantive improvements in reliability in the forthcoming *Regulatory Control Period*. Aurora therefore proposes targets based on the average performance over the past five *Regulatory Years*, modified by the remaining reliability improvement program (2010-11 and 2011-12) within the current *Regulatory Control Period* as per the methodology proposed in clause 3.2.1(a) of the STPIS Guideline.

Aurora's SAIDI STPIS targets for the forthcoming *Regulatory Control Period* are shown in Table 66.

Table 66

SAIDI STPIS targets

SAIDI	Forecast target				
Parameter segment	**2012-13 (mins)**	**2013-14 (mins)**	**2014-15 (mins)**	**2015-16 (mins)**	**2016-17 (mins)**
Critical Infrastructure	20.79	20.79	20.79	20.79	20.79
High Density Commercial	38.34	38.34	38.34	38.34	38.34
Urban and Regional Centres	84.04	84.04	84.04	84.04	84.04
High Density Rural	272.74	272.74	272.74	272.74	272.74
Lower Density Rural	363.94	363.94	363.94	363.94	363.94

Aurora's SAIFI STPIS targets for the forthcoming *Regulatory Control Period* are shown in Table 67.

Table 67

SAIFI STPIS targets

SAIFI	Forecast target				
Parameter segment	**2012-13 (int)**	**2013-14 (int)**	**2014-15 (int)**	**2015-16 (int)**	**2016-17 (int)**
Critical Infrastructure	0.22	0.22	0.22	0.22	0.22
High Density Commercial	0.49	0.49	0.49	0.49	0.49
Urban and Regional Centres	1.01	1.01	1.01	1.01	1.01
High Density Rural	2.66	2.66	2.66	2.66	2.66
Lower Density Rural	3.11	3.11	3.11	3.11	3.11

13. Service Target Performance Incentive Scheme

14. Cost pass through – additional pass through events

14. Cost pass through – additional pass through events

14.1. Rules requirements

Chapter 10 of the *Rules* provides that any of the following is a pass through event:

- a regulatory change event;
- a service standard event;
- a tax change event; and
- a terrorism event.

The definition of "pass through event" also states that "An event nominated in a Distribution Determination as a pass through event is a pass through event for the Determination (in addition to those listed above)".

This means that Aurora is free to nominate additional events to the four specified in Chapter 10 to the extent that it feels that additional events would be relevant to its specific circumstances.

Clause S6.1.3 of the *Rules* states that Aurora's Building Block Proposal must contain certain additional matters. Clause S6.1.3.2 provides that one of these must be "a proposed pass through clause with a proposal as to the events that should be defined as pass through events".

Clause 6.12.1 states that the AER's Distribution Determination must contain a number of constituent decisions. Clause 6.12.1.14 states that one of these constituent decisions is "a decision on the additional pass through events that are to apply for the *Regulatory Control Period*".

This means that Aurora is required to propose any additional pass through events that are to apply in the forthcoming *Regulatory Control Period* and the AER must consider and make a constituent decision on this proposal as part of the Determination.

14.2. AER's Draft Distribution Determination

14.2.1. Pass through events

The AER accepted three of Aurora's nine proposed pass through events as the AER considers they satisfy the pass through criteria. The AER commented that, in respect of a:

- Natural disaster event: These events tend to be infrequent, but can be high cost. The AER recognises that there is some potential overlap with other allowances or events such as liability above insurance cap. However, it will consider any specific cost claim under the most appropriate event and ensure it is not double-counted.
- Insurer credit risk event: This event involves increases in Aurora's insurance costs as a result of its nominated insurer's insolvency.
- Liability above insurance cap event: The above-cap losses tend to be low probability, potentially high cost risks. Aurora can optimise its risk management by designing its network and externally insuring to a certain level of risk. Under this approach, it is more efficient to leave uninsured some losses which are below the deductible threshold or above the insurance cap.

The AER considered that Aurora's six remaining proposed pass through events may be recovered under other pass through events (including the three nominated above) or other mechanisms. These are discussed below:

- Bushfires event: Aurora proposed a bushfires event separately from the natural disaster event because it considers some fires, such as those caused by arson, may not be considered natural disasters. The AER considers a specific new event for bushfires is not necessary. Small fires can be covered by operating or capital expenditure allowances including insurance and self insurance, or the costs absorbed within the materiality threshold. The AER considers that major bushfires could qualify under Aurora's definition of natural disaster event, regardless of whether they were initiated by humans. Very large fires could also involve costs above the insurance cap and thus qualify for the liability above insurance cap event.
- Storms event: The AER considers a specific new event for storms is not necessary, for similar reasons as for bushfires. Smaller more frequent storms can be covered by components of operating or capital expenditure, or minor costs absorbed within the materiality threshold. The AER considers major storms could qualify under either the natural disaster event (as 'other natural disaster') or the liability above insurance cap event.
- Industry restructure event: The Tasmanian Government is reviewing the electricity industry, which could result in separation of Aurora's businesses, with associated cost movements for Aurora. If such a restructure occurs, the AER considers that it could be covered by one of the prescribed pass through events; either a regulatory change event or a service standard event.
- Declared retailer of last resort (RoLR) event: When an electricity retailer fails, a DNSP could incur costs when customers of the failed retailer are transferred to the declared RoLR. Under the new National Energy Retail Law, the AER may determine payments that DNSPs are required to make to the RoLR to allow it to recover its RoLR scheme costs. The Law provides for the DNSP to recover such payments as pass through amounts. Further, the National Electricity (Retail Support) Amendment Rules 2010 introduce a new pass through event, a 'retailer insolvency event', through which a DNSP could recover the costs associated with unpaid distribution charges by an insolvent retailer. The AER considers RoLR costs can be recovered through these mechanisms, and other related costs may be recoverable under existing mechanisms.
- Carbon price event: The Australian Government's Clean Energy Legislative Package was passed by Parliament on 8 November 2011. Under this legislation, a fixed carbon price will commence on 1 July 2012, and transition on 1 July 2015 to a flexible price set by the market under an emissions trading scheme (ETS). The AER considers this carbon pricing mechanism could be covered by one of the prescribed pass through events; regulatory change event, service standard event or tax change event.
- Feed-in tariff event: Aurora offers, on a voluntary basis, a feed-in tariff through its net metering buyback scheme. The Tasmanian Government has a declared policy of mandating a feed-in tariff based on a net metering scheme, but has not legislated to implement this policy. The NER now provides a mechanism for DNSPs to recover payments made under approved jurisdictional schemes. If a feed-in tariff is established under Tasmanian law and is determined to be a jurisdictional scheme, Aurora could recover payments under the tariff through the new NER mechanism.

14.2.2. Materiality threshold

The AER did not accept Aurora's proposal of no threshold for the insurer credit risk event, and intends to apply a materiality threshold of 1 per cent of forecast revenue to all nominated events.

Aurora accepts the materiality threshold of 1 per cent applied to pass through events accepted by the AER.

14.3. Pass through events

Aurora seeks further clarification from the AER for the following additional pass through events for the forthcoming *Regulatory Control Period*:

- bushfires event;
- storms event;
- industry restructure event;
- retailer of last resort event; and
- carbon price event.

Aurora understands that the AER has most likely accepted these pass through events but seeks clarification that they are indeed covered by other recognised events:

14.3.1. Bushfires event

Aurora proposed a pass through arrangement for a "bushfire event". The definition of the bushfire event was:

> *Any bushfire beyond the control of Aurora that occurs during the forthcoming Regulatory Control Period and materially increases the costs to Aurora of providing Direct Control Services.*

The AER has determined that a bushfire event 'could' be covered under either Aurora's definition of a natural disaster event or very large fires 'could' qualify under the liability above insurance cap event. Aurora seeks clarification from the AER that a bushfires event is covered by a:

- natural disaster event; and/or
- liability above insurance cap event.

14.3.2. Storms event

Aurora proposed a pass through arrangement for a "storms event". The definition of the storm event was:

> *Any storm beyond the control of that occurs during the forthcoming Regulatory Control Period and materially increases the costs to Aurora of providing Direct Control Services.*

The AER has determined that a storms event could qualify under either Aurora's definition of a natural disaster event or major storms 'could' qualify under the liability above insurance cap event. Aurora seeks clarification from the AER that a storm event is covered by a:

- natural disaster event; and/or
- liability above insurance cap event.

14.3.3. Industry restructure event

The Tasmanian Government has commenced a formal review into the electricity industry. The costs of any business separation are not included in this *Regulatory Proposal*. Aurora proposed that a specific pass through mechanism be established by the AER which would be triggered at the time the Tasmanian Government implements any future decision within the forthcoming *Regulatory Control Period*.

The range of possible industry restructure event outcomes include:

- no change to the structure of Aurora. This is the basis upon which Aurora's *Regulatory Proposal* has been developed;
- separation of Aurora's distribution and energy businesses into two separate businesses. This would involve costs for Aurora distribution to establish its own unique systems and corporate overheads which would require a pass through of costs; or
- separation of Aurora's distribution and energy businesses into two separate businesses, and the subsequent merger of Aurora's distribution business with Transend to form a single network company. This would involve a range of business and system integration costs for Aurora, but it is possible that it may result in reductions in operating costs over the longer term.

The definition of the industry restructure event was:

> *An industry restructure event is any legislative or administrative act or decision to separate any business or function of Aurora in whole or in part from any other business or function of Aurora, or to combine any business or function of Aurora in whole or in part with the business unit of any other entity, which materially increases or decreases the costs to Aurora of providing Standard Control Services.*

The AER has determined that any industry restructure event could qualify under either a regulatory change event or a service standard event. Aurora seeks clarification from the AER that any industry restructure event is covered by a:

- regulatory change event; and/or
- service standard event.

14.3.4. Retailer of Last Resort event

Aurora proposed a pass through arrangement for a "declared Retailer of Last Resort (ROLR) event". The definition of the ROLR event was:

> *Any event where an existing retailer for distribution customers is unable to continue to supply electricity and its customers are transferred to the declared Retailer of Last Resort that occurs during the forthcoming Regulatory Control Period that materially increases the costs to Aurora of providing Direct Control Services.*

The AER has determined that a Retailer of Last Resort (RoLR) event can be recoverable being a 'retailer insolvency event' under the National Electricity (Retail Support) Amendment *Rules* 2010 and other related costs 'may' be covered under existing mechanisms. Aurora seeks clarification from the AER in relation to its determination, that a RoLR event and other related costs are covered by the existing retailer insolvency event.

14.3.5. Carbon price event

Aurora proposed that a specific pass through mechanism be established by the AER should the Australian Government implement any future decision subsequent to the AER's final Determination or within the forthcoming *Regulatory Control Period*.

The definition of the carbon price event was:

> *Any legislative or administrative act or decision to impose a price or tax upon carbon, which increases or decreases the costs to Aurora of providing Direct Control Services.*

The AER has determined that a carbon price event could be covered under prescribed pass through events being either a regulatory change event, a service standard event or tax change event. Aurora seeks clarification from the AER that a carbon price event is covered by a:

- regulatory change event;
- service standard event; and/or
- tax change event.

14. Cost pass through – additional pass through events

15. Capital contributions

15. Capital contributions

15.1. Rules requirements

Clause 6.21 of the *Rules* details the circumstances in which Aurora may minimise financial risks associated with investment in network assets and provides for adoption of cost reflective payment options in conjunction with the use of average distribution prices. In particular:

- clause 6.21.2(2) provides that Aurora may receive a capital contribution, prepayment and/or financial guarantee up to Aurora's future revenue related to the provision of *Direct Control Services* for any new assets installed as part of a new connection or modification to an existing connection, including any augmentation to the distribution network; and
- clause 6.21.2(3) provides that where assets have been the subject of a contribution or prepayment, Aurora must amend its revenue related to the provision of direct control services.

15.2. Aurora's capital contributions methodology

Aurora's Customer Capital Contributions Policy has been revised to ensure that it will provide an appropriate allocation of costs between connecting customers and users of the shared distribution network. The review results in a customer contributions policy that reflects the efficient cost of providing new connection services and ensures greater equity between customer classes. The review also ensures that Aurora's customer contribution policy is reflective and consistent with the distribution business' revised strategy and the intent of the NECF, which is expected to commence from 1 July 2012.

This amended policy results in customers contributing an efficient amount for the provision of distribution services that are provided solely for the connecting customer. This policy change results in customers contributing to their connection assets at the time of connection, rather than providing Aurora a revenue stream through the application of the customer's tariff. This policy also ensures that existing customers are not funding the dedicated connection assets of other customers through the 'shared network' tariffs.

Aurora has included its revised Customer Capital Contributions Policy as an attachment to this *Revised Regulatory Proposal*.

15.2.1. Gifted assets

Aurora currently provides all construction services for the provision of its assets and therefore does not have any assets that are gifted to it by other providers, such as the developers of residential subdivisions. Aurora considers that this practice will remain for the duration of the forthcoming *Regulatory Control Period*.

15.3. AER's Draft Distribution Determination

The AER's *Draft Distribution Determination* considered Aurora's customer capital contributions were overstated on the basis that forecast connections volumes were also overstated. The AER stated:

> *"Since the AER considers that Aurora's forecasts of connections volumes are overstated, it follows that Aurora's proposed capital contributions are also overstated."*[1]

The AER's revised forecast for capital contributions used the same average contribution per connection as proposed by Aurora and applied the AER's revised forecast of connection volumes, resulting in a $20.7 million decrease in capital contributions over the forthcoming *Regulatory Control Period*.

1 Draft Distribution Determination Aurora Energy November 2011, Sect 5.4.2, p. 133.

Table 68 shows the AER's proposed capital contributions with substituted volumes compared to Aurora's proposal.

Table 68

Summary of AER's Draft Distribution Determination – Capital Contributions

$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Aurora proposed	18.711	18.711	18.711	18.711	18.711
AER draft determination	14.409	15.088	14.959	14.318	14.015

Aurora has reviewed the AER's *Draft Distribution Determination* and based on the revised customer connections volumes accepts the proposed forecasts should be amended to reflect revised forecast connection volumes.

15.4. Forecast capital contributions for the forthcoming Regulatory Control Period

Aurora's actual and estimated capital contributions for the forthcoming *Regulatory Control Period*, are shown in Table 69.

Table 69

Aurora's Forecast Capital Contributions

$2009-10	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Cash contributions	14.409	15.088	14.959	14.318	14.015
Gifted assets	-	-	-	-	-
Total	**14.409**	**15.088**	**14.959**	**14.318**	**14.015**

15.5. Allocating capital contributions to asset classes

When Aurora constructs assets that are funded by cash contributions, it separates them into the relevant asset categories in its asset register. These assets are in turn reflected into the different asset classes of Aurora's RAB, which is used for the purposes of the AER's RFM and the PTRM.

15.6. Adjustments to revenues to recognise capital contributions

As discussed above, Aurora does not fully fund assets that relate to capital contributions. Rather, they are funded by a cash payment to Aurora from customers or developers.

As Aurora includes the value of all assets funded by capital contributions in its RAB, there is a need to reduce Aurora's revenues in order to ensure that it does not recover the value of the capital contribution twice.

Aurora deals with this matter by:

- incorporating the full construction cost of the assets into its RAB in the *Regulatory Year* in which the capital contribution is received; and
- also deducting the full value of the capital contribution from Aurora's RAB in the *Regulatory Year* in which the capital contribution is received.

This treatment results in only the net value of assets being included in Aurora's RAB. This can be expressed as:

(construction cost) – (capital contribution) = (net asset value).

As assets that are funded by customer contributions are included in Aurora's RAB at net value (fully funded assets will have a nil net value), Aurora does not receive additional revenues from these assets in the application of the AER's RFM and PTRM.

16. X factor

16. X factor

16.1. Rules requirements

Clause 6.5.9(a) states that "A Building Block Determination is to include the X factor for each control mechanism for each *Regulatory Year* of the *Regulatory Control Period*".

Clause 6.5.9(b) states that the X factor:

(1) must be set by the AER with regard to Aurora's total revenue requirement for the *Regulatory Control Period*;

(2) must be such as to minimise, as far as reasonably possible, variance between expected revenue for the last *Regulatory Year* of the *Regulatory Control Period* and the annual revenue requirement for that last *Regulatory Year*; and

(3) must conform with whichever of the following requirements is applicable:

  (i) if the control mechanism relates generally to *Standard Control Services* – the X factor must be designed to equalise (in terms of net present value) the revenue to be earned by Aurora from the provision of *Standard Control Services* over the *Regulatory Control Period* with Aurora's total revenue requirement for the *Regulatory Control Period*; and

  (ii) if there are separate control mechanisms for different *Standard Control Services* – the X factor for each control mechanism must be designed to equalise (in terms of net present value) the revenue to be earned by Aurora from the provision of *Standard Control Services* to which the control mechanism relates over the *Regulatory Control Period* with the portion of the provider's total revenue requirement for the *Regulatory Control Period* attributable to those services.

16.2. AER's Draft Distribution Determination

The AER has applied the requirements of the NEL and NER and smoothed Aurora's annual revenue requirement. The AER has noted that a divergence of up to 3 per cent between the expected and annual revenue requirement for the last year of the forthcoming *Regulatory Control Period* is consistent with the NER. In its *Draft Distribution Determination* the AER has proposed a divergence of 1.4 per cent in the final year.

Aurora is concerned about the impact of price increases on its customers that may arise from any significant P_0 adjustment. Aurora considers that the AER should adopt a smoothing mechanism that will spread the impact of the *Final Distribution Determination* over the full five years of the *Regulatory Control Period*. This mechanism should seek to avoid any one-off step change for customers, particularly in a year where customers will also be seeing the impact of the Commonwealth Government's carbon price.

16.3. Aurora's proposed X factors

Aurora has not varied the ordinary operation of the AER's PTRM and has used the formula included in the PTRM to establish the X factors for *Standard Control Services*. In accordance with clause 6.5.9(b)(3)(i), it has designed its X Factors to equalise (in terms of net present value) the revenue to be earned from the provision of *Standard Control Services* over the forthcoming *Regulatory Control Period* with Aurora's total revenue requirement for the *Regulatory Control Period*.

In accordance with clause 6.5.9(b)(2), Aurora has minimised, as far as reasonably possible, the variance between expected revenue for the last *Regulatory Year* of the forthcoming *Regulatory Control Period* and the annual revenue requirement for that last *Regulatory Year*. The variance is 1.0 per cent.

The resulting X factors for each year of the forthcoming *Regulatory Control Period* are set out in Table 70.

16. X factor

Table 70

X Factors

	2012-13	2013-14	2014-15	2015-16	2016-17
X factor (%)	(7.67)	(2.00)	(1.80)	(1.60)	2.10

The application of these X factors results in the smoothed revenue requirement for the forthcoming *Regulatory Control Period* as set out in Table 71.

Table 71

Smoothed revenue outcomes

Nominal dollars	Total NPV ($m)	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Adjusted notional Revenue	**1,164.569**	292.245	303.002	309.834	313.512	323.057
Smoothing	**-**	(7.514)	(4.927)	1.599	11.238	3.248
Smoothed building block revenue	**1,164.569**	284.731	298.075	311.433	324.750	326.305
Variance	**-**	(2.6%)	(1.6%)	0.5%	3.6%	1.0%

17. Annual revenue requirement

17. Annual revenue requirement

17.1. Rules requirements

Clause 6.3.2(a)(1) of the *Rules* requires the AER to specify in its Building Block Determination Aurora's annual revenue requirement (ARR) for each *Regulatory Year* of the forthcoming *Regulatory Control Period*.

