



Electricity Supply Industry Expert Panel

Tasmanian Electricity Pricing Trends 2000-2011

Discussion Paper

April 2011

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Discussion Paper

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April 2011

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GLOSSARY

TERM	MEANING WITHIN THE CONTEXT OF THIS REPORT
AARR	Aggregate Annual Revenue Requirement
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
AER	Australian Energy Regulator
AWA	Australian Weighted Average
AWE	Average Weekly Earnings
CPI	Consumer Price Index
IPART	Independent Pricing And Regulatory Tribunal
kWh	Kilowatt Hour (= 1kW used continuously for 1 hour)
MAR	Maximum Allowable Revenue)
MW	Megawatt
MWh	Megawatt Hour (= 1 thousand kWh)
NEM	National Electricity Market
NMR	Notional Maximum Revenue
OTTER	Office of The Tasmanian Energy Regulator
RAB	Regulatory Asset Base
REC	Renewable Energy Certificate
TEC	Tasmanian Electricity Code
TER	Tasmanian Economic Regulator

Introduction

In June 2010, the Tasmanian Government announced that it would establish an independent expert panel to conduct an investigation into, and provide guidance to Parliament on, the current position and future development of Tasmania's electricity industry. As part of that review process, a series of Discussion Papers have been released by the review Panel which are intended to foster a shared understanding of the electricity industry's past and present, as a precursor to considering the industry's future.

The purpose of this Discussion Paper is to examine how electricity prices for non-contestable customers have changed since 2000, present the component costs that make up electricity prices, and explain the drivers behind changes in the price of electricity in Tasmania over the last decade.

Two other Discussion Papers are being released by the Panel at this stage of the Review, providing: a description of the contemporary energy market in Tasmania; and a review of evolution of Tasmanian energy policy and its linkages with the major infrastructure investment decisions that been made place since the late 1990s.

The Panel's intention in releasing these Discussion Papers is to:

- provide a backdrop to underpin the early work of the Panel;
- stimulate the discussion of issues that interested parties believe the Panel should be considering in addressing its Terms of Reference; and
- to flag some of the themes that the Panel will be considering further through the Review.

Accordingly, the Panel would welcome submissions on issues arising from the material contained in this Discussion Paper by 6 May 2011 – these will be of assistance in framing the Panel's Issues Paper, which is expected to be released in May 2011.

John Pierce
Chairman
Electricity Supply Industry Expert Panel

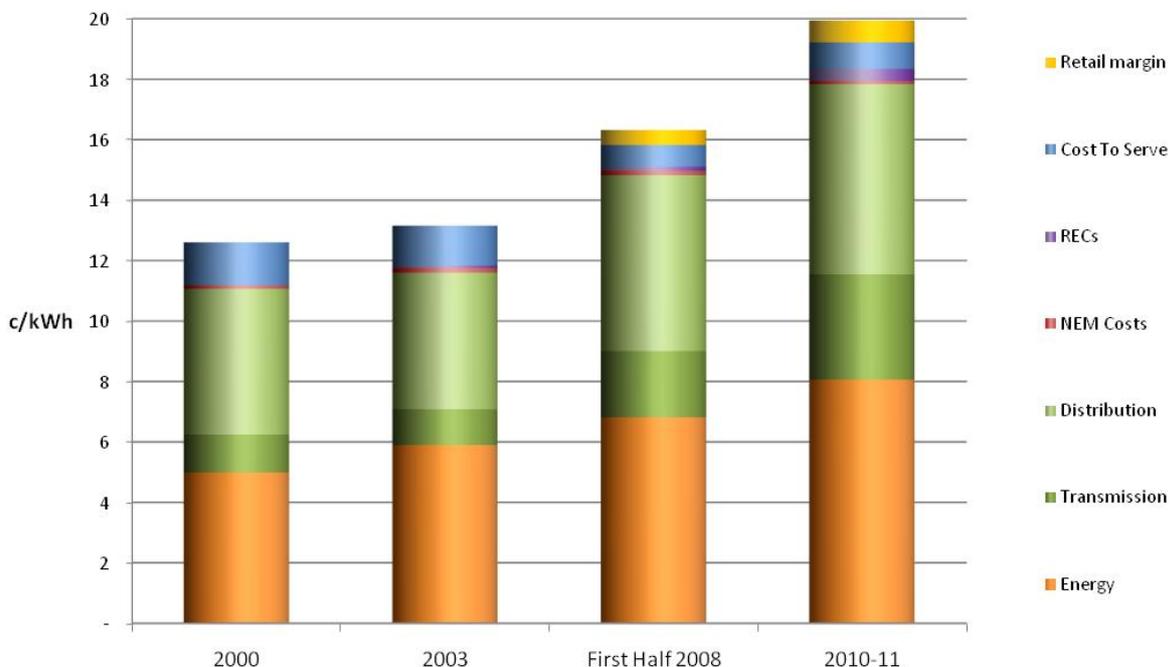
1. Highlights

This Discussion Paper examines how non-contestable electricity prices in Tasmania have changed since 2000 and the drivers behind those changes. The key highlights are:

- Residential electricity prices have broadly doubled since 2000 in nominal terms. The average annual increase in real electricity prices between 2000 and 2011 is around 5.5 per cent to 7.5 per cent.
- Small business electricity prices have increased by around 4.5 per cent per year in real terms over the period 2000-2011, or around 8 per cent per year in nominal terms.
- All parts of the supply chain in the electricity sector (generation, transmission, distribution and retail) have contributed to these price increases, but not in equal proportions (see Figure 1 below).
 - The single largest driver of price increases for non-contestable customers has been higher allowances provided in tariffs for wholesale energy costs, with these contributing around 40 per cent of the increase.
 - Higher costs in the distribution network have accounted for around 25 per cent of the increases in prices paid by non-contestable customers.
 - Transmission costs have increased at the greatest rate of all of the components of the supply chain, with the transmission component included in non-contestable tariffs having grown by 300 per cent in nominal terms since 2000. This increase have accounted for just under 25 per cent of the overall increase in non-contestable tariffs.
 - Higher costs associated with the retailing of electricity have accounted for around 10 per cent of the increase in prices being experienced by non-contestable customers.
- Over the period since 2000, there has been much more Government involvement in the determination of the wholesale energy allowance provided for in non-contestable tariffs than there has been in the pricing network or retail components.

- Wholesale energy allowances in tariffs are, and have been for some time, based on estimates of the long run marginal cost of new entry generation in Tasmania. These estimates have been increasing over time. There is evidence of a divergence between these estimates and estimates of 'market prices' in the Tasmanian wholesale electricity market.
- The higher costs of the network elements have largely been driven by increasingly higher levels of new capital expenditure and increases in the value of the network businesses regulatory assets bases. This experience is shared with other Australian jurisdictions. Operating costs have grown at a much lower rate than asset-related costs.
- While reviewing the drivers of past price increases is informative, it does not necessarily provide guidance on what will drive price changes into the future. This paper does not address this issue, but it is a matter the Panel will be examining as part of its Terms of Reference.
- These cost increases are delivering pricing outcomes in Tasmania that are 'middle of the pack' when compared with prices in other Australian jurisdictions. Price rises in other jurisdictions have been broadly similar over the same period.

Figure 1 - Aurora Energy's Notional Maximum Revenue (\$2009-10)



Source: Data from the Tasmanian Economic Regulator

1. Background

Reflecting the fundamental importance of electricity to our contemporary lifestyle and the State's economy, electricity prices have long been the subject of debate within the Tasmanian community. In recent years the price of electricity for all users has increased significantly, and it is primarily the magnitude of those price rises that led the Tasmanian Parliament to commission a review of the electricity sector in Tasmania.

For a long time, electricity prices in Tasmania were set by the Tasmanian Government, based on recommendations made by the former Hydro-Electric Commission. In 1998, the setting of electricity prices was devolved from the Government to the TER.¹ The prices Tasmanian households and most of Tasmania's small businesses pay for electricity are still regulated by the TER, with a view to ensuring that – in the absence of genuine competition – consumers are not asked to pay more for their electricity than they would be by an electricity supplier operating in a competitive market.