Clause 6.12.1(2)(i) of the *Rules* provides that one of the constituent decisions of the AER's Distribution Determination is whether to approve, or not to approve, the ARR for each *Regulatory Year* of the *Regulatory Control Period*, as set out in the Aurora's Building Block Proposal.

In accordance with clause 6.4.2(a) of the *Rules*, the PTRM sets out the manner in which Aurora's ARR for each *Regulatory Year* of the forthcoming *Regulatory Control Period* is to be calculated.

Clause 6.12.3(d) of the *Rules* provides that the AER must approve Aurora's ARR for each *Regulatory Year* of the forthcoming *Regulatory Control Period*, as set out in Aurora's Building Block Proposal, if the AER is satisfied that the amounts have been calculated using the PTRM on the basis of amounts calculated, determined or forecast in accordance with the requirements of Part C of Chapter 6 of the *Rules*.

Clause 6.4.3(a) of the *Rules* provides that Aurora's ARR for each *Regulatory Year* of the forthcoming *Regulatory Control Period* must be calculated using a Building Block approach, under which the building blocks are:

- the indexation of the RAB, calculated in accordance with clause 6.4.3(b)(1) of the *Rules*;
- a return on capital for that *Regulatory Year*, calculated in accordance with clause 6.4.3(b)(2) of the *Rules*;
- the depreciation for that *Regulatory Year*, calculated in accordance with clause 6.4.3(b)(3) of the *Rules*;
- the estimated cost of corporate income tax for that *Regulatory Year*, calculated in accordance with clause 6.4.3(b)(4) of the *Rules*;
- the revenue increments or decrements (if any) for that *Regulatory Year* arising from the application of the EBSS, STPIS and DMIS, calculated in accordance with clause 6.4.3(b)(5) of the *Rules*;
- the other revenue increments or decrements (if any) for that *Regulatory Year* arising from the application of a control mechanism in the current *Regulatory Control Period*, calculated in accordance with clause 6.4.3(b)(6) of the *Rules*; and
- the forecast operating expenditure for that *Regulatory Year*, calculated in accordance with clause 6.4.3(b)(7) of the *Rules*.

17.2. AER's Draft Distribution Determination

In its *Draft Distribution Determination* the AER has accepted most of Aurora's *Regulatory Proposal* as being consistent with the NER, however the AER has not accepted all elements of Aurora's *Regulatory Proposal*. For this reason, the AER's proposed ARR differ from Aurora's *Regulatory Proposal* by $266.2 million ($nominal).

17.3. Aurora's ARR

Aurora confirms that it has prepared its ARR for each *Regulatory Year* of the forthcoming *Regulatory Control Period* in accordance with the requirements of Part C of Chapter 6 of the *Rules*, in particular by applying the:

- PTRM established by the AER under clause 6.4 of the *Rules*; and
- Building Block approach provided for by clause 6.4.3 of the *Rules*.

Aurora has provided a completed PTRM and a completed RFM to the AER with this *Revised Regulatory Proposal*. Aurora's demonstration of the application of the models in calculating the ARR, including the assumptions it has made in populating the models, are shown in the models or this *Revised Regulatory Proposal*.

Aurora's revised ARR (smoothed) for the forthcoming *Regulatory Control Period* is shown in Table 72.

Table 72

Annual Revenue Requirement

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Annual smoothed revenue	284.73	298.08	311.43	324.75	326.31

The building blocks that comprise the ARR are discussed in the following sections.

17.3.1. Establishing the RAB

Aurora has been required to make a number of adjustments to the 1 January 2008 RAB value of $981.108 million (July 2006 dollars) specified in schedule 6.2.1(c)(1) of the *Rules*. Aurora's revised opening RAB for each year requiring an adjustment is shown in Table 73.

Table 73

Opening Regulatory Asset Base

Nominal dollars	2006-07 ($m)	2007-08 ($m)	2008-09 ($m)	2009-10 ($m)	2010-11 ($m)	2011-12 ($m)
Opening RAB – 1 July	908.20	984.14	1,072.60	1,157.87	1,270.79	1,385.95

Aurora has calculated the proposed opening RAB for the forthcoming *Regulatory Control Period* by applying the methodology set out in schedule 6.2 of the *Rules* and the AER's RFM. A detailed explanation of the basis of Aurora's calculation is provided in chapter 8 of this *Revised Regulatory Proposal*.

17.3.2. Indexation of the RAB

Aurora's proposed opening RAB for *Standard Control Services* for each *Regulatory Year* of the forthcoming *Regulatory Control Period* is shown in Table 74.

Table 74

Opening Regulatory Asset Base

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Opening RAB – 1 July	1,474.59	1,560.23	1,640.38	1,718.51	1,807.50

Aurora has calculated the proposed opening RAB for each *Regulatory Year* of the forthcoming *Regulatory Control Period* by applying the AER's RFM. A detailed explanation of the basis of Aurora's calculation is provided in chapter 8 of this *Revised Regulatory Proposal*.

As required by clause 6.4.2(b)(1) of the *Rules*, Aurora has indexed its RAB utilising its best estimates of expected inflation:

- from the current *Regulatory Control Period* to the beginning of the first *Regulatory Year* of the forthcoming *Regulatory Control Period*, in accordance with clause 6.5.1(e)(3) of the *Rules*; and
- between each *Regulatory Year* of the next *Regulatory Control Period*.

Aurora has applied the AER's preferred methodology for calculating actual inflation and the RBA's November 2011 Statement on Monetary Policy forecasts for 2011-12 and 2012-13 annual inflation for indexation of the RAB for the current *Regulatory Control Period*. For the forthcoming *Regulatory Control Period*, Aurora has proposed an annual inflation rate of 2.63 per cent.

An explanation of the basis of the calculation of annual inflation in the forthcoming *Regulatory Control Period* is provided in chapter 2 of this *Revised Regulatory Proposal*.

17.3.3. Return on capital

Aurora's proposed return on capital for *Standard Control Services* for each *Regulatory Year* of the forthcoming *Regulatory Control Period* is shown in Table 75.

Table 75

Return on capital

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Return on capital	143.21	151.53	159.32	166.90	175.55

In accordance with clause 6.5.2(b) of the *Rules*, the rate of return is the cost of capital as measured by the return required by investors in a commercial enterprise with a similar nature and degree of non-diversifiable risk as that faced by Aurora.

Aurora has calculated the proposed return on capital for each *Regulatory Year* of the forthcoming *Regulatory Control Period* by applying the AER's PTRM. Aurora has determined the proposed return on capital by applying a rate of return to the value of the RAB as at the beginning of the *Regulatory Year* in accordance with clause 6.5.2(a) of the *Rules*.

A detailed explanation of the basis of the calculation of the rate of return on capital is provided in chapter 9 of this *Revised Regulatory Proposal*.

17.3.4. Regulatory depreciation

Aurora's proposed regulatory depreciation for *Standard Control Services* for each *Regulatory Year* of the forthcoming *Regulatory Control Period* is shown in Table 76.

Table 76

Regulatory depreciation

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Return of capital (regulatory depreciation)	48.34	49.44	47.28	41.42	40.99

Aurora has calculated the proposed regulatory depreciation for each *Regulatory Year* of the forthcoming *Regulatory Control Period* by applying the AER's PTRM and RFM.

In accordance with clause 6.5.5(a) of the *Rules*, Aurora has determined the proposed regulatory depreciation for each *Regulatory Year* of the forthcoming *Regulatory Control Period*:

- based on the revised value of the assets as included in the RAB, as at the beginning of the *Regulatory Year*; and
- by preparing revised regulatory depreciation schedules that conform with the requirements of clause 6.5.5(b) of the *Rules*.

A detailed explanation of the basis of the calculation of the regulatory depreciation is provided in chapter 10 of this *Revised Regulatory Proposal*.

17.3.5. Corporate income tax

Aurora's revised estimated cost of corporate income tax for *Standard Control Services* for each *Regulatory Year* of the forthcoming *Regulatory Control Period* is shown in Table 77.

Table 77

Corporate income tax

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Benchmark tax liability	20.57	21.00	20.64	20.68	20.72

A detailed explanation of the basis of the revised estimation of Aurora's corporate income tax is provided in chapter 11 of this *Revised Regulatory Proposal*.

17.3.6. Revenue increments and decrements arising from schemes

Clause 6.4.3(a)(5) of the *Rules* requires the ARR for each *Regulatory Year* of a *Regulatory Control Period* to include the revenue increments or decrements (if any) for that *Regulatory Year* arising from the application of the EBSS, STPIS and DMIS, calculated in accordance with clause 6.4.3(b)(5) of the *Rules*.

Aurora considers that:

- there will be no revenue increments or decrements arising from the EBSS for any *Regulatory Year* of the forthcoming *Regulatory Control Period*, due to the lagged effect of the scheme. Any increments or decrements arising under the EBSS, attributable to operating expenditure incurred during the forthcoming *Regulatory Control Period*, will be reflected in the calculation of the annual revenue requirements for the *Regulatory Control Period* commencing on 1 July 2017. The EBSS is discussed further in chapter 12 of this *Revised Regulatory Proposal*;
- the value of any revenue increments or decrements arising under the STPIS for any *Regulatory Year* of the forthcoming *Regulatory Control Period* cannot be forecast in this *Revised Regulatory Proposal*. They will only become known during the course of the forthcoming *Regulatory Control Period* when Aurora's performance against the performance parameters is known. The STPIS is discussed further in chapter 13 of this *Revised Regulatory Proposal;*
- STPIS related revenue increments and decrements will be treated as adjustments to the ARR for the relevant *Regulatory Year*. This is discussed further at section 18.4.6 of this *Revised Regulatory Proposal*; and
- Aurora has included a revenue increment of $2 million over the course of the forthcoming *Regulatory Control Period* for the DMIA allowed under the DMIS. However, any carryover amount arising from the DMIS will only be applied in the calculation of the ARR for the second *Regulatory Year* in the *Regulatory Control Period* commencing on 1 July 2017. The DMIA and DMIS are discussed further in chapter 26 of Aurora's *Regulatory Proposal*.

17.3.7. Other revenue increments and decrements

Clause 6.4.3(a)(6) of the *Rules* requires the ARR for each *Regulatory Year* of a *Regulatory Control Period* to include other revenue increments or decrements arising from the application of a control mechanism in the current *Regulatory Control Period*.

Aurora's revenue increments or decrements arising from application of a control mechanism in the current *Regulatory Control Period* are not known due to the lagged effect of these adjustments. Any increments or decrements arising from the application of a control mechanism in the current *Regulatory Control Period* will be reflected into the calculation of the annual revenue requirement for the forthcoming *Regulatory Control Period*.

Aurora will adjust its ARR for each *Regulatory Year* of the forthcoming *Regulatory Control Period* following the submission of Aurora's ring-fenced accounts to OTTER for the following matters relating to the current *Regulatory Control Period*:

- previous under – or over-recovery of revenue;
- differences in the electrical safety inspection charge levied in accordance with section 121B of the ESI Act;
- differences in the national energy market charge levied in accordance with section 121 of the ESI Act;
- the impact on the AARR of differences between the actual and forecast allowance relating to Aurora's participation in the NEM and retail contestability costs;
- differences between the actual and forecast allowance relating to Aurora's payments for the State Government's trunk mobile radio network;
- an allowance attributable to the implementation of full retail competition that is approved by OTTER;
- an allowable tax event consistent with Regulation 31(4) of the Price Control Regulations;
- an allowance attributable to changes in safety and/or environmental legislation that is approved by OTTER;
- changes in Aurora's capital contributions policy;
- differences between the actual and forecast allowance relating to Aurora's total GSL payments; and
- adjustments arising from the making of single duration GSL payments where the threshold payment is adjusted in accordance with the methodology approved by OTTER.

17.3.8. Operating expenditure

Aurora's revised forecast operating expenditure for *Standard Control Services* for each *Regulatory Year* of the forthcoming *Regulatory Control Period* is shown in Table 78.

Table 78

Operating expenditure

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)
Operating expenditure	80.12	81.03	82.60	84.51	85.80

Aurora has revised its forecast operating expenditure for each *Regulatory Year* of the forthcoming *Regulatory Control Period* and applies this in the AER's PTRM.

The revised forecast operating expenditure is that which is required by Aurora to achieve each of the operating expenditure objectives in clause 6.5.6(a) of the *Rules* for the provision of *Standard Control Services*.

A detailed explanation of the basis of Aurora's revised operating expenditure forecast is provided in chapter 5 of this *Revised Regulatory Proposal*.

17.3.9. Annual revenue requirement

Aurora's revised ARR, showing all the building blocks, for *Standard Control Services* for the forthcoming *Regulatory Control Period* is shown in Table 79.

Table 79

Annual revenue requirement

Nominal dollars	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)	2016-17 ($m)	Total NPV
Return on capital	143.21	151.53	159.32	166.90	175.55	
Return of capital (regulatory depreciation)	48.34	49.44	47.28	41.42	40.99	
Operating expenditure	80.12	81.03	82.60	84.51	85.80	
Benchmark tax liability	20.57	21.00	20.64	20.68	20.72	
Notional Building Block revenue	292.24	303.00	309.83	313.51	323.06	**1,164.57**
Notional Building Block smoothed revenue	284.73	298.08	311.43	324.75	326.31	**1,164.57**

18. Control mechanisms for Standard Control Services

18. Control mechanisms for Standard Control Services

18.1. Overview

This Chapter sets out the:

- control mechanism to apply to *Standard Control Services* over the forthcoming *Regulatory Control Period*; and
- the variations to that control mechanism that have been identified as needing to be implemented over the forthcoming *Regulatory Control Period*.

18.2. The AER's Framework and Approach

Clause 6.8.1(a) of the *Rules* requires the AER to prepare and publish a Framework and Approach paper in anticipation of each Distribution Determination, which is to state the form or forms of the control mechanisms to be applied by the Distribution Determination and the AER's reasons for deciding on control mechanisms of the relevant form or forms (clause 6.8.1(c) of the *Rules*).

Clause 6.2.6(a) of the *Rules* specifies that, for *Standard Control Services*, the control mechanism must be of the prospective CPI minus X form, or some incentive-based variant of the prospective CPI minus X form, in accordance with Part C of Chapter 6 of the *Rules*.

Clause 6.12.3(c) of the *Rules* provides that the control mechanisms in a Distribution Determination must be as set out in the relevant Framework and Approach paper.

In accordance with the above provisions, the AER published its final Framework and Approach on 29 November 2010. Consistent with the above provisions, the AER stated that:[1]

> *The AER will apply a revenue cap to the services classified in chapter 2 as Standard Control Services in the forthcoming Regulatory Control Period with a basis of the CPI–X form.*

In addition to this, the AER considered a number of adjustment mechanisms to be applied to the fixed revenue cap during the forthcoming *Regulatory Control Period*. Specifically, the AER referred to the GSL Scheme, STPIS, EBSS and DMIS.

1 Framework and Approach, page 84

18.3. AER's Draft Distribution Determination

The AER has partially rejected Aurora's proposals for the control mechanisms that would apply to the provision of *Standard Control Services*. The AER has accepted a number of Aurora's proposals, amended some and rejected others.

The AER did not accept Aurora's proposed revenue adjustments for ESISC, TMR, GSL, FRC and unfunded shared network costs and has rejected these proposals. Aurora accepts the AER's decision on FRC and unfunded shared network costs. Aurora however considers that revenue adjustments for the ESISC, GSL and TMR are appropriate and these are discussed in further detail below.

The AER did not accept Aurora's proposed two year lag of TUOS unders and overs adjustment, instead applying the same methodology as DUOS adjustments. Aurora accepts the AER's decision for the TUOS unders and overs adjustments.

The AER did not accept Aurora's proposal that no side constraints be applied. Aurora accepts the AER's application of side constraints.

The AER did not accept Aurora's proposal for assigning customers to tariff classes and imposed a number of principles to which Aurora must adhere. Aurora accepts the AER's proposal for assigning customers to tariff classes.

The AER has accepted the remainder of Aurora's proposals.

Whilst the AER has not specifically stated that CPI is a component of the control mechanisms, Aurora has assumed that the AER will apply CPI to previous period adjustments as part of the control mechanisms for *Standard Control Services*.

The following sections will discuss Aurora's assessment of those areas where it does not agree with the AER's *Draft Distribution Determination*.

18.3.1. Electrical safety inspection service charge

Aurora proposed the continuation of a revenue adjustment mechanism for its involvement in undertaking electrical inspection services. Aurora undertakes these services on behalf of WST in accordance with the EIS&A Act and the Occupational Licensing Act 2005 (OLA). WST is responsible for providing these services, and tenders out for the contract to provide these services on behalf of WST.

A mechanism exists under Section 121B to 121G of the ESI Act for the Minister to estimate and require an electricity entity (Aurora) to pay for the electrical safety inspection service charge (ESISC). OTTER's 2007 Determination provided for an adjustment mechanism to account for any differences between the forecast allowance and the actual expenditure for the ESISC.

Aurora's contract to provide inspection services expires on 30 June 2012 and WST will seek tenders for a provider of these services from 1 July 2012. Whether or not Aurora wins the tender to provide these services, the Minister has the ability to require Aurora to pay the ESISC.

The AER has determined that the ESISC revenue adjustment mechanism should not be included in the control mechanism for *Standard Control Services* if Aurora does not win the contract starting 1 June 2012. The AER considers that:

- the provision of an electrical safety inspection service falls within the definition of a cost incurred in providing standard control services but Aurora will only incur these costs if it wins the contract to provide these services post 1 July 2012;
- if Aurora wins the contract, the treatment of these costs as a revenue adjustment mechanism is appropriate;
- an allowance will be made in the forecast operating expenditure and the proposed revenue adjustment mechanism that will balance the difference between the actual and forecast charge; and
- if Aurora does not win the contract, then these costs should not be part of Aurora's control mechanism for *Standard Control Services*.

WST has responsibility for providing the electrical inspection service for work beyond the point of supply to customers, in accordance with the EIS&A Act and the OLA.

In June 2007, the Tasmanian Government amended the ESI Act to impose a levy on Aurora to fund electrical safety inspection services with an effective date of 1 January 2008. The electrical safety inspection service charge, as defined in the ESIA Act, is[2]:

> *"...an annual charge, payable to the Crown by an electricity entity for the operation and administration of the electrical safety inspection service administered by the responsible Department..."*

The amount of the levy is determined by WST and has been treated as a revenue adjustment throughout the current *Regulatory Control Period*. In this regard, OTTER provided for an adjustment within the 2007 Pricing Determination to recognise the actual charge as part of the annual revenue requirement.

The AER has correctly interpreted Aurora's obligation to pay the ESISC to WST regardless of the provider of the service, and stated:

> *"Whether or not Aurora wins the tender to provide these services, the Minister has the ability to require Aurora to pay the electrical service inspection charge."*

Irrespective of who provides electrical inspection services as a result of WST's tender for these services, a levy will still be imposed on Aurora under existing legislation to fund these activities and Aurora will continue to incur uncontrollable operational expenditure.