With the widespread introduction of full retail competition on mainland Australia, customers elsewhere in the National Electricity Market are now able to choose their electricity retailer, and in doing so select from a range of contracts that offer different terms and conditions of supply, including price. Nonetheless, small electricity customers in other states and territories do still have regulated electricity prices available to them as an alternative to market-based offers from electricity retailers.

Regardless of whether they are regulated or determined by a competitive market, retail electricity prices around Australia have risen significantly in the last decade (see Chapter 2).

¹ The body responsible for electricity price regulation has changed since independent regulation was first introduced. In the first instance, it was the Tasmanian Electricity Regulator, then the Tasmanian Energy Regulator, and currently, the Tasmanian Economic Regulator. For the sake of simplicity, throughout this document, we refer the TER as representing all of these entities. In 1996, the Government Prices Oversight Commission was given the role of recommending maximum electricity prices to Government, for its determination.

Rising electricity **prices** have obviously increased the cost of electricity² for many households in Tasmania. But even if the **price** of electricity was the same in Tasmania as in other states, the cost of, or **expenditure** on, electricity by Tasmanian households would still be relatively high. Tasmanian households typically use more electricity than their interstate counterparts.³ Without an awareness of **consumption** as a driver of household electricity costs, it is not surprising that when faced with substantial electricity bills, many people might reach the conclusion that the State's electricity prices are out of step with the rest of the country.

This Discussion Paper:

- explains how the price of electricity for non-contestable customers has been moving since 2000;
- describes how prices are set in Tasmania;
- provides an understanding of the costs which make up the price Tasmanian's pay for their electricity; and
- provides an insight into what's been driving prices higher in the last decade.

² "Price" and "cost" are often used interchangeably when discussing electricity 'pricing', even though both have quite different meanings. Price refers to the rates at which customers are charged for the provision of their electricity supply. Electricity costs, however, denotes the amount which a customer is charged, and takes into account the duration of the billing period (in the case of fixed service charges) and the amount of electricity consumed. Cost is, therefore, a product of price multiplied by quantity.

³ Tasmanian residential customers, on average, use around 20 per cent more electricity than their counterparts in Queensland, New South Wales and the ACT, 35 per cent more than their counterparts in South Australia and Western Australia, and 38 per cent more than Victorians (source *Comparison of 2011 Australian Standing Offer Energy Prices - January 2011, OTTER*)

2. The changing price of electricity

There has been a great deal of community discussion about the rate of change in electricity prices in Tasmania and the capacity of consumers, particularly low-income households, to manage the increasing cost of electricity within their budgets. Similarly, the business community has flagged concerns about the impact that higher energy costs might have on consumer spending, the prices local businesses charge for their goods and services and the ability of export orientated businesses to compete as price takers in global markets. This debate has been mirrored, to varying degrees, in other states and territories.

The electricity prices paid by Tasmanian households and small businesses rose by around six per cent during 2009-10, with a further 15 per cent increase occurring through 2010-11. That upward trend is set to continue in the near term, with the TER having already determined that prices will increase by 8.5 per cent on 1 July 2011 and a further 8.7 per cent on 1 July 2012.⁴

By way of comparison:

- In New South Wales, regulated electricity prices rose by up to 21.7 per cent in 2009-10, and the Independent Pricing and Regulatory Tribunal announced on 14 April 2011 that, from 1 July 2011, average regulated electricity prices in NSW will increase by between 16.4 per cent and 18.1 per cent, depending on electricity retailer.
- The Queensland Competition Authority increased regulated electricity prices for 2009-10 by 11.8 per cent, which increased to 15.5 per cent following an appeal by energy retailers.
- In Victoria, standing offer electricity prices rose by between 12 and 19 per cent in 2009-10.

The Panel notes that these price increases do not necessarily reflect changes in the electricity prices actually observed by customers in these State, as customers may be able to negotiate discounts against these regulated prices by entering into a contract with electricity retailers.

⁴ The regulatory arrangements provide for the direct pass through of some changes in costs within the regulatory period, such as the cost of renewable energy certificates. Accordingly, increases in prices beyond those indicated above are possible.

Table 1 shows the changes in electricity prices that have occurred in each state and territory since 2006-07. The table shows that while the price rises in Tasmania have been undeniably substantial, they are consistent with or below the rises experienced in Victoria, New South Wales, Queensland and Western Australia, although higher than the price increases that have occurred in South Australia, the Australian Capital Territory and the Northern Territory.

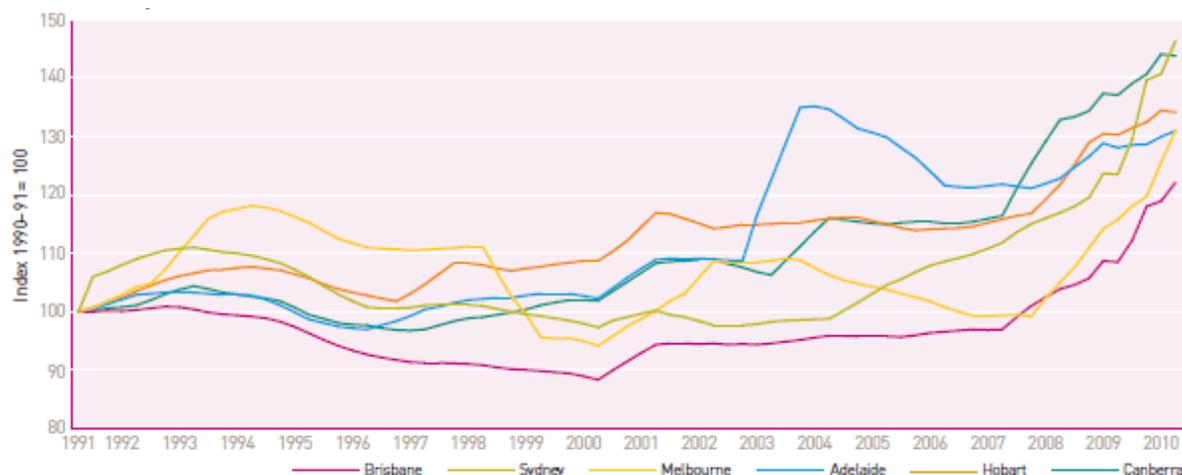
Table 1 - Recent changes in electricity prices, by state/territory, per cent

	VIC	NSW	QLD	WA	TAS	ACT	NT	SA
2007-08	17.0%	9.5%	11.4%	0.0%	16.0%	16.7%	4.4%	12.3%
2008-09	9.8%	3.7%	9.1%	10.0%	3.9%	7.1%	3.4%	6.8%
2009-10	19.8%	20.2%	11.8%	22.5%	7.2%	6.4%	18.0%	4.4%
2010-11	7.0%	12.7%	13.3%	10.0%	14.8%	2.4%	5.0%	6.0%
Total (not compounded)	53.6%	46.1%	45.6%	42.5%	41.9%	32.6%	30.8%	29.6%

Source: Your electricity prices explained, Aurora Energy (see www.auroraenergy.com.au)

To emphasise the recent acceleration in the rate at which electricity prices have increased around the country, Figure 2 shows the indicative changes in electricity prices which have occurred in each capital city within the National Electricity Market over the last 20 years. The figure does not provide a comparison of electricity prices (see Chapter 3), rather a comparison of the rate at which prices have been changing. While electricity prices in Tasmania have clearly trended upwards, the chart shows that this trend is consistent with experiences interstate and that, more recently, prices have been increasing at a faster rate in some other states and territories than they have in Tasmania.

Figure 2 - Electricity retail price movements (adjusted for inflation)



Source: Retail price index (inflation adjusted), Australian capital cities, State of the energy market 2010, Australian Energy Regulator

It is clear that electricity prices have been rising across Australia, and the balance of this Chapter examines how individual tariffs for non-contestable customers in Tasmania have risen since 2000. The tariffs selected are:

- Tariff 31 (residential light and power);
- Tariff 41 (residential hot water);
- Tariff 425 (residential hot water and space heating, known as 'Hydro Heat'); and
- Tariff 22 (the general low voltage tariff paid by small business customers).