The AER goes on to incorrectly interpret Aurora's obligation in its consideration for making a determination excluding the revenue adjustment mechanism. The AER stated:[3]

> *"The provision of an electrical safety inspection service falls within the definition of a cost incurred in providing standard control services but Aurora will only incur these costs if it wins the contract to provide these services post 1 July 2012. If Aurora does not win the contract, Aurora will not incur costs in providing standard control services. In this instance, the ESISC should not be part of the control mechanism for standard control services."*

and

> *"If Aurora wins the contract, the treatment of these costs as a revenue adjustment mechanism is appropriate. This is because it will not impact on Aurora's incentive as it does not have any control over the amount of the ESISC as it is determined by the Minister under the EIS&A Act."*[4]

The AER appears to have assumed that these service are for inspections of Aurora's distribution network. Rather, they are for inspections of private infrastructure on behalf of WST.

Aurora contends that the continuation of this revenue adjustment is consistent with Clause 6.4.3(b)(6) of the *Rules* and that it should form part of the control mechanism for *Standard Control Services* for the forthcoming *Regulatory Control Period*.

18.3.2. GSL Scheme

Aurora proposed the continuation of two GSL revenue adjustment mechanisms as part of its *Regulatory Proposal*; GSL Cap (GSLcap) and Excess GSL Payments (GSLse).

The AER considered the two GSL cost revenue adjustment mechanisms should not form part of the control mechanism for *Standard Control Services* in the forthcoming *Regulatory Control Period*. The AER will however account for the adjustment of GSL revenue costs occurring in the last year of the current *Regulatory Control Period* through the transitional parameter in the revenue cap formula.

The GSL cap revenue adjustment mechanism limits the costs Aurora would bear under its GSL Scheme to twice the allowance provided by OTTER in its 2007 Determination. OTTER decided to apply this risk sharing mechanism to prevent poor weather from having a dramatic effect on Aurora's bottom line[5]. The AER indicated that its calculations indicate Aurora has not breached this cap during the current *Regulatory Control Period*.

2 Section 121B(1)

3 Draft Distribution Determination Aurora Energy November 2011, Sect 2.4.1, p. 60

4 Draft Distribution Determination Aurora Energy November 2011, Sect 2.4.1, p. 60.

5 2007 Electricity Pricing Investigation – Final Report, p 232.

The excess GSL payments revenue adjustment mechanism permits Aurora to recover a portion of Aurora's GSL payments if an outage affects more than 34,000 customers (or 12.5 per cent of the customer base at the time of OTTER's 2007 Determination). Where an outage affects more than 34,000 customers, this mechanism would calculate an increased threshold for the payment of outages. This increase would be used to then provide Aurora with a 'rebate' for half of these GSL payments. The remaining half must be borne by Aurora and contributes to calculations of whether Aurora has reached the cap for GSL payments over the period.

These adjustment mechanisms are not part of the jurisdictional GSL Scheme, and will not continue to apply unless specified in the control mechanism for *Standard Control Services*. Aurora stated the continuation of these adjustments (and other proposed continued adjustments) are consistent with clause 6.4.3 of the *Rules*.

The AER considered that:

- The GSL revenue adjustment mechanisms protect Aurora from the financial consequence of extreme weather events. However, they also weaken the incentive for Aurora to efficiently invest in or undertake activity to reduce the likelihood and severity of events that are within its control as they limit Aurora's financial exposure to GSL payments more generally.
- Tasmania is the only jurisdiction in the NEM where these GSL revenue adjustment mechanisms in the control mechanism exist.
- Aurora is also seeking to limit its financial exposure by proposing separate pass through events for natural disasters, bushfires and storms. The question of whether Aurora should bear the risk of extreme weather events has been considered in the AER's review of Aurora's proposed pass through events.
- Under the GSL Scheme widespread interruptions related to rare events can be excluded if approved by the Regulator.

Aurora contends that the AER has failed to correctly interpret the risks Aurora is exposed to when the GSL cap ceases on 30 June 2012.

The AER made a number of statements supporting its decision, which Aurora considers are not correct:

> *"AER calculations indicate Aurora has not breached this cap during the current regulatory period."* [6]

Whilst the AER's statement is correct, this is not a compelling reason to discontinue the GSL cap. Using this argument would infer that Aurora would not be required to carry any insurance costs for the forthcoming *Regulatory Control Period*, as it has not made a claim during the current *Regulatory Control Period* and as such no longer carries any inherent business risks.

Aurora also considers that the AER's following consideration is not appropriate grounds to support its draft decision in relation to removing the GSL cap and control mechanisms:

> *"The GSL revenue adjustment mechanisms protect Aurora from the financial consequence of extreme weather events. However, they also weaken the incentive for Aurora to efficiently invest in or undertake activity to reduce the likelihood and severity of events that are within its control."* [7]

Aurora does not consider that the removal of the adjustment mechanisms creates an incentive for Aurora not to invest, as the AER has also implemented the STPIS. The STPIS creates an incentive for Aurora to invest more heavily in its distribution network on the understanding that derived improvements in reliability, above those required by the *TEC*, would also produce additional revenues. The supporting arguments made by the AER in its decision for not imposing a cap on the GSL liability is contradictory to the AER's decision in relation to STPIS in its *Draft Distribution Determination*.

The AER stated that:

> *"Tasmania is the only jurisdiction in the NEM where these GSL revenue adjustment mechanisms in the control mechanism exist."*

Aurora considers that whilst the AER's statement may be correct, it is not a compelling reason to discontinue the GSL cap and should have no bearing on the AER's decision to exclude the mechanisms. At section 6.6.2(b)(2), the *Rules* specifically require that the AER's STPIS:

> *must ensure that service standards and service targets (including guaranteed service levels) set by the scheme do not put at risk the Distribution Network Service Provider's ability to comply with relevant service standards and service targets (including guaranteed service levels) as specified in jurisdictional electricity legislation;*

The note at section 6.6.2(b)(2) further states that:

> *A service target performance incentive scheme operates concurrently with any average or minimum service standards and guaranteed service level schemes that apply to the Distribution Network Service Provider under jurisdictional electricity legislation.*

The AER's STPIS Guideline specifically recognises that jurisdictional specific schemes will exist. At clause 6.1(a) the STPIS Guideline states:

> *Where jurisdictional electricity legislation imposes an obligation on a DNSP to operate a guaranteed service level scheme, clauses 6.2–6.4 do not apply to the DNSP.*

These statements would tend to indicate that the AER must take account of jurisdictional differences that exist between GSL Schemes when establishing its STPIS and therefore any related control mechanisms.

Discounting the properties of the Tasmanian GSL Scheme also fails to recognise that the Tasmanian GSL Scheme is unique in its method of calculating payments associated with the number of interruptions experienced by a customer in two respects. The Tasmanian GSL Scheme requires Aurora:

- to compensate its customers for **ALL** outages experienced by the customer, no matter the cause of that outage; and
- to calculate the payment for the number of outages experienced on a rolling 12-monthly basis (i.e. not simply once every year).

It is partly these reasons that OTTER introduced the capping mechanisms as part of the 2007 Determination.

Aurora considers that whilst the AER's statement that:

> *"Aurora is also seeking to limit its financial exposure by proposing separate pass through events for natural disasters, bushfires and storms. The question of whether Aurora should bear the risk of extreme weather events has been considered in the AER's review of Aurora's proposed pass through events"*

does not take account of the real risks faced by Aurora.

6 Draft Distribution Determination Aurora Energy November 2011, Sect 2.4.1, p. 53.
7 Draft Distribution Determination Aurora Energy November 2011, Sect 2.4.1, p. 54.

Whilst the AER has made some consideration of the risks around extreme weather, natural disasters, bushfires and storms; Aurora considers that the AER has made an error in its *Draft Distribution Determination*. Aurora contends that a major generation or transmission event, outside the control of Aurora, is the most likely risk that it will face. Should a fault or event caused by assets of Hydro Tasmania or Transend cause an extended system blackout, Aurora may be liable for GSL payments in excess of $20m for this single outage. Aurora contends that it is neither efficient nor prudent for Aurora to invest in its network to mitigate this exposure or insure for the un-capped liability that can be addressed through this regulatory process. This exposure is not one off and is well in excess and in addition to the capped revenue at risk through the AER's STPIS at approximately $13m per annum.

Aurora considers that whilst the AER's statement that:

> *"Under the GSL scheme widespread interruptions related to rare events can be excluded if approved by the regulator"*

is also correct, this does not reduce Aurora's risk or exposure, as the exclusion of any un-capped liability by the Regulator is not by any means certain. OTTER has assessed that an event will only be considered as rare if it is akin to an act of terrorism.

As originally discussed in Aurora's *Regulatory Proposal*, the GSL Scheme is provided in the OTTER GSL Guideline. Aurora noted that only part of the scheme is articulated in the GSL Guideline. The remainder, being the single event safety net and the risk sharing mechanism are provided in the OTTER 2007 Determination. While the OTTER GSL Guideline has no expiry date, and OTTER is not intending to repeal the GSL Guideline, the 2007 Determination terminates on 30 June 2012. This termination leaves Aurora with a potentially uncapped GSL liability, which was not the original intention of OTTER when the scheme was introduced.

OTTER considered its reasons for a cap in its 2007 Determination:

> *"...Regulator has decided to cap the risk at two times the total allowance over the period. This is consistent with the approach adopted for the Risk Sharing Mechanism where the adjustment is based on the cumulative differences, such that any over expenditures in one year would be required to be off-set against under expenditures in a subsequent year. This equates to a total exposure over the period of $7 million which is approximately 0.75 per cent of total revenue. This is less than the two per cent cap proposed in the Draft Position Paper and less than the 1.0 to 5.0 per cent revenue at risk which the AER is considering for the transmission service incentive scheme...*
>
> *...The two mechanisms are thus designed to deal with different risks, the first being the risk of a series of events over the period that may result in Aurora paying to customers an amount materially higher than expected, the second being the risk of a single large event. However, the Regulator recognises that there is a degree of interaction between the two mechanisms. Thus, as Aurora will be able to recover half of the additional payments above the revised duration threshold from customers in the following year, only the remainder will be able to be taken into account in calculating whether Aurora has reached the cap for payments over the period...*
>
> *...In the light of this, the Regulator has also considered whether the exemption for widespread interruptions due to 'rare' events should remain. Whilst it is anticipated the risk sharing provision provided through an adjustment to the threshold should manage most single large events, the Regulator recognises that there could be other rare events where the financial risk may be very significant. In these instances it may be to customers, as well as Aurora's, benefit to manage these through an exemption rather than a risk sharing mechanism."*[8]

In OTTER's 2007 Determination, two adjustment mechanisms were included to deal with the risks associated with Aurora paying customers an amount for GSL payments materially higher than expected. The two mechanisms adopted that provide this risk sharing mechanism to both Aurora and its customers are:

- GSL payments are capped at two times the cumulative GSL allowance provided for in the 2007 Distribution Determination. Any cumulative expenditure in excess of the cumulative allowances is recoverable from tariffs in the following year.
- Where there are widespread outages, thresholds for the single outage duration GSL payments will be calculated after the event. If the event results in more than 34,000 customers experiencing an outage in a 24 hour period then the adjusted thresholds will be calculated in accordance with the following formula:

  Adjusted threshold = x(number of customers affected/34,000)*

  Where x is the standard threshold[9]

Aurora will continue to make payments to all eligible customers according to unadjusted thresholds with half of all payments made to customers below the adjusted threshold recoverable through tariffs in the following year. The remaining half will contribute to calculations of whether Aurora has reached the cap for payments over the period.

The GSL Scheme was developed to be the whole of the STPIS for the current *Regulatory Control Period* with the thresholds set such that a certain fraction of Aurora's total allowable revenue was at risk. The scheme has not been amended away from this arrangement, so Aurora will have two full STPIS schemes in operation in the forthcoming *Regulatory Control Period*.

Aurora contends that the AER has not made a determination that is in the best interests of Aurora's shareholders or customers and that the continuation of this revenue adjustment is consistent with clause 6.4.3(b)(6) of the *Rules* and that it should form part of the control mechanism for *Standard Control Services* for the forthcoming *Regulatory Control Period*.

18.3.3. TMR

The AER did not accept that the TMR revenue adjustment mechanism should form part of the control mechanism for *Standard Control Services* in the forthcoming *Regulatory Control Period*. However, forecast TMR costs should be (and are) included in Aurora's operating expenditure forecasts. The AER will account for the adjustment of TMR revenue costs occurring in the last year of the current *Regulatory Control Period* through the transitional parameter in the revenue cap formula.

8 2007 Electricity Pricing Investigation – Final Report, Section 12.4, p 232-233.
9 2007 Electricity Pricing Investigation – Final Report Table 12.3

The AER considers:

- Absent a legal obligation on Aurora to participate in the TMR, the decision to continue to participate in the TMR and incur costs associated rests with Aurora. Where the TMR is used in the provision of the distribution services by Aurora, it can include the costs of this service in its forecasts of the costs of providing *Direct Control Services*. The TMR expenditure would then be assessed by the AER in reviewing Aurora's proposed operating expenditure for *Direct Control Services*.
- The current regulatory arrangements were established by OTTER due to uncertainty of these costs during the 2007 Determination. OTTER decided a revenue adjustment mechanism would balance this uncertainty.
- While there has been a discrepancy between forecast and actual expenditure on TMR in the current *Regulatory Control Period*, this does not indicate Aurora would not be able to more accurately forecast this cost for the forthcoming *Regulatory Control Period*. The absence of the revenue adjustment mechanism would provide Aurora with an incentive to forecast more accurately and incur costs more efficiently.

Aurora contributes to a joint government department cost of running the TMR network within Tasmania for emergency services. Arrangements surrounding the provision of this service to all Tasmanian Government agencies remain uncertain.

This charge is calculated by the Police and Emergency Management Department each financial year and is beyond the control of Aurora.

Aurora contends that a control mechanism is appropriate for TMR costs to be treated as an addition to the AARR. Aurora provides the contract relating to the TMR network and has appended the contract as a confidential attachment to this *Revised Regulatory Proposal*.

18.4. Adjustments

Once approved by the AER, Aurora's control mechanism for *Standard Control Services* will allow for annual increases or decreases in Aurora's ARR as a consequence of a number of revenue adjustment factors which will be calculated annually. These revenue adjustment factors were agreed with the OTTER at the commencement of the current *Regulatory Control Period* and will continue into the forthcoming *Regulatory Control Periods*.

Chapter 6 of the *Rules* allows for these revenue adjustment factors to continue beyond the end of one *Regulatory Control Period* and into the forthcoming *Regulatory Control Period*.

Clause 6.4.3(a)(6) of the *Rules* allows for the building blocks to include:

- the other revenue increments or decrements (if any) for that year arising from the application of a control mechanism in the previous *Regulatory Control Period* – see paragraph (b)(6).

Clause 6.4.3(b)(6) of the *Rules* states that for the purposes of the above:

- the other revenue increments or decrements referred to in paragraph (a)(6) are those that are to be carried forward to the current *Regulatory Control Period* as a result of the application of a control mechanism in the previous *Regulatory Control Period* and are apportioned to the relevant year under the Distribution Determination for the current *Regulatory Control Period*.

Aurora submits that:

- the control mechanism established by OTTER for the current *Regulatory Control Period* allowed for annual adjustments to the AARR for a number of revenue adjustment factors. These are not change events or pass-throughs; they are annual revenue adjustments based on defined events that formed a transparently identified component of the control mechanism formula. These are set out transparently in OTTER's 2007 Pricing Determination[10];
- this control mechanism was clearly intended to operate beyond the end of the currently *Regulatory Control Period*; and
- the control mechanism for *Standard Control Services* for the forthcoming *Regulatory Control Period* should be adjusted for the revenue adjustments set out in this chapter. The nature of the proposed control mechanism for *Standard Control Services* is set out in chapter 6 of Aurora's *Regulatory Proposal*.

This chapter outlines the basis and calculation methods for the annual revenue adjustments that will form part of Aurora's control mechanism for *Standard Control Services*. These revenue adjustments are:

- under/over recoveries from prior period revenues;
- electrical safety inspection service levy;
- national energy market levy;
- trunk mobile radio; and
- excess GSL costs.

Each of the above revenue adjustments is described below.

18.4.1. Under/over recoveries from prior period revenues

As discussed at section 5.4 of Aurora's *Regulatory Proposal*, under the revenue cap control mechanism outlined in OTTER's 2007 Pricing Determination, there is an adjustment for the surplus or shortfall of actual revenue compared to the revenue target each year. The quantum of any unders or overs variance is assessed as part of the allowable revenue calculation for each *Regulatory Year*. This variance is generally cleared two years after its occurrence.

Adjustments to determine the revenue to be collected in any year to account for any under or over recoveries in the period 2 years previous will be required. For the forthcoming *Regulatory Control Period*, Aurora's *Standard Control Services* will continue to be under a revenue cap form of control mechanism. Aurora considers that the continuation of this revenue adjustment is consistent with clause 6.4.3(b)(6) of the *Rules* and should form part of the control mechanism for *Standard Control Services* for the forthcoming *Regulatory Control Period*.

A worked example of Aurora's proposed methodology for under/over recoveries was appended as an attachment to Aurora's *Regulatory Proposal*.

10 Investigation into Electricity Supply Industry Pricing Policies, Declared Electrical Services Pricing Determination, 31 October 2007, page 13

18.4.2. Electrical safety inspection service levy

Workplace Standards Tasmania (WST) has responsibility for providing electrical inspection service for work beyond the point of supply to customers in accordance with the EIS&A Act.

Aurora considers that the continuation of this revenue adjustment is consistent with Clause 6.4.3(b)(6) of the *Rules* and that it should form part of the control mechanism for *Standard Control Services* for the forthcoming *Regulatory Control Period*.

A worked example of Aurora's proposed methodology for the electrical safety inspection levy was appended as an attachment to Aurora's *Regulatory Proposal*.

18.4.3. National energy market charge

Under the Australian Energy Market Agreement, which committed governments to the establishment of the AER and AEMC, the Commonwealth Government funds the AER and the States and Territories fund the AEMC. The agreement allows the States and Territories to recover, from the industry, the cost of funding the AEMC. The ESI Act provides for the Crown to recover from an electricity entity, in each financial year[11] :

> *"... a charge representing part or all of the cost of the State's funding commitments in respect of the AEMC."*

Aurora considered that the continuation of this revenue adjustment was consistent with clause 6.4.3(b)(6) of the *Rules* and that it should form part of the control mechanism for *Standard Control Services* for the forthcoming *Regulatory Control Period*. The AER has agreed with this provision and accepted Aurora's proposal.

A worked example of Aurora's proposed methodology for the national energy market levy was appended as an attachment to Aurora's *Regulatory Proposal*.

18.4.4. Trunk mobile radio

Aurora contributes to a joint government department cost of running the trunk mobile radio (TMR) network within Tasmania for emergency services. This charge is levied upon Aurora by the Police and Emergency Management Department each financial year. However, arrangements surrounding the provision of this service to all Tasmanian Government agencies have yet to be finalised and costs for the provision of this service still remain uncertain.