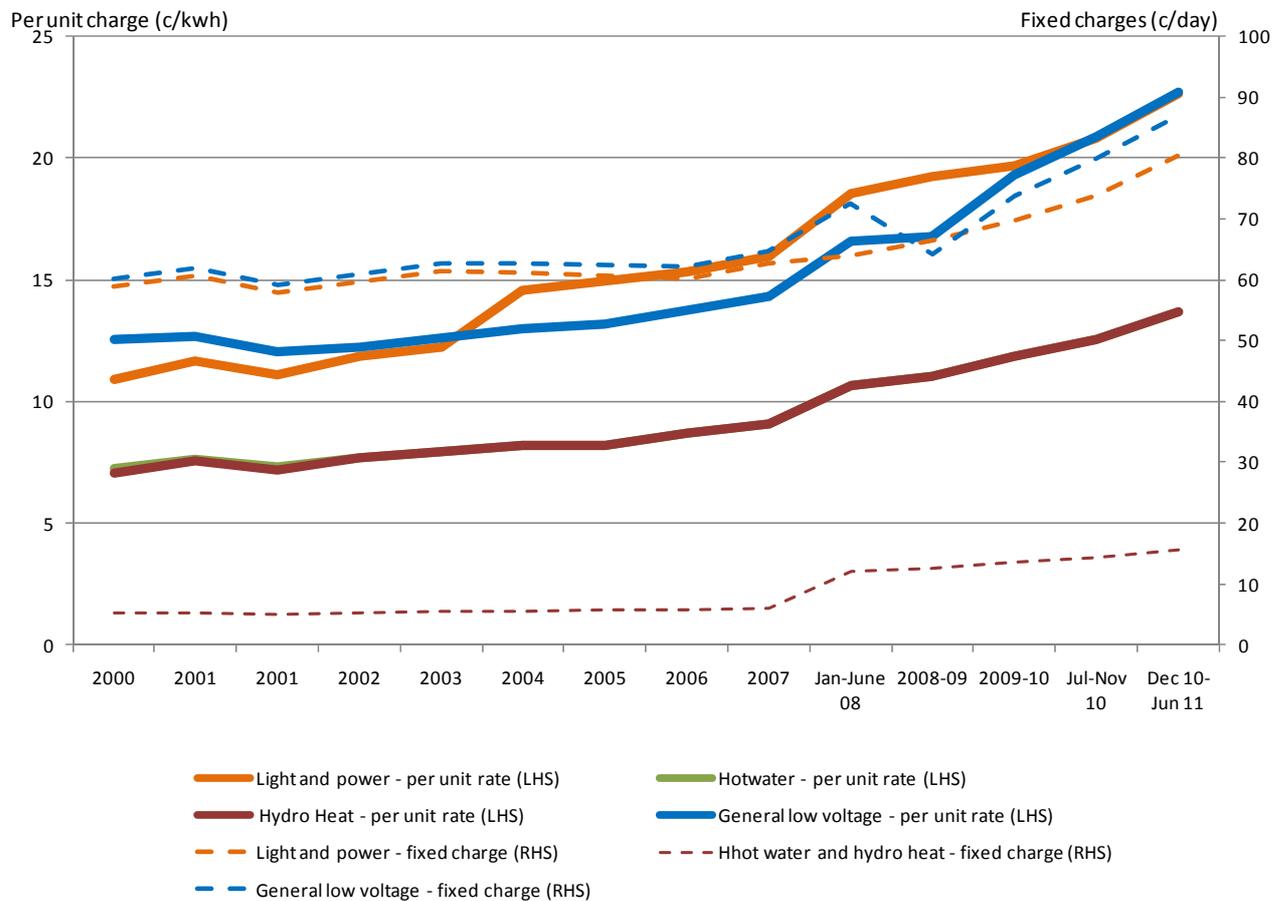
Figure 3 shows the price path of each of the four tariffs, splitting out changes in the daily fixed charge and the per unit energy rates.⁶

⁵ Customers that utilise wired-in space heating can access this product, which also applies to their hot water electricity usage. Customers not using Hydro Heat but using electricity for hot water would typically be supplied under tariff 41.