Aurora considers that the continuation of this revenue adjustment is consistent with clause 6.4.3(b)(6) of the *Rules* and that it should form part of the control mechanism for *Standard Control Services* for the forthcoming *Regulatory Control Period*.

A worked example of Aurora's proposed methodology for trunk mobile radio was appended as an attachment to Aurora's *Regulatory Proposal*.

18.4.5. Excess GSL costs

In OTTER's 2007 pricing determination, two adjustment mechanisms were included to deal with the risks associated with Aurora paying customers an amount for GSL payments materially higher than expected. The two mechanisms adopted that provide this risk sharing mechanism to both Aurora and its customers are:

- GSL payments are capped at two times the cumulative GSL allowance provided for in the 2007 Distribution Determination. Any cumulative expenditure in excess of the cumulative allowances is recoverable from tariffs in the following year.
- Where there are widespread outages, thresholds for the single outage duration GSL payments will be calculated after the event. If the event results in more than 34,000 customers experiencing an outage in a 24 hour period then the adjusted thresholds will be calculated in accordance with the following formula:

  Adjusted threshold = x(number of customers affected/34,000)*

  Where x is the standard threshold[12]

Aurora considers that the continuation of this revenue adjustment is consistent with clause 6.4.3(b)(6) of the *Rules* and that it should form part of the control mechanism for *Standard Control Services* for the forthcoming *Regulatory Control Period*.

A worked example of Aurora's proposed methodology for excess GSL costs was appended as an attachment to Aurora's *Regulatory Proposal*.

18.4.6. Application of various schemes to Aurora

STPIS

In the Framework and Approach, the AER noted that the application of a STPIS would provide appropriate incentives for Aurora to maintain and improve service performance, and that the AER intends to apply a STPIS to Aurora (albeit retaining the jurisdictional GSL Scheme rather than using the GSL component of the STPIS).

The STPIS aims to ensure that the DNSP achieves, or maintains, efficient service levels so that the incentive to minimise operational expenditure does not result in lower levels of service for customers, specifically by requiring Aurora to make penalty payments to customers when service performance falls below a certain standard (and vice versa). Further information on the STPIS is set out in chapter 13 of this *Revised Regulatory Proposal*.

Should the AER decide to apply a STPIS to Aurora in the forthcoming *Regulatory Control Period*, then any revenue increment or decrement associated with the operation of that STPIS in a *Regulatory Year* will be applied to the smoothed ARR that applies two *Regulatory Years* after the *Regulatory Year* in which the service performance was measured.

11 Section 121(1)

12 2007 Electricity Pricing Investigation – Final Report Table 12.3

EBSS

In the Framework and Approach, the AER noted that the EBSS would apply to Aurora's operational expenditure.

The EBSS creates incentives for Aurora to realise operational efficiency gains, essentially by providing for a fair sharing between Aurora and Aurora's customers of:

- the efficiency gains derived from Aurora's operating expenditure for a *Regulatory Control Period* being less than; and
- the efficiency losses derived from Aurora's operating expenditure for a *Regulatory Control Period* being more than;
- the forecast operating expenditure accepted or substituted by the AER for that *Regulatory Control Period*. Further information on the EBSS is set out in chapter 12 of this *Revised Regulatory Proposal*.

The AER also noted that the application of positive and negative carryovers was important for the continuity of incentives.

Accordingly, any applicable EBSS revenue increment or decrement will be added to operating expenditure, and the AER will apply both positive and negative carryovers as part of the operating expenditure building block element in the calculation of Aurora's ARR for the *Regulatory Control Period* following the *Regulatory Control Period* in which the EBSS applied (i.e., the 2017-22 *Regulatory Control Period*).

DMIS

A DMIS is intended to provide incentives for Aurora to implement efficient non-network alternatives or to manage the expected demand for *Standard Control Services* in some other way. This can have positive impacts by reducing inefficient peaks and encouraging more efficient use of existing network assets, resulting in lower prices for network users.

The DMIS proposed by the AER to apply to Aurora allows for the recovery of costs for demand management projects and programs undertaken throughout the forthcoming *Regulatory Control Period*, subject to the satisfaction of a defined criterion. The Demand Management Incentive Allowance (DMIA) is provided as a capped, annual ex ante allowance which is subject to a single adjustment in the subsequent *Regulatory Control Period* to return to customers any expenditure not approved or not spent. Further information on the DMIS is set out in chapter 26 of Aurora's *Regulatory Proposal*.

Accordingly, should the AER apply a DMIS to Aurora in the forthcoming *Regulatory Control Period*, any DMIA (up to a maximum of $400,000 for each year of the forthcoming *Regulatory Control Period* (being $2 million overall) will be provided as an amount in addition to the approved efficient operating expenditure. At the end of that *Regulatory Control Period*, the AER will calculate a carryover amount to be applied to the allowed revenues in the second year of the following *Regulatory Control Period* (or as specified in the applicable DMIS).

Tasmanian Electricity Code GSL Scheme

The GSL Scheme requires that payments are made to eligible customers when they do not receive the relevant guaranteed level of distribution service. The GSL Scheme sets out the value of payments that are to be made to customers on the basis of the number of outages in any 12 month period, and on the basis of the duration, in hours, of a single outage.

The expiry of the OTTER 2007 Determination (which implements the single event safety net and risk sharing mechanism) will result in a potentially uncapped liability for Aurora. The GSL Scheme can therefore impose a significant financial burden upon Aurora where interruptions to supply in Aurora's network exceed these limits.

Accordingly, to the extent that actual GSL payments differ from the forecast payments, these differences will need to be reflected in the allowed revenues as part of the annual adjustments.

Aurora's proposed mechanism for GSL Scheme payments is discussed further in chapter 23 of Aurora's *Regulatory Proposal*.

18.4.7. Pass through events

Clause 6.6.1 of the *Rules* permits Aurora to apply for any cost pass throughs for events that materially increase or decrease the costs of providing *Direct Control Services* (including *Standard Control Services*).

These events are prescribed in the *Rules* as a regulatory change event, a service standard event, tax change event and a terrorism event.

In chapter 14 of this *Revised Regulatory Proposal*, Aurora also proposes a number of additional pass through events.

Please refer to section 14.3 of this *Revised Regulatory Proposal* for details of these additional pass through events.

18.5. Proposal for assigning customers to tariff classes

Clause 6.12.1(17) of the *Rules* states that a Distribution Determination is predicated on a decision by the AER on, amongst other things, the procedures for assigning customers to tariff classes, or reassigning customers from one tariff class to another, including any applicable restrictions.

Clause 6.18.4 of the *Rules* sets out principles governing the assignment or re-assignment of customers to tariff classes and requires the Distribution Determination to contain provisions for the assessment and review of the assignment or re-assignment of customers to tariff classes and the basis on which a customer is charged. It states that:

(a) in formulating provisions of a distribution determination governing the assignment of customers to tariff classes or the reassignment of customers from one tariff class to another, the AER must have regard to the following principles:
    (1) customers should be assigned to tariff classes on the basis of one or more of the following factors:
        (i) the nature and extent of their usage;
        (ii) the nature of their connection to the network;
        (iii) whether remotely-read interval metering or other similar metering technology has been installed at the customer's premises as a result of a regulatory obligation or requirement;
    (2) customers with a similar connection and usage profile should be treated on an equal basis;
    (3) however, customers with micro-generation facilities should be treated no less favourably than customers without such facilities but with a similar load profile;
    (4) a Distribution Network Service Provider's decision to assign a customer to a particular tariff class, or to re-assign a customer from one tariff class to another, should be subject to an effective system of assessment and review; and
(b) if the charging parameters for a particular tariff result in a basis of charge that varies according to the usage or load profile of the customer, a distribution determination must contain provisions for an effective system of assessment and review of the basis on which a customer is charged.

With respect to clause 6.18.4(a)(1) and 6.18.4(a)(2) of the *Rules*, Aurora assigns customers to tariffs on the basis of usage and size.

Customers are assigned into one of four classes of network users, namely:

- individually calculated customers;
- greater than 2MVA customers;
- standard customers; and
- embedded generators.

Aurora selects the network users for inclusion in any particular network user class.

Details of the classes chosen by Aurora and how Aurora would meet the *Rules* requirements were detailed in section 32.4 of Aurora's *Regulatory Proposal*.

18.6. Basis for reporting to AER on recovery of TUoS charges

Clause 6.12.1(19) of *Rules* states that a Distribution Determination is predicated on a decision by the AER on, amongst other things, how the DNSP is to report to the AER on its recovery of TUOS charges for each *Regulatory Year* of the *Regulatory Control Period* and on the adjustments to be made to subsequent pricing proposals to account for over or under recovery of those charges.

The AER has proposed a mechanism similar to that used by Aurora for the under or over recovery of DUOS charges. Aurora proposes to adopt the AER process in the forthcoming *Regulatory Control Period*.

19. Alternative Control Services – Metering

19. Alternative Control Services – Metering Services

19.1. Overview and Rules requirements

Clauses 6.2.6(b) and (c) of the *Rules* provide that, for *Alternative Control Services*, the control mechanism must have a basis stated in the Distribution Determination and the control mechanism may (but need not) utilise elements of Part C of Chapter 6 of the *Rules* (with or without modification).

Clause 6.8.2(c)(3) of the *Rules* provides that Aurora's *Regulatory Proposal* must, for *Direct Control Services* classified as *Alternative Control Services*, provide a demonstration of the application of the control mechanism, as set out in the Framework and Approach paper and the necessary supporting information.

Clause 6.8.2(c)(4) of the *Rules* provides that Aurora's *Regulatory Proposal* must, for *Direct Control Services*, provide indicative prices for each year of the *Regulatory Control Period*.

As identified in chapter 6 of Aurora's *Regulatory Proposal*, the AER's final Framework and Approach paper classified the following categories of *Direct Control Services* as *Alternative Control Services* with the form of control for all services being a price cap:

- metering services;
- public lighting services;
- fee-based services; and
- quoted (non-standard) services.

Aurora has adopted the classification of these services as outlined in the AER's Framework and Approach.

This chapter sets out the control mechanisms for Aurora's *Alternative Control Services*, demonstrates the application of these control mechanisms in accordance with the requirements of the *Rules*, and sets out indicative prices for each service provided for the forthcoming *Regulatory Control Period*.

19.2. Metering services

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 (MDP).

Metering services excludes:

- MDP services for type 1 – 4 metering installations, which are proposed to be unregulated;
- meters provided by Aurora's energy business to provide PAYG 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, which sets a cap on the maximum daily meter allowance for each meter class.

The AER, in its final Framework and Approach, proposed that metering services should be classified as *Direct Control Services* and further classified as *Alternative Control Services*, subject to a price cap form of control.

Aurora proposes to apply a price cap form of control for the forthcoming *Regulatory Control Period* to all metering services.

19.3. AER's Draft Distribution Determination

In its *Draft Distribution Determination*, the AER has chosen to classify the provision of metering services as *Alternative Control Services*. This classification is consistent with Aurora's *Regulatory Proposal* and Aurora accepts the AER's classification.

The AER has determined the use of a price cap as the form of control, but rejected Aurora's proposed annuity approach to setting prices. Rather, the AER considered that a Building Block approach, as per Part C of Chapter 6 of the *Rules,* was more appropriate.

In its *Draft Distribution Determination*, the AER has made several changes to the mechanism to calculate the prices for the provision of metering services. In particular, the AER:

- adopted a RAB-based approach to set prices as opposed to Aurora's annuity-based approach;
- determined an opening RAB using modified inputs from the Aurora Metering Annuity Model;
- revised forecast capital expenditure for metering services; and
- determined inputs to the newly created building block model.

Aurora accepts the AER's determination to use a Building Block approach to setting the prices for the provision of metering services but proposes an amendment to the control mechanism for the final prices.

19.3.1. Form of control

For the purposes of clarifying the application of the Building Block approach, Aurora presents proposals for:

- the mechanism to set a price path for metering services; and
- a capex roll forward mechanism.

Price path

Aurora accepts in principle the AER's proposed Form of Control, but notes that the mechanism as stated by the AER will result in uncertainty about pricing because of the year-by-year approach to price setting for the provision of these services.

To address these concerns, Aurora proposes that a "base-year" approach be used to set the prices for the first year of the forthcoming *Regulatory Control Period*, with the base-year prices escalated by a similar method to that used to escalate the annual revenue for *Standard Control Services*.

Such an approach will simplify the annual price setting for metering services and provide a degree of certainty about the future movements of prices for these services over the forthcoming *Regulatory Control Period*.

In outline, the approach to setting the prices will have the following steps:

- nominal revenue for each service for each year will be built up using the AER's methodology, with the inputs modified by the escalation factors appropriate to those inputs;
- the NPV value of these annual revenues will be calculated, using the post-tax nominal WACC as the discount rate;
- smoothed revenues for each year will be calculated using the same approach used by the AER in the PTRM;
- smoothed nominal prices for the base year will be calculated using Aurora's metering revenue allocation model; and
- the nominal prices for each service for subsequent years will be calculated by escalating the base year prices by CPI, the real labour escalators and the appropriate X-factor determined in the initial smoothing process.

Roll forward mechanism for capex

The use of a Building Block approach requires certainty surrounding the approach that will be adopted for changes that are to occur to the RAB in future *Regulatory Control Periods,* i.e. the RAB roll forward.

The AER has not indicated within its *Draft Distribution Determination* how this will apply, noting only a "limited" Building Block approach has been adopted. This lack of information does not provide Aurora any certainty as to the AER's approach to metering services in the *Regulatory Control Periods* subsequent to the forthcoming *Regulatory Control Period*.

Aurora proposes the current approach as per clause 6.5.1 and schedule 6.2 of the *Rules* should apply. That is, the approach should be the same for metering services as that for *Standard Control Services* and utilise the AER's existing PTRM methodology.

19.3.2. Initial RAB valuation

To apply a RAB-based Building Block approach, the AER has determined an initial written down value of the RAB, based upon depreciated replacement costs as calculated by the AER.

In determining this opening RAB, the AER:

- accepted Aurora's forecast of meter registers;
- did not accept Aurora's proposed replacement costs for mechanical meters;
- with regard to electronic meters:
  - accepted Aurora's proposed costs for electronic metering units;
  - did not accept Aurora's proposed installation costs;
  - did not accept Aurora's proposed on-costs; and
  - proposed different metering asset lives.

Aurora does not accept the AER's methodology to establish the initial RAB valuation.

Aurora addresses these input variables in the following sections.

Number of meter registers

In its *Draft Distribution Determination*, the AER accepted Aurora's forecast of meter registers.

Aurora partially accepts the AER's decision.

The AER has failed to account for the timeclocks that are installed with mechanical meters that are used to provide an off peak tariff to Aurora's customers. These timeclocks are not included in the number of meter registers but are rather added to the meter register to account for their provision. These timeclocks were therefore treated as off peak meters as part of the OTTER modelling. Aurora has added these timeclocks as part of the establishment of the initial RAB for meters.

The inclusion of these timeclocks adds an additional $1.03m to the valuation of the initial RAB.

Aurora notes that as it has not installed mechanical meters with associated timeclocks since the commencement of the current *Regulatory Control Period* it will not require timeclocks in the forthcoming *Regulatory Control Period*.

Replacement cost for mechanical meters

In its *Draft Distribution Determination*, the AER has rejected Aurora's forecast replacement costs for new mechanical meters, proposing instead to use the escalated value approved by OTTER in the 2007 Determination.

Aurora accepts the AER decision to use the escalated replacement costs as per OTTER's 2007 Determination. Aurora has however utilised updated inflation data that results in a differing cost to that used by the AER.

Aurora notes that it is not intending to install mechanical meters in the forthcoming *Regulatory Control Period*.

Replacement cost for electronic meters

In its *Regulatory Proposal*, Aurora forecast single-phase meter installation cost to be $240.10. During the assessment of metering costs by Nuttall Consulting, Aurora provided a revised estimate based upon commercially-based tendering outcomes.

In its *Draft Distribution Determination*, the AER has accepted Aurora's revised forecast replacement costs for new electronic meters.

Aurora accepts the AER's decision. Aurora has however utilised updated inflation data that results in a differing cost to that used by the AER.

Installation cost for electronic meters

In its *Draft Distribution Determination*, the AER did not accept Aurora's forecast installation costs for electronic meters, reducing the per-meter installation cost to the escalation value given in OTTER's 2007 Determination.

Aurora accepts the AER decision to use the escalated installation costs as per OTTER's 2007 Determination. Aurora has however utilised updated inflation data that results in a differing cost to that used by the AER.

Meter lives

To apply a RAB-based Building Block approach, the AER has determined an initial written down value of the RAB, based upon the depreciated replacement value.

To arrive at the depreciated value, the AER used the following standard asset lives:

- mechanical meters:
  - pre 1 July 2007, 25 years;
  - 1 July 2007 – 30 June 2012, 20 years; and
  - 1 July 2012 – 30 June 2017, 30 years;
- electronic meters:
  - pre 1 July 2007, 20 years;
  - 1 July 2007 – 30 June 2012, 15 years; and
  - 1 July 2012 – 30 June 2017, 15 years.

The AER notes that it is "...applying the depreciation rates previously used by OTTER to calculate the depreciated value for each age class and thus calculate the total RAB at the start of the forthcoming *Regulatory Control Period*. The initial RAB thus measures the written-down value of the meters after deducting the depreciation allowances that have already been recovered in prices."

Aurora contends that this approach is inappropriate as it does not account for the change in *Regulatory Years* that occurred during 2007-08. The models used by OTTER to establish prices for the 2007 Determination set those prices with a start of 1 January 2008 and not 1 July 2007. If the AER is to remain consistent with, "...the depreciation allowances that have already been recovered in prices", it must adjust its depreciation to account for this half year change.

Aurora has used amended depreciation for the 2007-08 year based upon a split of the metering assets installed that year.

Depreciation

The AER has utilised a straight-line methodology for the calculation of depreciation associated with the metering services RAB.

Aurora accepts the AER's decision.

19.3.3. Capital expenditure

In the metering annuity model provided to the AER, Aurora forecast average annual capital expenditure for the provision of metering services to be $14.4 million, excluding capital overheads.

In its *Draft Distribution Determination*, the AER reduced this forecast to $5.7 million, including capital overheads.

In making this determination, the AER revised:

- the forecast volumes of new and replacement meters;
- the cost per meter; and
- the quantum of capital overheads.

Aurora addresses these issues in more detail in the following sections.

Number of Meters

In its *Draft Distribution Determination*, the AER has reduced the expected annual average forecast volume to 5,788 new registers and 6,610 replacements.

New installations

The AER has reduced this annual average forecast to 5,788 new registers to align with its overall customer number growth forecast assumptions.

Aurora does not accept the AER's decision.

The AER has failed to recognise the number of meter exchanges (i.e. new tariff or change of tariff) that are included in Aurora's forecasts for new installations. These new meters are installed at the request of the customer and are independent of the number of new connections that occur each year. Aurora has included these 'additional' new meters as part of its revised forecasts of the number of meters installed each year.

Replacement of non-compliant meters

The AER has accepted Aurora's forecast volumes for the replacement of non-compliant meters.

Replacement of ERT meters

The AER has accepted Aurora's forecast volumes for the replacement of ERT meters.