⁶ The comparison of tariffs over time is complicated by changes in the structure of the selected tariffs. The residential light and power tariff went from three consumption-related pricing steps to a single rate from 1 July 2009, and the hot water tariff changed to a single energy rate in January 2008. The daily charges associated with particular tariffs have also changed, with some charges (such as the separate per meter charge applied to residential light and power customers) being either discontinued or subsumed into other daily charges.

The introduction of the GST in 2000-01 and the discontinuation of the State Government's five per cent *Electricity Entities Levy* in 2001 adds to this complexity. As the purpose of this section is to broadly describe how tariffs have changed over time, these complexities have been set aside by consistently referencing the unit rates in the second step of each tariff in each year and charting changes in daily costs and energy prices separately. The second step was selected; given the first step is generally a very low level of consumption.

Figure 3 - Fixed and per unit charges for selected tariffs, 2000-2011, \$ nominal



Source: Aurora Energy data

Note: 2001 shown twice to illustrate the impact of the removal of the five per cent surcharge that the State Government had imposed on electricity prices prior to 2001

In addition to the increases that can be observed in both the prices charged for energy and the daily supply charges, Figure 3 shows that there has been a realignment and, more recently, a convergence, of the energy prices paid by small businesses and residential customers. In 2000, the small business unit rate was around 15 per cent higher than the residential light and power unit rate, whereas in 2011, there is very minor difference of 0.026 cents/kWh.

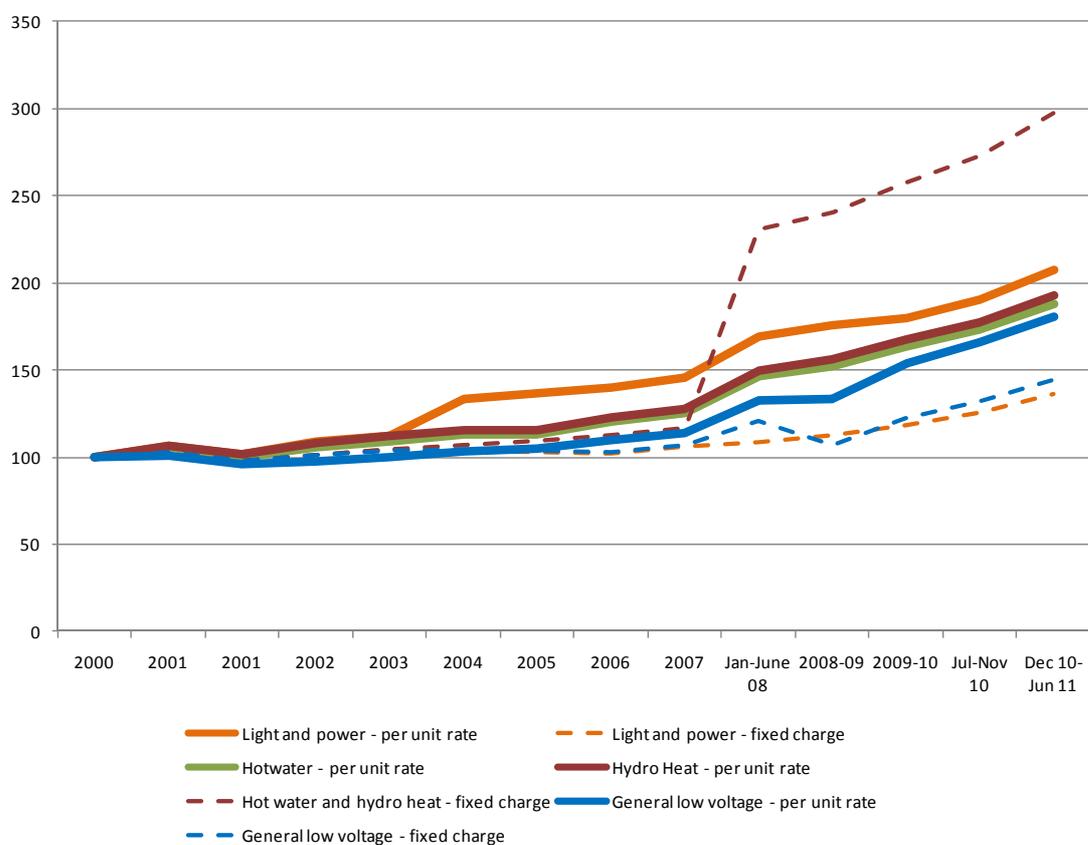
The unit rate for Hydro Heat and residential hot water were slightly different until 2002, but since then have become equivalent and remain significantly below the unit rates charged for both residential light and power and low voltage business usage.