Replacement for access and key management purposes, and reading issues

The AER has rejected Aurora's proposed volume of meters replaced for access and key management issues, noting that the increased efficiency obtained from replacing the relevant meters should offset the cost. The AER has also rejected Aurora's proposed volume of meters replaced for reading related issues. The AER adds that Aurora had included no communications costs in its forecast to allow remote reading of the new meters, which was a further supporting reason for disallowing the expenditure forecast.

Aurora accepts the AER's decision.

Meter Costs

The AER proposes to use the same meter costs for new meters as it used in determining the RAB.

Aurora accepts the AER's decision.

Capital Overheads

The AER has accepted the values for capital overheads that Aurora proposed as applying to metering services.

Whilst Aurora accepts the decision that capitalised overheads should be applied to the provision of metering services, it has updated the value of these overheads to reflect revised forecasts for *Standard Control Services*.

19.3.4. Building Block Approach

In its *Draft Distribution Decision*, the AER has chosen to move away from Aurora's annuity approach and has instead adopted a Building Block approach to maintain consistency with other jurisdictions.

In making this change, the AER needed to review three additional key inputs to their models:

- the WACC rate;
- the effects of taxation; and
- forecast opex.

These issues are discussed in more detail below.

WACC

The AER has used its standard PTRM to arrive at the revenue allowance for the provision of metering services. In the PTRM the AER has used a post-tax nominal WACC consistent with that used for *Standard Control Services*.

Whilst Aurora accepts the use of the PTRM and a WACC consistent with that of *Standard Control Services*, Aurora does not agree with the value of the WACC determined by the AER. Aurora's assessment of the AER's calculation of WACC is discussed in detail in chapter 9 of this *Revised Regulatory Proposal*.

Taxation

The AER's preferred approach to setting prices for metering services uses a post-tax nominal model. As a result, the effects of taxation must be estimated and incorporated into the modelling. The AER has utilised the same approach to estimating taxation effects on metering services as it used for estimating taxation effects on *Standard Control Services*.

Aurora accepts the AER's methodology for calculating the impact of taxation.

Aurora's result will however be higher than that proposed by the AER due to the inclusion of the timeclocks in the initial RAB.

Operating expenditure

The AER has not utilised a base year approach to setting the operating expenditure for the provision of metering services and have instead accepted Aurora's proposed operating expenditure forecasts.

The AER has also rejected Aurora's application of a three per cent efficiency factor across labour rates. This is discussed further in section 6.2 of this *Revised Regulatory Proposal*. Aurora has removed the 3 per cent efficiency from the labour rates for all its operating expenditure forecasts.

Aurora has prepared revised forecasts for operating expenditure associated with the provision of metering services as part of this *Revised Regulatory Proposal*.

19.3.5. Indicative prices

The AER has rejected Aurora's annuity approach and developed a revenue stream for the provision of metering services based upon a Building Block approach and the PTRM methodology. To convert this revenue into prices (in accordance with the control mechanism applied by the AER) the AER has then chosen to accept Aurora's annuity model outcomes as the basis of the prices that have been scaled to recover the allowable revenue. It is unusual that the AER can on one hand reject the Aurora proposal outright and on the other hand adopt the outputs of that mechanism as a sensible approach to develop prices.

Aurora rejects the AER's methodology to scale annuity model outcomes to match allowable revenue and has instead developed a revenue allocation model that allocates the revenue components to the meter classes.

19.4. Levels of service

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

The levels of service currently provided by Aurora are established in accordance with the requirements of:

- the *Rules*, in particular section 7.6, which sets out the requirements for the inspection, testing and auditing of metering installations;
- the *TEC*, section 9.18, which establishes the approved maintenance plan for metering equipment and the maximum period between meter installation tests, and requires that the maximum period between tests is:
  - 10 years for CT meters;
  - 5 years for electronic CT connected meters; and
  - 5 years for induction CT connected meters.
- the *TEC*, section 9.18, which requires that Aurora establish and maintain a sampling plan to ensure that each class of metering equipment is tested in accordance with AS/NZS 1284.13;
- the *TEC*, section 9.18, which sets out Aurora's obligations in relation to repairing or replacing defective metering equipment;
- AS/NZS 1284.13:2002 – Electricity Metering In-Service Compliance Testing, with respect to compliance testing; and
- historic business practice with recognition of changes in customer service delivery expectations over time. This is established using records of metering assets from completed service orders to install, read, alter and remove metering equipment, and also from periodic routine testing and inspection programs. The equipment details and attributes are recorded within Aurora's MDMS.

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.

19.5. Application and demonstration of form of control

This section outlines Aurora's proposed application of the control mechanism for metering services and the method by which compliance with the control mechanisms can be demonstrated, in accordance with clauses 6.2.6(b), (c) and 6.8.2(c)(3) of the *Rules*.

In establishing the control mechanism, Aurora has utilised Part C of Chapter 6 of the *Rules*.

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 a modified RAB approach.

In Aurora's modified RAB approach:

- nominal revenue, and X-factors, for each year will be built up using the modified RAB approach and the mechanisms within the PTRM;
- smoothed nominal prices for the base year will be calculated using Aurora's metering revenue allocation model; and
- the nominal prices for each service for subsequent years will be calculated by escalating the base year prices by CPI, the real labour escalators and the appropriate X-factor determined in the initial smoothing process.

Aurora's proposed control mechanism for the provision of metering services is discussed in detail in the paper appended as an attachment to this *Revised Regulatory Proposal*.

19.6. Aurora's proposed X factors

Aurora has used the formula included in the PTRM to establish the X factors for the provision of metering services.

Aurora has designed its X factors to minimise the P_0 price impact that will be faced by customers by applying different X factors for each *Regulatory Year* of the forthcoming *Regulatory Control Period*.

The resulting X factors for each year of the forthcoming *Regulatory Control Period* are set out in Table 80.

Table 80

X Factors

	2012-13	2013-14	2014-15	2015-16	2016-17
X factor (%)	5.00	2.51	2.42	(1.50)	(2.00)

19.7. Indicative prices

Table 81 provides indicative prices for metering services by meter class for the first year of the forthcoming *Regulatory Control Period*.

Table 81

Indicative prices for metering services (cents 2011-12)

Meter class	2012-13 (c/day)
Domestic LV – single phase	8.207
Domestic LV – multi phase	15.785
Domestic LV – CT meters	19.815
Domestic LV – single phase – remote read	8.057
Domestic LV – multi phase– remote read	15.838
Domestic LV – CT meters– remote read	19.196
Business LV – single phase	13.990
Business LV – multi phase	7.595
Business LV – CT meters	15.137
Business LV – single phase– remote read	21.200
Business LV – multi phase– remote read	7.595
Business LV – CT meters– remote read	15.137
Other meters	21.200

Indicative prices have been shown in 2011-12 cents per day, however, it is noted that actual prices depend on specific meter classes and tariff combinations. For this reason the above prices are considered indicative only, are not binding and are for the purposes of providing a high level overview of the expected price impact for the forthcoming *Regulatory Control Period* only.

Actual prices for the forthcoming *Regulatory Control Period* will be determined following the submission and approval of Aurora's annual Pricing Proposal to the AER in accordance with clause 6.18.2 of the *Rules*.

All indicative prices are exclusive of GST.

20. Alternative Control Services – Public Lighting

20. Alternative Control Services – Public Lighting Services

20.1. Overview and Rules requirements

Clauses 6.2.6(b) and (c) of the *Rules* provide that, for *Alternative Control Services*, the control mechanism must have a basis stated in the Distribution Determination and the control mechanism may (but need not) utilise elements of Part C of Chapter 6 of the *Rules* (with or without modification).

Clause 6.8.2(c)(3) of the *Rules* provides that Aurora's *Regulatory Proposal* must, for *Direct Control Services* classified as *Alternative Control Services*, provide a demonstration of the application of the control mechanism, as set out in the Framework and Approach paper and the necessary supporting information.

Clause 6.8.2(c)(4) of the *Rules* provides that Aurora's *Regulatory Proposal* must, for *Direct Control Services*, provide indicative prices for each year of the *Regulatory Control Period*.

As identified in chapter 6 of Aurora's *Regulatory Proposal*, the AER's final Framework and Approach paper classified the following categories of *Direct Control Services* as *Alternative Control Services* with the form of control for all services being a price cap:

- metering services;
- public lighting services;
- fee-based services; and
- quoted (non-standard) services.

Aurora has adopted the classification of these services as outlined in the AER's Framework and Approach.

This chapter sets out the control mechanisms for Aurora's *Alternative Control Services*, demonstrates the application of these control mechanisms in accordance with the requirements of the *Rules*, and sets out indicative prices for each service provided for each year of the forthcoming *Regulatory Control Period*.

20.2. Public lighting services

Public lighting services are those services provided by Aurora for:

- the provision, maintenance and replacement of public lighting assets owned by Aurora;
- the maintenance of public lighting assets owned by customers (contract lighting); and
- the provision, maintenance and replacement of Aurora owned public lighting poles.

Although not expressly addressed in the final Framework and Approach, Aurora interprets the 'repair, replacement and maintenance' of luminaires and public lighting poles, as the 'routine' provision of the repair, replacement or maintenance service.

Public lighting services exclude:

- the alteration and relocation of public lighting assets, which will be provided on a quoted service basis and is therefore categorised as a quoted (non-standard) service;
- the installation of contract lights, which will be provided on a quoted service basis and is therefore categorised as a quoted (non-standard) service; and
- the provision of new public lighting technologies, which will be classified as a *Negotiated Distribution Service*.

Public lighting services are unregulated in the current *Regulatory Control Period* and have previously never been regulated.

Aurora has historically derived its charges for public lighting services through an annuity approach, through its public lighting annuity model.

The AER, in its final Framework and Approach, proposed that public lighting services should be classified as *Direct Control Services* and further classified as *Alternative Control Services*, subject to a price cap form of control.

Aurora proposes to apply a price cap form of control for the forthcoming *Regulatory Control Period* to all public lighting services, with the charges for public lighting services provided under a schedule of fees, based on the current annuity approach. This is discussed in greater detail below.

20.3. AERS' Draft Distribution Determination

In its *Draft Distribution Determination* the AER has accepted Aurora's proposed annuity approach to the setting of prices for the provision of public lighting services. The AER has however considered that some of the inputs used in the model were inappropriate, in particular:

- the WACC rate;
- escalation rates; and
- the operating expenditure forecasts.

20.3.1. Form of control

Aurora accepts in principle the AER's proposed Form of Control, but notes that the mechanism as stated by the AER will result in uncertainty about pricing because of the year by year approach to price setting for these services.

To address these concerns, Aurora proposes that a "base-year" approach be used to set the prices for the first year of the forthcoming *Regulatory Control Period*, with the base-year prices escalated by a similar methodology to that used to escalate the annual revenue for *Standard Control Services*.

This approach will simplify the annual price setting for public lighting services and provide a degree of certainty about the future movements of prices for these services in the forthcoming *Regulatory Control Period*.

In outline, the approach to setting the base-year will have the following steps:

- nominal prices for each service for each year will be built up using cost inputs, with the inputs modified by the escalation factors appropriate to those inputs;
- the prices for each service will be aggregated to an expected annual revenue stream for public lighting services for each year;
- the NPV value of these annual revenues will be calculated, using the pre-tax nominal WACC as the discount rate;
- smoothed revenues for each year will be calculated using the same approach used by the AER in the PTRM;
- smoothed nominal prices for the base year will be calculated using the ratio between the smoothed and unsmoothed revenue for that year; and
- the nominal prices for each service for subsequent years will be calculated by escalating the base year prices by CPI, the real labour escalators and the appropriate X-factor determined in the initial smoothing process.

20.3.2. Changes to WACC Rates

In the public lighting services annuity model submitted with its *Regulatory Proposal,* Aurora proposed the use of a pre-tax real WACC.

The AER has accepted the use of a pre-tax real WACC in applying Aurora's annuity model.

Aurora does not agree with the value of the WACC determined by the AER. Aurora's assessment of the AER's calculation of WACC is discussed in detail in chapter 9 of this *Revised Regulatory Proposal*.

20.3.3. Escalation rates

Aurora considers that the AER has adopted an inconsistent approach to the application of escalators within the service classifications. The AER has chosen to apply escalators to some components but not others. Aurora has adopted a consistent application of all escalators to all revised expenditure forecasts.

The AER has also rejected Aurora's application of a 3 per cent efficiency factor across labour rates. This is discussed further in section 6.2 of this *Revised Regulatory Proposal*. Aurora has removed the 3 per cent efficiency from the labour rates for all its operating expenditure forecasts.

Aurora has prepared revised forecasts for operating expenditure associated with the provision of public lighting services as part of this *Revised Regulatory Proposal*.

20.3.4. Operating expenditure forecasts

The AER has rejected Aurora's proposed public lighting operating expenditure for the following reasons:

- Aurora provided insufficient evidence to support large increases in total operating expenditure for the forthcoming *Regulatory Control Period*;
- Aurora provided insufficient evidence to support two proposed step change increases in 2012-13 and 2015-16;
- a suggestion that there were a number of errors contained in Aurora's operating expenditure forecasts; and
- the inclusion of trials/evaluation costs which are classified as a negotiated distribution service.

Aurora's response to the above is contained within the following sections.

20.3.5. Insufficient evidence

In its *Draft Distribution Determination,* the AER has highlighted that through its detailed review process several inconsistencies exist in Aurora's documentation for public lighting services. Aurora accepts the AER's findings and has reviewed its Public Lighting Management Plan and documentation. Aurora provides this amended Management Plan as an attachment to this *Revised Regulatory Proposal*.

20.3.6. Step-change 2012-13 and 2015-16

The AER has rejected the Aurora step changes that were forecast to occur during the 2012-13 and 2015-16 years due to insufficient information on the drivers for this expenditure.

Aurora accepts that these programs may have not included sufficient supporting information and has reviewed its operating expenditure forecasts. Aurora provides amended operating forecasts as part this *Revised Regulatory Proposal*.

20.4. Levels of service

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

The levels of service currently provided by Aurora are established in accordance with the requirements of:

- Aurora's Distribution Customer Charter which states the services and the level and standard of such services that a customer is entitled to receive from Aurora. Individual service failures against the service timeframes result in a GSL payment to the customer. The Distribution Customer Charter is approved by OTTER pursuant to clause 8.3.1 of the *TEC*;
- section 8.2.3 of the *TEC* which requires Aurora to repair or replace an item of public lighting within seven business days of being notified by any person that such repair or replacement is necessary, unless the public lighting provider has contractual or other arrangements with another party;
- standards including AS/NZS 1158 – Lighting for Roads and Public Spaces. Aurora's public lighting assets are classified by AS/NZS 1158 into the following categories:
  - Category 'V' – generally referred to as major public lighting, which is applicable to roads where the visual requirements of motorists are dominant; and
  - Category 'P' – generally referred to as minor public lighting, which is applicable to roads where the visual requirements of pedestrians are dominant. This category also applies to outdoor public areas, other than roads, where the visual requirements of pedestrians are dominant, such as outdoor shopping precincts.

This classification will influence luminaire type and size and therefore associated costs;

- AS/NZS 1158.1.2, which recommends that Aurora undertake a maximum maintenance cycle of four years for bulk replacement programs associated with major public lighting and minor public lighting; and
- AS/NZS 1158.1.2 Section 14.5.2, which requires that Aurora undertake a night patrol program for major public lighting to ensure that the minimum service availability of lamps at a compliant public lighting installation is 95 per cent, and to ensure that all major lighting schemes maintain designed illumination levels.

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

20.5. Application and demonstration of form of control

This section outlines Aurora's proposed application of the control mechanism for public lighting services and the method by which compliance with the control mechanisms can be demonstrated, in accordance with clauses 6.2.6(b), (c) and 6.8.2(c)(3) of the *Rules*.

In establishing the control mechanism, Aurora has not utilised the Building Block approach of Part C of Chapter 6 of the *Rules*.

Aurora proposes to apply a price cap form of control for the forthcoming *Regulatory Control Period* to all public lighting services. The control mechanism will be an annuity approach that sets a cap on the maximum daily fee for each lighting class. This is consistent with the current approach adopted by Aurora and with the AER's stated likely approach for the forthcoming *Regulatory Control Period*[1]. Aurora proposes to apply the control mechanism through an annuity approach that derives a daily fee for:

- each luminaire type, for the provision, maintenance and replacement of public lighting assets owned by Aurora;
- each luminaire type, for the maintenance of public lighting assets owned by customers (contract lighting); and
- the provision, maintenance and replacement of certain Aurora owned poles.

These charges reflect the fact that it is possible to forecast costs associated with public lighting services on the basis of past expenditure and forecast inspection cycles. As such, it is possible to develop a fee associated with the provision of each service type.

Although Aurora's poles and lighting structures revenues are typically classified as *Standard Control Services*, there are certain poles which Aurora, for historical reasons, owns and levies a surcharge (these were assets assigned to Aurora (Hydro) during the period 1974-81). Aurora uses the annuity approach to determine the charges associated with the provision, maintenance and replacement of these Aurora owned poles. A single charge is calculated for this service, regardless of the pole type.

The annuity approach:

- undertakes an annuity calculation for each public lighting type for each year using the Excel-based PMT function;
- nominal revenue, and X-factors, for each year will be built up using the mechanisms within the PTRM;
- smoothed nominal prices for the base year will be calculated using the ratio between the smoothed and unsmoothed revenue for that year; and
- the nominal prices for each service for subsequent years will be calculated by escalating the base year prices by CPI, the real labour escalators and the appropriate X-factor determined in the initial smoothing process.

Aurora's proposed control mechanism for the provision of public lighting services is discussed in detail in the paper appended as an attachment to this *Revised Regulatory Proposal*.

1 AER, Final Framework and Approach Paper, Aurora Energy Pty Ltd, 29 November 2010, p.74.

To determine the final charge for customers a NUOS charge is also applied. However, these charges are not *Alternative Control Services*, but are rather derived as part of the tariff setting process for *Standard Control Services* and are not included in the proposed prices set out in this chapter.

20.6. Aurora's proposed X factors

Aurora has used the formula included in the PTRM to establish the X factors for the provision of public lighting services.

Aurora has designed its X factors to minimise the price impacts that will be faced by customers by applying different X factors for each *Regulatory Year* of the forthcoming *Regulatory Control Period*.

The resulting X factors for each year of the forthcoming *Regulatory Control Period* are set out in Table 82.

Table 82

X Factors

	2012-13	2013-14	2014-15	2015-16	2016-17
X factor (%)	(10.59)	(0.02)	(1.00)	2.55	5.45

20.7. Indicative prices

Table 83 provides indicative prices for public lighting services (where the public lighting is owned by Aurora) for each year of the forthcoming *Regulatory Control Period*.

Table 83

Indicative prices for public lighting services (cents 2011-12)

Lighting type	2012-13 (c/day)
50W mercury vapour	33.947
80W mercury vapour – Aeroscreen	33.947
80W mercury vapour – Artcraft decorative	54.691
125W mercury vapour	39.601
250W mercury vapour	40.102
400W mercury vapour	44.951
70W sodium vapour	36.387
100W sodium vapour	36.534
150W sodium vapour	40.896
250W sodium vapour	41.032
400W sodium vapour	41.254
150W metal halide	40.896
250W metal halide	41.032
2 x 20W fluorescent	38.357
2 x 40W fluorescent	37.923
42W compact fluorescent	36.321
60W incandescent	33.253

Table 84 provides indicative prices for contract lighting services for the forthcoming *Regulatory Control Period*.

Table 84

Indicative prices for contract lighting services (cents 2011-12)

Lighting type	2012-13 (c/day)
50W mercury vapour	22.087
80W mercury vapour	22.074
125W mercury vapour	23.101
250W mercury vapour	23.182
400W mercury vapour	23.243
70W sodium vapour	22.294
150W sodium vapour	23.897
250W sodium vapour	23.860
400W sodium vapour	23.942
150W metal halide	23.897
250W metal halide	23.860
400W metal halide	23.860
1 x 20W fluorescent	22.147
2 x 20W fluorescent	22.279
1 x 40W fluorescent	22.155
2 x 40W fluorescent	23.309
3 x 40W fluorescent	23.450
4 x 40W fluorescent	24.378
60W incandescent	22.071
100W incandescent	23.084
Pole surcharge	24.116

Indicative prices have been shown in 2011-12 cents per day and are considered indicative only, are not binding and are for the purposes of providing a high level overview of the expected price impact for the forthcoming *Regulatory Control Period* only.

Actual prices for the forthcoming *Regulatory Control Period* will be determined following the submission and approval of Aurora's annual Pricing Proposal to the AER in accordance with clause 6.18.2 of the *Rules*.

All indicative prices are exclusive of GST.

21. Alternative Control Services – Fee-based Services

21. Alternative Control Services – Fee-based Services

21.1. Overview and Rules requirements

Clauses 6.2.6(b) and (c) of the *Rules* provide that, for *Alternative Control Services*, the control mechanism must have a basis stated in the Distribution Determination and the control mechanism may (but need not) utilise elements of Part C of Chapter 6 of the *Rules* (with or without modification).

Clause 6.8.2(c)(3) of the *Rules* provides that Aurora's *Regulatory Proposal* must, for *Direct Control Services* classified as *Alternative Control Services*, provide a demonstration of the application of the control mechanism, as set out in the Framework and Approach paper and the necessary supporting information.

Clause 6.8.2(c)(4) of the *Rules* provides that Aurora's *Regulatory Proposal* must, for *Direct Control Services*, provide indicative prices for each year of the *Regulatory Control Period*.

As identified in chapter 6 of Aurora's *Regulatory Proposal*, the AER's final Framework and Approach paper classified the following categories of *Direct Control Services* as *Alternative Control Services* with the form of control for all services being a price cap:

- metering services;
- public lighting services;
- fee-based services; and
- quoted (non-standard) services.

Aurora has adopted the classification of these services as outlined in the AER's Framework and Approach.

This chapter sets out the control mechanisms for Aurora's *Alternative Control Services*, demonstrates the application of these control mechanisms in accordance with the requirements of the *Rules*, and sets out indicative prices for each service provided for the forthcoming *Regulatory Control Period*.

21.2. Fee-based services

Fee-based services are those services provided by Aurora where the service is, in general, provided for the benefit of a single customer rather than uniformly supplied to all customers. These services are provided at the request of a third party and are typically initiated by way of a service request received from a retailer.

Examples of services Aurora provides on a fee-basis include, but are not limited to:

- energisation;
- de-energisation;
- re-energisation;
- meter alteration;
- meter testing;
- new connection – permanent supply;
- supply abolishment – removal of meters and service connection;
- renewable energy connection; and
- other miscellaneous services.

These services are largely homogenous in nature and therefore a fixed fee can be set in advance with reasonable certainty. That is, the costs inputs in providing these services do not involve material variations.

In the current *Regulatory Control Period*, these services form Declared Special Services and have been classified by OTTER as:

- standard special services (for energisation, de-energisation, re-energisation, meter alteration and meter testing) – these services are regulated under a weighted average price cap with prices charged on the basis of fixed fees. Individual service prices are determined annually through the price setting process with OTTER with increases, where approved, not exceeding the Weighted Average Wage Index for the Electricity, Gas and Water Supply Industry in the preceding calendar year; and
- other special services (all other proposed fee-based services) – these services are not regulated under a price cap although the services and their prices are approved by OTTER on an annual basis through Aurora's price setting process.

The AER, in its final Framework and Approach, proposed that all fee-based services should be classified as *Direct Control Services* and further classified as *Alternative Control Services*, subject to a price cap form of control.

That is, that a price cap should continue to be applied to all standard special services and that the other special services should be incorporated into the price cap form of control.

Aurora proposes to apply a price cap form of control for the forthcoming *Regulatory Control Period* to all fee-based services (both standard and other special services), with caps applied to individual services under a schedule of fees. This is discussed in greater detail below.

21.3. AER's Draft Distribution Determination

In its *Draft Distribution Determination*, the AER did not fully accept Aurora's proposed price cap mechanism. Rather, the AER considered that the cost build-up approach used by Aurora to arrive at the charges for the services was an acceptable control mechanism and that a number of the input variables required modification.

Based upon the AER's decision to use a cost build-up approach as the control mechanism for fee-based services, the AER reviewed the input costs used by Aurora.

In particular, the AER:

- accepted Aurora's proposed labour rates;
- accepted Aurora's proposed material costs, but adjusted several services to ensure consistency across types of service;
- accepted the quantum of allocated overheads;
- removed any services associated with the provision of PAYG metering, which reduced the operating and capital expenditure inputs to the fee-based services pricing model;
- estimated and adjusted travel times for several services;
- estimated and adjusted task times for several services;
- altered the charging regime for "tee-ups";
- altered the crew requirements for one task; and
- disallowed a fee for the late cancellation of a requested service.

Further, the AER considered that some of the inputs used by Aurora to arrive at the prices for some of the services were inefficient, and modified these inputs to reflect more efficient values.

21.3.1. Form of control

Aurora accepts in principle the AER's proposed Form of Control, but notes that the mechanism as stated by the AER will result in uncertainty about pricing because of the year by year approach to price setting for these services.

To address these concerns, Aurora proposes that a "base-year" approach be used to set the prices for the first year of the forthcoming *Regulatory Control Period*, with the base-year prices escalated by a similar method to that used to escalate the annual revenue for *Standard Control Services*.

This approach will simplify the annual price setting for fee-based services and provide a degree of certainty about the future movements of prices for these services in the forthcoming *Regulatory Control Period*.

In outline, the approach to setting the base-year will have the following steps:

- nominal prices for each service for each year will be built up using cost inputs, with the inputs modified by the escalation factors appropriate to those inputs;
- the prices for each service will be aggregated to an expected annual revenue stream for fee-based services for each year;
- the NPV value of these annual revenues will be calculated, using the pre-tax nominal WACC as the discount rate;
- smoothed revenues for each year will be calculated using the same approach used by the AER in the PTRM;
- smoothed nominal prices for the base year will be calculated using the ratio between the smoothed and unsmoothed revenue for that year; and
- the nominal prices for each service for subsequent years will be calculated by escalating the base year prices by CPI, the real labour escalators and the appropriate X-factor determined in the initial smoothing process.

21.3.2. Changes to materials input costs

The AER has accepted Aurora's proposed method of charging material costs.

The AER has accepted all Aurora's proposed material costs with the exception of the following services:

- Site visit – credit action or site issues;
- Renewable Energy Connection – after hours
- Temporary supply underground – single phase – temporary position; and
- Temporary Builders Connection – after hours.

Aurora accepts the AER's revisions to the materials input cost for these services.

21.3.3. Removal of PAYG

The AER has removed costs relating to Aurora's PAYG services from Aurora's proposed operating and capital expenditure forecasts for fee-based services on the basis that these services fall within unregulated services.

Aurora accepts the AER's decision to remove the fee-based services associated with the provision of PAYG services. Aurora has also reclassified this expenditure as unregulated to ensure an appropriate allocation of shared services overheads still occurs.

21.3.4. Changes to times in input model

The AER has made the following statement:

> *"The AER has assessed each input into the fee based services and quoted services cost build-up. The AER has rerun Aurora's fee based services model with the AER's revised inputs. The AER has relied on the result of this process to make its draft determination on price caps for fee based services."*[1]

The AER has proposed revised task or travel times to a number of services within the "AER amendments to fee-based services model". These are::

- Site visit, no appointment;
- De-energisation for credit action;
- Interval site re-energisation or de-energisation;
- Adjust time clock;
- Truck tee-ups during normal hours;
- Wasted visits; and
- Site visit to de-energise for credit purposes.

Aurora accepts the majority of the AER's estimates and revisions of task times associated with the above services.

Aurora does not accept the AER's proposed alteration to the task time associated with the two services relating to site visits to de-energise for credit purposes or site issues.

In the build-up of costs for these services in its *Regulatory Proposal*, Aurora proposed an on-site time of 40 minutes. The AER did not accept this task duration, and revised the estimated task duration to eight minutes.

Aurora contends that the AER's revision is unacceptable.

These services are performed at the request of, and on behalf of, the customer's retailer. Rather than simply removing the fuses, as occurs for a normal de-energisation, these services require that Aurora must physically disconnect the customer premises from the distribution network. This may require opening a turret, in the case of an underground supply, or removing overhead infrastructure.

Further, since these services may also be requested due to an "illegal connection", the actual physical disconnection may be at a non-standard location, and may involve the presence of police.

In consideration of these matters, Aurora contends that an on-site time of no less than 20 minutes is required and has used this time as the basis of its revised price.

21.3.5. Late cancellation fee

The AER has rejected Aurora's proposed late cancellation fee.

Aurora accepts the AER's decision to not allow Aurora to charge a fee for the late cancellation of services.

21.3.6. Labour inputs for de-energisation for credit

In its *Draft Distribution Determination*, the AER has rejected Aurora's proposed labour inputs for de-energisation for credit.

Aurora does not accept the AER's proposed alteration to the number of crew associated with the two services relating to site visits to de-energise for credit purposes or site issues from two to one.

In the build of costs for these services in its *Regulatory Proposal*, Aurora included the requirement for two crew-members to attend. The AER did not accept this level of staffing, and reduced the allowed crew to one.

Aurora contends that the AER's revision is unacceptable.

Prior to 2000 the Hydro, and subsequently Aurora, generally used a two person crew for the provision of these services. In early 2000, Aurora chose to schedule a one person crew for the provision of these services. By 2002, Aurora found that the number of safety incidents, and assaults on its staff performing these services, had increased to an unacceptable level. Aurora formed the position that one man crews for this service had created unsafe working conditions for its employees.

In consideration of these matters, Aurora uses two person crews for the provision of this service to mitigate safety concerns, and has built up its costs for this service accordingly.

21.4. Levels of service

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

The levels of service currently provided by Aurora are established in accordance with the requirements of:

- Aurora's Distribution Customer Charter which states the services and the level and standard of such services that a customer is entitled to receive from Aurora. Individual service failures against the service timeframes result in a GSL payment to the customer. The Distribution Customer Charter is approved by OTTER pursuant to clause 8.3.1 of the *TEC*;
- Aurora's prices for the provision of Distribution Special Services which provides for services to be delivered in accordance with established service level agreements and regulatory requirements. The prices for the provision of Distribution Special Services are approved by OTTER as part of the annual pricing approval process;
- the *TEC*, in particular section 9.17, which governs the testing of metering equipment of non-contestable customers and the timeframes within which field testing must be conducted, and states that Aurora must, within 15 business days of a request from a customer, test metering equipment to ascertain whether the metering equipment is defective;
- Aurora's service level agreement with retailers which governs timeframes for delivery of certain categories of fee-based services; and
- internally derived performance targets, in circumstances where service levels have not been externally imposed or approved. These are based upon historic business practice, with recognition of changes in customer service delivery expectations over time.

1 Draft Distribution Determination Aurora Energy November 2011, Sect E.1.2, page 359

21. Alternative Control Services – Fee-based Services

The forecast costs for fee-based services for the forthcoming *Regulatory Control Period* are based on Aurora maintaining its existing service levels, in compliance with its regulatory obligations. Changes to the standard conditions or levels of service provision to reflect specific customer requirements will constitute a quoted (non-standard) service.

Table 85 contains:

- a list of fee-based services categories;
- the service level obligations associated with each service; and
- related service targets.

Table 85

Service levels for fee-based services

Service category	Source	Service level
Energisation, de-energisation and re-energisation	Electricity Supply Industry (Tariff Customers) Regulations 2008, section 31	10 business days for a new connection if no extension of the network is required. 40 business days for a new connection if an extension of the network is required. 1 business day if a reconnection does not involve any changes to the network. 10 business days if a reconnection involves changes to the network.
Meter alteration	Service Level Agreement with retailer	All services to be delivered no later than 10 business days of receiving retailer service request (unless otherwise agreed).
Meter test	*TEC*, section 9.17.1	Test of metering equipment to be delivered within 15 business days of a request from a Tariff Customer.
New connection – permanent supply	Electricity Supply Industry (Tariff Customers) Regulations 2008, section 31	10 business days for a new connection if no extension of the distribution network is required.
Supply abolishment	Service level agreement with retailer	All services to be delivered no later than 5 business days of receiving retailer service request (unless otherwise agreed).
Renewable energy connection	Electricity Supply Industry (Tariff Customers) Regulations 2008, section 31	10 business days for a new connection if no extension of the distribution network is required.
New connection – temporary and temporary in permanent position	Electricity Supply Industry (Tariff Customers) Regulations 2008, section 31	10 business days for a new connection if no extension of the distribution network is required.
New connection – temporary show and carnival connection	Electricity Supply Industry (Tariff Customers) Regulations 2008, section 31	10 business days for a new connection if no extension of the distribution network is required.
Truck tee-up	Internal target between Aurora and contractor	2 business days after receiving advice from the contractor.
Miscellaneous services	Electricity Supply Industry (Tariff Customers) Regulations 2008, section 31	10 business days for a new connection if no extension of the distribution network is required.

21.4.1. Application and demonstration of form of control

This section outlines Aurora's proposed application of the control mechanism for fee-based services and the method by which compliance with the control mechanisms can be demonstrated, in accordance with clauses 6.2.6(b), (c) and 6.8.2(c)(3) of the *Rules*.

In establishing the control mechanism, Aurora has not utilised Part C of Chapter 6 of the *Rules*.

Aurora proposes to apply a price cap form of control for the forthcoming *Regulatory Control Period* to all fee-based services. 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*[2].

Aurora proposes to apply the control mechanism for each of the fee-based services to be offered, through the build up, through Aurora's fee-based services model, of the following cost components:

- labour;
- materials;
- contractors; and
- other costs.

Aurora's fee-based services model:

- establishes prices for each service for each year built up using cost inputs, with the inputs modified by the escalation factors appropriate to those inputs;
- nominal revenue, and X-factors, for each year will be built up using the mechanisms within the PTRM;
- smoothed nominal prices for the base year will be calculated using the ratio between the smoothed and unsmoothed revenue for that year; and
- the nominal prices for each service for subsequent years will be calculated by escalating the base year prices by CPI, the real labour escalators and the appropriate X-factor determined in the initial smoothing process.

Aurora's proposed control mechanism for the provision of fee-based services is discussed in detail in the paper appended as an attachment to this *Revised Regulatory Proposal*.

21.5. Aurora's proposed X factors

Aurora has used the formula included in the PTRM to establish the X factors for the provision of fee-based services.

Aurora has designed its X factors to minimise the price increase that will be faced by customers by applying consistent X factors for each *Regulatory Year* of the forthcoming *Regulatory Control Period*.

The resulting X factors for each year of the forthcoming *Regulatory Control Period* are set out in Table 86.

Table 86

X Factors

	2012-13	2013-14	2014-15	2015-16	2016-17
X factor (%)	1.01	1.01	1.01	1.01	1.01

2 AER, Final Framework and Approach Paper, Aurora Energy Pty Ltd, 29 November 2010, page 74.

21.6. Indicative prices

Table 87 provides indicative prices for fee-based services for the forthcoming *Regulatory Control Period.*

Table 87

Indicative prices for fee-based services (dollars 2011-12)

Service	2012-13 ($)
De-energisation, re-energisation and special reads	
Site visit – no appointment	53.19
Site visit – non scheduled visit	127.00
Site visit – same day premium service	327.72
Site visit – after hours	846.70
Site visit – credit action or site issues	80.84
Site visit – rectification of illegal connection	253.83
Site visit – interval metering	63.32
Meter alteration	
Tariff alteration – single phase	186.05
Tariff alteration – three phase	253.83
Adjust time clock	60.82
Install pulse outputs	169.10
Remove meter	277.56
Meter alteration – after hours visit	813.46
Meter alteration – wasted visit	101.31
Meter test	
Meter test – single phase	304.67
Meter test – multi phase	609.71
Meter test – CT	677.51
Meter test – after hours	813.46
Meter test –wasted visit	101.31
Supply establishment	
New connection – after hours	813.46
Install additional service span – single phase	451.33
Install additional service span – single phase – additional spans	340.74
Install additional service span – multi phase	642.58
Install additional service span – multi phase – additional spans	532.00
New connection – wasted visit	101.31
Supply abolishment	
Remove service & meters	277.56
Supply abolishment – after hours	813.46
Supply abolishment – wasted visit	166.24
Renewable energy connection	
Renewable energy connection	186.05
Renewable energy connection – after hours	1,446.42
Renewable energy connection – wasted visit	166.24

Table 87

Indicative prices for fee-based services (dollars 2011-12) (continued)

Service	2012-13 ($)
Temporary builders connection	
Temporary supply underground – single phase – temporary position	202.99
Temporary supply underground – three phase – temporary position	309.17
Temporary supply underground – single phase – permanent position	309.17
Temporary supply underground – three phase – permanent position	309.17
Temporary supply overhead – single phase – temporary position	562.65
Temporary supply overhead – three phase – temporary position	753.90
Temporary supply overhead – single phase – permanent position	562.65
Temporary supply overhead – three phase – permanent position	753.90
Temporary supply – after hours	1,446.42
Temporary supply – wasted visit	166.24
Temporary show & carnival connection	
Temporary supply – underground	338.56
Temporary supply – overhead mains	428.80
Temporary supply – overhead service	868.73
Temporary supply – after hours	813.46
Temporary supply – wasted visit	166.24
Truck tee-up	
Tee-up – initial 30 mins – each additional 15 min block	188.28 94.51
Tee-up – after hours	1,512.27
Tee-up – no truck – after hours	1,335.84
Tee-up – wasted visit	166.24
Miscellaneous services	
Open turret	152.15
Addition/alteration to connection point	338.56
Connection of new mains to existing installation	236.88
Data download	338.56
Alteration to unmetered supply	253.83
Miscellaneous service	135.20
Miscellaneous service – after hours	813.46
Miscellaneous service – wasted visit	166.24

Indicative prices have been shown in 2011-12 dollars per service and are considered indicative only, are not binding and are for the purposes of providing a high level overview of the expected price impact for the forthcoming *Regulatory Control Period* only.

Actual prices for the forthcoming *Regulatory Control Period* will be determined following the submission and approval of Aurora's annual Pricing Proposal to the AER in accordance with clause 6.18.2 of the *Rules*.

All indicative prices are exclusive of GST.

21. Alternative Control Services – Fee-based Services

22. Alternative Control Services – Quoted Services

22. Alternative Control Services – Quoted Services

22.1. Overview and Rules requirements

Clauses 6.2.6(b) and (c) of the *Rules* provide that, for *Alternative Control Services*, the control mechanism must have a basis stated in the Distribution Determination and the control mechanism may (but need not) utilise elements of Part C of Chapter 6 of the *Rules* (with or without modification).

Clause 6.8.2(c)(3) of the *Rules* provides that Aurora's *Regulatory Proposal* must, for *Direct Control Services* classified as *Alternative Control Services*, provide a demonstration of the application of the control mechanism, as set out in the Framework and Approach paper and the necessary supporting information.

Clause 6.8.2(c)(4) of the *Rules* provides that Aurora's *Regulatory Proposal* must, for *Direct Control Services*, provide indicative prices for each year of the *Regulatory Control Period*.

As identified in chapter 6 of Aurora's *Regulatory Proposal*, the AER's final Framework and Approach paper classified the following categories of *Direct Control Services* as *Alternative Control Services* with the form of control for all services being a price cap:

- metering services;
- public lighting services;
- fee-based services; and
- quoted (non-standard) services.

Aurora has adopted the classification of these services as outlined in the AER's Framework and Approach.

This chapter sets out the control mechanisms for Aurora's *Quoted Services*, demonstrates the application of these control mechanisms in accordance with the requirements of the *Rules*, and sets out indicative prices for each service provided for each year of the forthcoming *Regulatory Control Period*.

22.2. AER's Draft Distribution Determination

The AER has accepted Aurora's proposed formula for calculating *Quoted Services* charges, but has however applied a price cap to the hourly charge-out rates for labour.

The AER has set price caps on the charge out rates of labour based upon Aurora's indicative burdened Network Services labour rates for 2012-13. These burdened labour rates do not include any labour or inflation escalators and must have these escalators applied to provide a true representation of Aurora's costs.

The AER has not accepted Aurora's proposed labour efficiency factor applied to all unit rates across all forms of control. In its *Draft Distribution Determination*, the AER has adopted an inconsistent approach to the removal of these labour efficiencies within service classifications. The AER has chosen to remove these efficiencies from some components but not others. Aurora has removed the labour efficiency factor from all expenditure, across all forms of control, as part of its *Revised Regulatory Proposal*, including the labour rates for the provision of Quoted Services.

The AER has not set any prices for material, contractor or other costs, and these are to be charged at the cost incurred by Aurora at the time of providing the service.

Aurora accepts the AER decision on the methodology but proposes that a formal control mechanism is included to establish the labour component prices that will apply.

22.3. Quoted (non-standard) services

Quoted (non-standard) services are those services provided by Aurora where the nature and scope of the service is specific to individual customers' needs, and varies from customer to customer. As a consequence, the cost of providing the services cannot be estimated without first knowing the customer's specific requirements. It is not possible, therefore, to set a generic total fixed fee in advance for these services.

Requests for quoted (non-standard) services may be received from a customer or retailer on behalf of a customer.

Aurora provides a range of non-standard services on a quoted basis including, but not limited to:

- removal or relocation of Aurora's assets at a customer's (for example, the Tasmanian Government) request;
- services that are provided at a higher standard than the standard service, due to a customer's request for Aurora to do so;
- provision of public lighting schemes;
- provision of overhead and underground subdivisions for developers;
- relocation of assets at the request of a third party; and
- services that are provided through a non-standard process at a customer's request (for example, where more frequent meter reading is required).

The AER, in its final Framework and Approach, proposed that quoted (non-standard) services should be classified as *Direct Control Services* and further classified as *Alternative Control Services*, subject to a price cap form of control.

Aurora proposes to apply a price cap form of control for the forthcoming *Regulatory Control Period* to all quoted (non-standard) services, with caps applied to the individual unit costs of inputs. This is discussed in greater detail below.

22.3.1. Levels of service

The forecast costs for quoted (non-standard) services for the forthcoming *Regulatory Control Period* have been developed with regard to the levels of service currently provided by Aurora, including timeframes and conditions.

The levels of service currently provided by Aurora are established in accordance with the requirements of historic business practice, with recognition of changes in customer service delivery.

The forecast costs for quoted (non-standard) services for the forthcoming *Regulatory Control Period* are based on Aurora maintaining its existing service levels.

22.3.2. Application and demonstration of form of control

This section outlines Aurora's proposed application of the control mechanism for quoted (non-standard) services and the method by which compliance with the control mechanisms can be demonstrated, in accordance with clauses 6.2.6(b), (c) and 6.8.2(c)(3) of the *Rules*.

In establishing the control mechanism, Aurora has not utilised Part C of Chapter 6 of the *Rules*.

Aurora proposes to apply a price cap form of control for the forthcoming *Regulatory Control Period* to all quoted (non-standard) services, through a formula based approach (i.e. non building-block) with caps applied to the individual unit costs of inputs. This formula based approach will ensure that prices reflect the actual costs of service provision to meet the customer's specific needs.

The following cost build-up, sourced from Aurora's Design and Estimation Module of WASP (and including all applicable overheads), is proposed to be applied to establish the price caps on the individual components of quoted (non-standard) services:

$$Price = Labour + Materials + Contractors + Other\ Costs + Overheads$$

Where:

- labour and related expenditure includes costs associated with Aurora's internal resources and labour contractors. Costs are allocated to a job number in the WASP database by way of standard calculated rates. Labour rates are calculated on a skill level basis and are inclusive of labour on-costs. Labour rates for internal employees are calculated to include normal salaries and wages, associated payroll on-costs and employee/industry allowances. Payroll on-costs include public holidays, leave, superannuation, and payroll tax. Labour rates for productive work also recover the non-productive time of employees including attendance at general and safety meetings and down-time to perform administrative duties. External labour does not attract these labour costs as the charge-out rates paid by external firms include these costs in the rates;
- materials are directly allocated to work orders at cost. They include stock items distributed through Aurora's centralised warehouse or stores and specific purchases of irregular or low turnover items such as specialised transformers, or plant and equipment. An on-cost is added to stock material to cover the cost of purchasing, warehousing and delivery of materials held in Aurora's warehouses;
- contractors and external labour may be sourced to supplement the existing workforce for specific projects, additional workloads or to cover employee absences. Contractor costs are incorporated into job costs and therefore attract a portion of Network Services management and corporate shared services overheads as per internal labour costs;
- other costs include any other associated costs that are not captured within the above categories; and
- overheads will be applied to the final components of the service provision in accordance with the methodology set out in Aurora's proposed CAM.

These individual unit costs are considered appropriate as they are derived using the dedicated Design and Estimation Module within WASP, which adopts a well-established methodology for cost estimation. Aurora does not include a profit margin in any quoted (non-standard) services that it provides.

The prices for materials, contractors, other costs and overheads are levied on a cost-recovery basis.

Aurora proposes the following methodology for establishing the labour rates to apply each year of the *Regulatory Control Period*:

(1) The labour rates for 2012-13 will be the labour rates as calculated by Aurora taking into account the outcomes of Aurora's recently finalised EA and the removal of the 3 per cent efficiency factor.

(2) The labour rates for 2013-14 through 2016-17 will be calculated by multiplying the previous year's labour rate by the appropriate CPI and real labour escalator for that year as follows:

Where:

- *Labour Rate*^{i} is the labour rate for the forthcoming year that the new labour rate is being calculated;
- *Labour Rate*^{i}*-1* is the labour rate of the current year;
- *CPI*^{i} is the June CPI of the current year; and
- *Real Labour Escalator*^{i} is the June real labour escalation rate for the forthcoming year.

22.3.3. Indicative prices

Prices for quoted (non-standard) services will be calculated on an individual basis consistent with the methodology outlined above.

Aurora is unable to provide a full range of indicative prices for *Quoted Services* for each year of the forthcoming *Regulatory Control Period*, in accordance with clause 6.8.2(c)(4) of the *Rules*, as by their nature these services are dependent on a customer's specific requirements and cost inputs may vary significantly.

Aurora provides the following indicative prices for the labour rates that will apply to *Quoted* Services.

Table 88

Indicative prices for labour in quoted services

Labour	2012-13 ($ 2011-12)
Apprentice	80.34
Cable jointer	61.79
CC – Commercial metering	69.29
CC – Service crew	62.39
Designer	77.62
Distribution Electrical technician	62.16
Distribution linesman	56.81
Distribution linesman LL	61.95
Distribution operator	67.08
Electrical inspectors	66.15
Field service co-ordinator	86.66
Labourer OH	52.22
Meter reader	47.57
Pole tester	51.88
Project manager	77.77

22. Alternative Control Services – Quoted Services

23. Negotiating framework

23. Negotiating framework

The *Rules* require that Aurora prepare a Negotiating Framework to govern its approach to negotiating and reaching agreement with customers regarding the delivery of *Negotiated Distribution Services*. In compliance with this requirement Aurora has developed a Negotiating Framework.

This chapter provides an overview of the approach prescribed by the Negotiating Framework; as well as a brief description of the anticipated *Negotiated Distribution Service* to be offered by Aurora during the forthcoming *Regulatory Control Period*, being new public lighting technologies.

23.1. Rules requirements

The *Rules* require the following in relation to *Negotiated Distribution Services*:

- clause 6.8.2(c)(5) requires that a *Regulatory Proposal* must include, for services classified under the proposal as a *Negotiated Distribution Service*s, the proposed Negotiating Framework;
- clause 6.7.2 requires Aurora, when negotiating the terms and conditions of access to a *Negotiated Distribution Service*, to comply with its Negotiating Framework, Negotiated Distribution Service Criteria and specified *Rules* requirements;
- clause 6.7.5(a) requires Aurora to prepare a Negotiating Framework setting out the procedure to be followed during its negotiations with any person who wishes to receive a *Negotiated Distribution Service* from Aurora, as to the terms and conditions of access for the provision of the service;
- clause 6.7.5(b) requires that the Negotiating Framework for Aurora comply with, and be consistent with, the applicable requirements of the relevant Distribution Determination; and the minimum requirements for a Negotiating Framework as set out in clause 6.7.5(c);
- clause 6.7.5(c) requires that Aurora's Negotiating Framework must meet 10 specified minimum requirements (detailed below in section 23.5); and
- clause 6.7.5(d) requires that Aurora's Negotiating Framework must not be inconsistent with any of several specified requirements of Chapter 5 of the *Rules*.

Consistent with the requirements of the *Rules*, Aurora has prepared a Negotiating Framework to apply to its *Negotiated Distribution Service*s, that is, to its new public lighting technology services. The provisions of the Negotiating Framework are summarised in this chapter at a high level, whilst the Negotiating Framework itself is appended as an attachment to this *Revised Regulatory Proposal*. Aurora considers that its Negotiating Framework is compliant with the *Rules* requirements.

23.2. AER's Draft Distribution Determination

The AER rejected Aurora's proposed Negotiating Framework in its *Draft Distribution Determination* due to a perceived uncertainty surrounding Aurora's use of 'days' and 'business days'. The AER considers that Aurora should amend the proposed Negotiating Framework to consistently use 'business days' instead of 'days' when referring to specified time limits.

Aurora agrees with the AER's proposal and has amended its Negotiating Framework to reflect a common use of business days for all timeframes.

Aurora has appended a revised Negotiating Framework to this *Revised Regulatory Proposal*.

23.3. Negotiated Distribution Services

Aurora anticipates that it will provide one *Negotiated Distribution Service* for the forthcoming *Regulatory Control Period*, being its new public lighting technology services. These services relate to the provision of public lighting for pilot studies of new public lighting technologies. The Negotiating Framework will apply only to the negotiations undertaken in respect to the terms and conditions of access to these services, and has been developed to accommodate the nature of this service.

This classification of new public lighting technology services as a *Negotiated Distribution Service* is consistent with the AER's position which is set out in its *Framework and Approach* paper for Aurora. The AER considered that the inability to determine charges for these services upfront meant that classification as *Direct Control Services* was not practical. On this basis, the AER's likely approach to classifying new public lighting technologies is as a *Negotiated Distribution Service*.

New public lighting technology services were unregulated in the current *Regulatory Control Period*. These services have been delivered by Aurora in respect to a small trial involving LED light fittings. This trial is being conducted with the Kingborough Council to establish a benchmark for the potential future deployment of the LED light fittings within that council. This is a joint trial and is being funded by both Aurora and the Kingborough Council.

In view of the limited range of energy efficient public lighting options currently available, Aurora considers that there is significant potential for a more diverse range of new technologies to be piloted during the forthcoming *Regulatory Control Period*. Aurora will apply its Negotiating Framework when negotiating the terms and conditions of its involvement in public lighting technology pilots with customers such as local governments.

23.4. Outline of negotiating framework

Aurora developed its Negotiating Framework with regard to both the requirements of the *Rules*; and to the specific nature of new public lighting technology services. Notably, new public lighting technology services will comprise public lighting installations provided by Aurora for trials and pilots of luminaires that are not currently offered by Aurora.

The Negotiating Framework therefore accommodates Aurora's requirement for preliminary information about the trial technology in order to evaluate:

- compatibility of the proposed public lighting technology with its network and business requirements;
- impact on the current lighting product range;
- capital, installation, maintenance and other life cycle costs;
- compliance with AS/NZS 3000, AS/NZS 1158 and any other relevant standards; and
- any other technical aspects such as electrical data and availability of components.

The Negotiating Framework consequently sets out a requirement for the preliminary evaluation of the public lighting technology, before commencing negotiations regarding the terms and conditions of access. This means that Aurora has assurance regarding the suitability of the technology prior to commencing detailed negotiations in relation to pilot testing.

An overview of Aurora's Negotiating Framework is set out in Table 89.

Table 89

Provisions of Aurora's Negotiating Framework

Clause	Summary
1. *Rules*	This clause provides a general description of the requirements of the *Rules* and the requirement for Aurora to prepare its Negotiating Framework.
2. *Negotiated Distribution Services*	This clause sets out the *Negotiated Distribution Services* to be offered by Aurora during the forthcoming *Regulatory Control Period* (new public lighting technology services).
3. Application of Negotiating Framework	This clause provides a general description of the application of the Negotiating Framework, including a description of the parties to which it applies (Aurora and any Service Applicant) and provisions in the event of any inconsistency between the document and the *Rules*.
4. Written request for service	This clause set out the requirement to submit a written application requesting a *Negotiated Distribution Service* to Aurora.
5. Negotiate in good faith	This clause requires Aurora and the Service Applicant to negotiate in good faith for the terms and conditions of access to a *Negotiated Distribution Service*.
6. Provision of commercial information to Service Applicant	This clause provides for requests for commercial information from Aurora by the Service Applicant, and requires Aurora to provide the Service Applicant with prescribed information pertaining to the cost of providing a *Negotiated Distribution Service*.
7. Provision of commercial information to Aurora	This clause provides for requests for commercial information from the Service Applicant by Aurora.
8. Provision of confidential information	This clause sets out confidentiality requirements relating to the provision of any information.
9. Process and timeframes	This clause sets out the process and timeframes for negotiating the terms and conditions of access to a *Negotiated Distribution Service*.
10. Suspension of timeframe	This clause sets out suspension provisions setting out when negotiation timeframes may be suspended in specified circumstances.
11. Dispute resolution	This clause provides that disputes between Aurora and a Service Applicant must be dealt with in accordance with the dispute resolution process of Chapter 6 of the *Rules*.
12. Payment arrangements	This clause provides that the Service Applicant may be required to pay the direct expenses incurred by Aurora in processing the application for a *Negotiated Distribution Service*.
13. Impact on other Distribution Network Users	This clause requires that Aurora determine the potential impact of the *Negotiated Distribution Service* on other Distribution Network Users and notify and consult with any affected Distribution Network Users.
14. Results of negotiations	This clause requires that Aurora must publish the results of negotiations for access on its website.
15. Definitions and interpretation	This clause provides the definitions that are to apply in the Negotiating Framework

23. Negotiating framework

A schematic overview of the processes and timeframes set out under clause 9 of the Negotiating Framework is set out in Figure 12.

Figure 12

Negotiating Framework Processes and Timeframes

23.5. Compliance with Rules requirements

Aurora considers that the Negotiating Framework submitted as part of this *Regulatory Proposal* is compliant with the requirements of the *Rules*. Table 90 sets out the section of the Negotiating Framework that gives effect to the *Rules*.

Table 90

Negotiating Framework compliance with Rules

Rules	Rules Requirement	Negotiating Framework
6.7.5(c)(1)	A requirement that the Distribution Network Service Provider and a Service Applicant negotiate in good faith the terms and conditions of access to a *Negotiated Distribution Service*.	Clause 5
6.7.5(c)(2)	A requirement that the Distribution Network Service Provider provide all such commercial information a Service Applicant may reasonably require.	Clause 6.2
6.7.5(c)(3)	A requirement that the Distribution Network Service Provider: • identify and inform a *Service Applicant* of the reasonable costs and/or the increase or decrease in costs of providing the *Negotiated Distribution Service*; • demonstrate to a Service Applicant that the charges for providing the *Negotiated Distribution Service* reflect those costs and/or the cost increment or decrement (as appropriate); and • have appropriate arrangements for assessment and review of the charges and the basis on which they are made.	Clause 6.5
6.7.5(c)(4)	A requirement that the Service Applicant provide all commercial information the Distribution Network Service Provider may reasonably require.	Clause 7.2 Clause 7.4
6.7.5(c)(5)	A requirement that negotiations with a Service Applicant for the provision of the *Negotiated Distribution Service* be commenced and finalised within specified periods and that each party make reasonable endeavours to adhere to the specified time limits.	Clause 9.2
6.7.5(c)(6)	A requirement that disputes as to the terms and conditions of access for the provision of *Negotiated Distribution Service*s are to be dealt with in accordance with the relevant provisions of the Law and the *Rules*.	Clause 11.1
6.7.5(c)(7)	A requirement for payment by a Service Applicant of the Distribution Network Service Provider 's reasonable direct expenses.	Clause 12.2 Clause 12.3
6.7.5(c)(8)	A requirement that the Distribution Network Service Provider determine the potential impact on other Distribution Network Users.	Clause 13.1
6.7.5(c)(9)	A requirement that the Distribution Network Service Provider must notify and consult with any affected Distribution Network Users.	Clause 13.2
6.7.5(c)(10)	A requirement that the Distribution Network Service Provider publish the results of negotiations on its website.	Clause 14.1
6.7.5(d)	A requirement that the negotiating framework must not be inconsistent with any of the requirements of clauses 5.3, 5.4A, 5.5 and Chapter 6.	Clause 3.4
6.7.5(e)	A requirement that each Distribution Network Service Provider and Service Applicant who is negotiating for the provision of a *Negotiated Distribution Service* by the provider must comply with the requirements of the negotiating framework in accordance with its terms.	Clause 3.2
6.7.6(a)(1)	A provision that commercial information to be provided to a Service Applicant does not include confidential information provided to the Distribution Network Service Provider by another person.	Clause 8.1 Clause 8.2
6.7.6(a)(2)	A provision that commercial information to be provided to a Service Applicant may be provided subject to a condition that the Service Applicant must not provide any part of that commercial information to any other person without the consent of the Distribution Network Service Provider.	Clause 8.1 Clause 8.2
6.7.6(b)(1)	A provision that commercial information to be provided to a Distribution Network Service Provider does not include confidential information provided to the Service Applicant by another person.	Clause 8.1 Clause 8.2
6.7.6(b)(2)	A provision that commercial information to be provided to a Distribution Network Service Provider may be provided subject to a condition that the provider must not provide any part of that commercial information to any other person without the consent of the Service Applicant.	Clause 8.1 Clause 8.2

23. Negotiating framework

24. Confidential information

24. Confidential information

24.1. Claim for confidentiality

Clause 6.8.2(c)(6) of the *Rules* requires Aurora to provide an indication of the parts of this *Revised Regulatory Proposal* Aurora claims to be confidential and wants excluded from publication.

Certain information provided in documents accompanying this *Revised Regulatory Proposal* is confidential and Aurora therefore requests that it be treated as such by the AER and not published.

24.2. Confidential attachments

Aurora claims confidentiality over certain attachments identified in the table of Attachments to this *Revised Regulatory Proposal* on the grounds that such attachments:

(1) contain information that is not common knowledge or publicly available;

(2) contain information of a commercial value that would be reduced or destroyed by any disclosure;

(3) concerns the lawful commercial financial affairs of Aurora, and if disclosed, that information could unreasonably affect Aurora;

(4) contain information about a third party, which Aurora is not authorised to disclose;

(5) contain trade secrets;

(6) contain information that is the intellectual property of Aurora;

(7) constitute an internal working document; and/or

(8) contain information which may injure the public interest if disclosed.

No information contained in the body of this *Revised Regulatory Proposal* is information which Aurora considers to be confidential. Aurora has set out the basis of its claims for confidentiality over the attachments in the table of attachments to this *Revised Regulatory Proposal*.

Where such confidentiality exists within the attachment Aurora has redacted those confidential parts from these attachments and provides a `public' version of these attachments. Where Aurora considers the entire attachment should remain confidential it has not provided a `public' version.

24. Confidential information

25. Indicative pricing

25. Indicative pricing

25.1. Rules requirements

Clause 6.8.2 (c)(4) of the *Rules* requires Aurora's *Regulatory Proposal* include indicative prices for *Direct Control Services* for each year of the *Regulatory Control Period.*

This chapter provides an outline of Aurora's methodology and assumptions used to determine indicative prices for *Standard Control Services* for the forthcoming *Regulatory Control Period.*

25.2. Control mechanism

The AER's control mechanism for Aurora, as prescribed in the AER's Framework and Approach paper for *Standard Control Services,* is consistent with Aurora's current regulatory arrangements. This requires Aurora to:

- apply a fixed revenue cap control mechanism;
- determine ARR using a Building Block approach; and
- determine usage-based prices that are calculated for specific services in accordance with recovering at least avoidable cost but no more than stand-alone costs for each service plus daily or fixed charges.

25.3. AER's Draft Distribution Determination

The AER's control mechanism for Aurora remains consistent with the AER's Framework and Approach paper for *Standard Control Services* and that proposed by Aurora.

In its *Draft Distribution Determination* the AER estimates that a typical residential customer's bill will fall on average by about 0.1 per cent per annum over the forthcoming *Regulatory Control Period.* The AER has made this assessment based upon its own calculations of an estimated customer bill of $2,000.

Aurora has undertaken its own estimate of customer prices based upon its revised forecasts for expenditure and revenue, and updated consumption forecasts provided by ACIL Tasman.

25.4. Carry-over of adjustments

In accordance with chapter 6 of the *Rules,* the Building Blocks are specified in clause 6.4.3(a)(6) with respect to any carry-over amounts from previous determinations. Any adjustments to carry-over amounts arising from the current *Regulatory Control Period* will be calculated and submitted as part of Aurora's 2012 Pricing Proposal.

25.5. Annual revenue requirement

Annual smoothed revenue for *Standard Control Services* has been determined in accordance with the Building Block approach detailed in chapter 17 of this *Revised Regulatory Proposal* and as calculated in the AER's PTRM.

25.6. Energy consumption forecasts

Aurora's total energy consumption has experienced an unprecedented decline over the past two years. A full econometric approach has been undertaken by ACIL Tasman to assess the underlying drivers of the decline and to determine the most appropriate growth factors for forthcoming *Regulatory Control Period.*

For the purpose of determining indicative prices for the forthcoming *Regulatory Control Period,* Aurora has applied a revised consumption forecasts that has been provided by ACIL Tasman.

25.7. Indicative prices

For the purposes of determining indicative prices Aurora has adopted an approach of segregating total network sales by the following customer classes:

- residential;
- small business – LV;
- large business – LV;
- large commercial – HV;
- irrigation; and
- unmetered supplies.

Separate consumption forecasts have been produced for each customer class.

Table 91 provides an indication of revised distribution prices for *Standard Control Services* by customer class. These prices have been calculated using energy consumption forecasts and annual revenue requirements at the customer class level.

Table 91

Indicative prices (nominal cents)

Customer Class	2012-13 (c/kWh)	2013-14 (c/kWh)	2014-15 (c/kWh)	2015-16 (c/kWh)	2016-17 (c/kWh)
Residential	7.42	7.76	8.09	8.44	8.47
Small business – LV	9.33	9.56	9.78	9.99	9.83
Large business – LV	4.62	4.69	4.75	4.79	4.67
Large commercial – HV	1.46	1.51	1.55	1.58	1.56
Irrigation	7.37	7.65	8.00	8.23	8.38
Unmetered supplies	8.05	8.41	8.75	9.09	9.09

Indicative prices have been shown in nominal cents per kWh for energy consumed, however, it is noted that actual prices depend on specific tariffs which are made up of additional components including fixed, energy and demand charges. For this reason the above prices are considered indicative only, are not binding and are for the purposes of providing a high level overview of the expected price impact for the forthcoming *Regulatory Control Period* only.

Actual prices for the forthcoming *Regulatory Control Period* will be determined following the submission and approval of Aurora's Tariff Strategy and annual Pricing Proposal to the AER in accordance with clause 6.18.7 of the *Rules*.

All indicative prices are exclusive of GST.

26. Certification statement

26. Certification statement

In accordance with clauses S6.1.1(5) and S6.1.2(6) of the *Rules*, Aurora is required to lodge a *Regulatory Proposal* that contains a certification by two directors of Aurora as to the reasonableness of the key assumptions that underlie the forecasts of capital and operating expenditure.

This certification statement is consistent with the form required in the RIN and is appended as an attachment to this *Revised Regulatory Proposal*.

26. Certification statement

Table of attachments
Listing of figures and tables
Glossary of terms/abbreviations

Table of attachments

Document ID	Document name	Confidentiality claim clause	Confidential
AE101	Certification Statement		No
AE102	Negotiating Framework		No
AE103	TMR Contract	24.2 (1); 24.2 (2); 24.2 (3); 24.2 (4); 24.2 (8)	Yes
AE104	SKM Annual Material Escalation Factors 2013-17		No
AE105	SKM Material Cost Escalation Factors - Dec 2011		No
AE106	ACIL Tasman Response to SKM MMA Analysis	24.2 (1); 24.2 (2); 24.2 (3); 24.2 (6); 24.2 (7); 24.2 (8)	Yes
AE107	ACIL Tasman Energy Consumption Forecast		No
AE108	ACIL Tasman Customer Forecast		No
AE109	Summary of Demand Forecast		No
AE110	Cost Of Capital Paper		No
AE111	Management Plan 2012 – Public Lighting		No
AE112	Aurora Response - Public Lighting		No
AE113	Aurora Response – Metering		No
AE114	Aurora Response – HV Underground Cables		No
AE115	Aurora Response – LV Underground Cables		No
AE116	Aurora Response – Replace Three Phase Regulators		No
AE117	Aurora Power Poles Weibull Analysis	24.2 (1); 24.2 (2); 24.2 (3); 24.2 (4); 24.2 (5); 24.2 (6); 24.2 (8)	Yes
AE118	Aurora Response – Access Track Creation Program		No
AE119	Aurora Response – Fuse Reach Program		No
AE120	Aurora Response – Install Lightning Arrestors		No
AE121	Aurora Response – Pole Replacements	24.2 (1); 24.2 (2); 24.2 (3); 24.2 (4); 24.2 (5); 24.2 (6); 24.2 (8)	Yes
AE122	Aurora Response – Replace EDO Fuse Tubes (REOHS)		No
AE123	Aurora Response – Replace EDOs Fuse Tube Replacement	24.2 (1); 24.2 (2); 24.2 (3); 24.2 (4); 24.2 (5); 24.2 (6); 24.2 (8)	Yes
AE124	Aurora Response – Wildlife Protection (REINC)		No
AE125	Aurora Response – Reliability		No
AE126	Aurora Response – Replace Rural Zone Substation Transformers		No
AE127	Aurora Response – Replace Urban Zone Substation Transformers		No
AE128	Aurora Response – Demand Based Capital Expenditure		No
AE129	Aurora Response – St Leonards		No
AE130	RIT – St Leonards		No
AE131	Aurora Response - Sandford		No
AE132	Aurora Response – Geilston Bay		No
AE133	RIT – Hobart Eastern Shore – June 2009		No
AE134	Kingston Zone Substation		No
AE135	Kingston RIT-T Final Report		No
AE136	Aurora Energy Enterprise Agreement 2011		No

Table of attachments

Document ID	Document name	Confidentiality claim clause	Confidential
AE137	OTTER Letter – Account Ring-Fencing Guideline Anomaly (29 April 2011)		No
AE138	Aurora Response – Alternative Control price path methodology		No
AE139	Regulators Workbook OTTER	24.2 (1); 24.2 (2); 24.2 (3); 24.2 (8)	Yes
AE140	Roll Forward Model (RFM)		No
AE141	Post Tax Revenue Model (PTRM)		No
AE142	Metering Revenue Model		No
AE143	Fee Based Services Model		No
AE144	Public Lighting Annuity Model		No
AE145	Aurora's Revised Work Program	24.2 (1); 24.2 (2); 24.2 (3); 24.2 (6); 24.2 (7); 24.2 (8)	Yes
AE146	OPEX Base Year 0910 updated model	24.2 (1); 24.2 (2); 24.2 (3); 24.2 (6); 24.2 (7)	Yes
AE147	OPEX Base Year 1011 updated model	24.2 (1); 24.2 (2); 24.2 (3); 24.2 (6); 24.2 (7)	Yes
AE148	Provisions Model	24.2 (1); 24.2 (2); 24.2 (3); 24.2 (6); 24.2 (7)	Yes
AE149	Email from Heather Cerutty – Regulatory Accounts, Monday 2 May 2011		No

Listing of figures and tables

Figures within this Revised Regulatory Proposal

Tables within this Revised Regulatory Proposal

Glossary of terms/abbreviations

Term	Definition
2003 Determination	Investigation into Electricity Supply Industry Pricing Policies Declared Electrical Services Pricing Determination, 27 November 2003
2004-07 *Regulatory Control Period*	The *Regulatory Control Period* commencing on 1 January 2004 and concluding on 31 December 2007
2007 Determination	Investigation into Electricity Supply Industry Pricing Policies Declared Electrical Services Pricing Determination, 10 December 2007
current *Regulatory Control Period*	The *Regulatory Control Period* commencing on 1 January 2008 and concluding on 30 June 2012
forthcoming *Regulatory Control Period*	The *Regulatory Control Period* commencing on 1 July 2012 and concluding on 30 June 2017
AARR	Aggregate Annual Revenue Requirement
ABS	Australian Bureau of Statistics
ACG	The Allen Consulting Group Pty Ltd
ACIL Tasman	ACIL Tasman Pty Ltd
ACS	*Alternative Control Services*
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AETV	Aurora Energy Tamar Valley Pty Ltd
AMI	Accredited Meter Installer
API	Application Program Interface
ARR	Annual Revenue Requirement
ATO	Australian Taxation Office
AUD	Australian Dollars
Aurora	Aurora Energy Pty Ltd
BAF	Aurora's budgeting and forecasting tool
Bairnsdale Power Station	The power station operated by Alinta Energy Limited in Victoria's East Gippsland
BARC	Board Audit Review Committee
CablePI	Device provided by Aurora to detect broken neutrals
CAIDI	Customer Average Interruption Duration Index
CAM	Cost Allocation Method
Capex	Capital Expenditure
CFC	Construction Forecasting Council
CMD	Coincident Maximum Demand
CONAN	Contingency analyser – an API developed by Hill Michael Strategi Engineering to analyse switching capacity on Aurora's distribution network.
CONSAC	Concentric Sheath Aluminium Conductor
CPI	Consumer Price Index
CPRS	Carbon Pollution Reduction Scheme
CSC	Customer Support Centre
CT	Current Transformer
DAIS	Distribution Asset Information System
DCS	*Direct Control Services*
Deloitte	Deloitte Touche Tohmatsu Limited
DIER	Department of Infrastructure, Energy and Resources

Term	Definition
DINIS	Distribution Network Information System produced by Fujitsu
DMIA	Demand Management Incentive Allowance
DMIS	Demand Management Incentive Scheme
DNSP	Distribution Network Service Provider
DPIPWE	Department of Primary Industries, Parks, Water and Environment
DSM	Demand Side Management
DUOS	Distribution Use of System
EBSS	Efficiency Benefits Sharing Scheme
EDO	Expulsion Drop Out
EHV or Extra High Voltage	Voltages of 88 kV and above
EIS&A Act	*Electricity Industry Safety and Administration Act 1997*
EMS	EMS Solution Pty Ltd
Enterprise Architects	Enterprise Architects Pty Ltd
EPA	Environmental Protection Authority division within DPIPWE
ESC	Essential Services Commission of Victoria
ESI Act	*Electricity Supply Industry Act 1995*
ESIA Act	*Electricity Supply Industry Administration Act 2007*
Expert Panel	The panel formed by the Tasmanian Government in accordance with the provisions of the Expert Panel Act
Expert Panel Act	*Electricity Supply Industry Expert Panel Act 2010*
EY	Ernst and Young Global Limited
EziKey	EziKey Pty Ltd, a fully owned subsidiary of Aurora
FLRS	Feeder Load Reporting System
FRAMME	Facilities Rulebase Application Model Management Environment
FTE	Full Time Equivalent
GHD	GHD Pty Ltd
GI	Galvanised Iron
GIS	Graphical Information System
GLAD	Greater Launceston Area Upgrade
GSL	Guaranteed Service Level
GSP	Gross State Product
G-Tech	Intergraph's G-Technology GIS
GW	GigaWatt
GWh	GigaWatt Hour
HASU	Hobart Area Supply Upgrade
HES	Hobart Eastern Shore
HIA	Housing Industry Association Ltd
HV or High Voltage	Voltages between 6.6 kV and 66 kV
Hydro or HEC	Hydro Electric Corporation or Hydro Electric Commission
ICAM	Indirect Cost Allocation Model
ICS	Incident Control System
Intergraph	Intergraph Corporation Pty Ltd
InService	Intergraph's Outage Management System
ISG	Information Services Group, a department of the Commercial Services division of Aurora

Glossary of terms/abbreviations

Term	Definition
ISO 9001	Part of the ISO 9000 family of quality management system standards published by the International Organisation for Standardisation
ITAA	Income Tax Assessment Act 1997
km	Kilometre
KPMG	KPMG Cooperative International
kV	KiloVolt
kVA	KiloVolt Amp
kW	KiloWatt
kWh	KiloWatt Hour
LED	Light Emitting Diode
LV or Low Voltage	Voltages of 415 Volts or less
MAIFI	Momentary Average Interruption Frequency Index
MCE	Ministerial Council on Energy
MD	Maximum Demand
MDMS	Market Data Management System
MED	Major Event Day
MEPS	Minimum Energy Performance Standards
MIL	Market Integration Layer
MV	MegaVolt
MVA	MegaVolt Amps
MW	MegaWatt
MWh	MegaWatt Hour
NBN	National Broadband Network
NBNCo	NBN Co Limited
NBN Tasmania	NBN Tasmania Limited
NECF	National Energy Customer Framework
NEL	National Electricity Law
NEM	National Electricity Market
NER or *Rules*	National Electricity *Rules*
NIEIR	National Institute of Economic and Industry Research
NPV	Net Present Value
NTER	National Tax Equivalent Regime
NVA	Natural Values Atlas
OEPC	Office of Energy Planning and Conservation within DIER
OH	Overhead
Ombudsman Act	*Energy Ombudsman Act 1998*
OMS	Outage Management System
Opex	Operating Expenditure
OTTER	Office of the Tasmanian Economic Regulator
PAMA	Public Authority Management Agreement
PAYG	The Aurora Retail pay as you go package offered to electricity customers
PB	Parson Brinckerhoff
PCB	Polychlorinated Biphenyl
POE	Probability of Exceedence
POEL	Private Overhead Electricity Line

Term	Definition
POW	Program of Work
Price Control Regulations	*Electricity Supply Industry (Price Control) Regulations 2003*
PTRM	Post Tax Revenue Model
PwC	PricewaterhouseCoopers International Limited
RAB	Regulated Asset Base
RBA	Reserve Bank of Australia
Regulator	The meaning given in the *Economic Regulator Act 2009*
Regulatory Proposal	The meaning given in the *Rules*
RFM	Roll Forward model
RIN	Regulatory Information Notice
Ring Fencing Guideline	Guideline for Ringfencing in the Tasmanian Electricity Supply Industry, October 2004
Rules	National Electricity *Rules*
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Supervisory Control and Data Acquisition
SCS	*Standard Control Services*
SF6	Sulphur Hexafluoride
SHE	Safety, Health and Environment
SHEC	Safety, Health, Environment and Compliance
SKM	Sinclair Knight Merz Pty Ltd
Smart meter	An electrical meter that records consumption in intervals of 30 minutes or less and communicates that information back to Aurora.
SOM	Service Order Management
SORI	Statement of Regulatory Intent
SSL	Solid State Lighting Technologies
STPIS	Service Target Performance Incentive Scheme
SWER	Single Wire Earth Return
Tamar Valley Project	Aurora's completion of the partially completed Babcock and Brown power station at Bell Bay.
TEC	Tasmanian Electricity Code
TER	Tax Equivalent Regime
TESI	Tasmanian Electricity Supply Industry
TMR	Trunk Mobile Radio
TNSP	Transmission Network Service Provider
ToU	Time of Use
Transend	Transend Networks Pty Ltd
Tribunal	Australian Competition Tribunal
TRIP	Aurora's Targeted Reliability Improvement Program
TUOS	Transmission Use of System
TVD	Telephony Video Data or TVD Incorporated
USD	United States Dollars
VCR	Value of Customer Reliability
VT	Voltage Transformer
WACC	Weighted Average Cost of Capital
WASP	Works Asset Scheduling and Programming software package developed by EMS Solutions Pty Ltd
WH&S Act	*Workplace Health and Safety Act 1995*

Glossary of terms/abbreviations

Term	Definition
Wilson Cook	Wilson Cook and Company Limited
WireAlert	The trading name adopted by EziKey
WST	Workplace Standards Tasmania