Figure 4 shows the same data as Figure 3, but on an indexed basis to enable the relative changes to be more readily observed. It shows that during the period 2000 to 2003, all of the tariffs moved broadly together, with all prices reducing in 2001 with

the removal of the five per cent Electricity Entities Levy that the State Government had been imposing on electricity prices since 1971.

Figure 4 demonstrates that the general low voltage tariff unit rates applied to small business customers have grown more slowly than residential tariffs, and that there was a step change in the relativities between the unit rates of the residential light and power tariff and the general low voltage business tariff in 2004 and again between 2007 and July 2010. More recently, the two tariffs have moved at a similar rate.

Figure 4 – Nominal fixed and per unit charges for selected tariffs, 2000-2011, index



Source: Aurora Energy data

It is useful to examine how these nominal price changes compare to movements in general prices and earnings growth⁷ in Tasmania. This is illustrated in Figure 5.

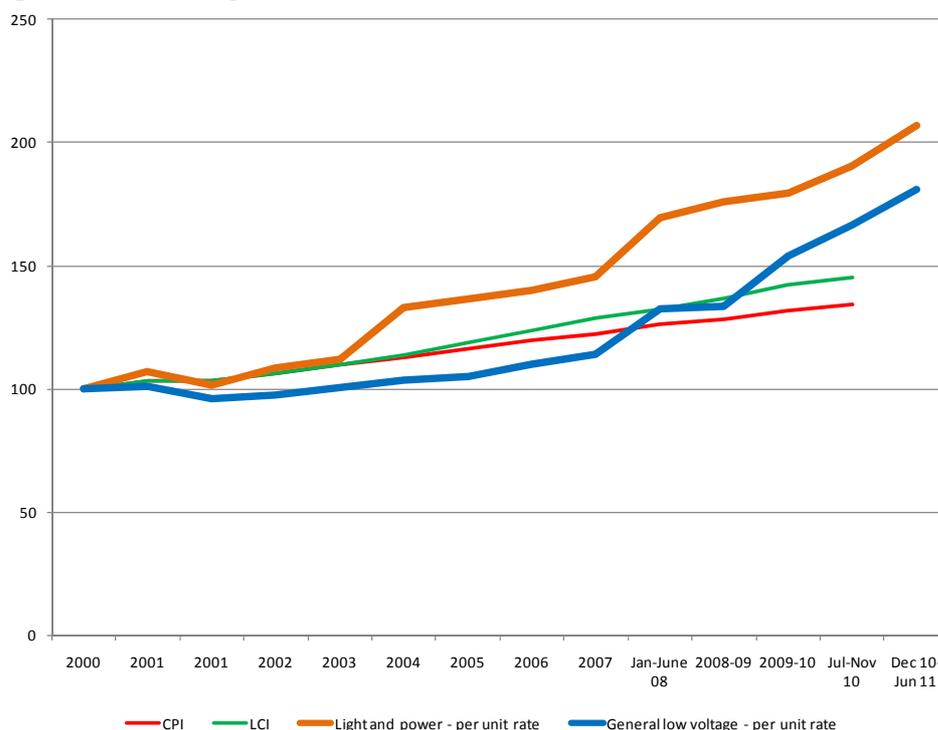
Figure 5 shows that since 2003, the rate of growth in light and power unit costs has substantially outpaced increases in prices more generally, meaning that there has been a significant increase in electricity prices as a component of the cost of living.

Figure 5 also shows that increases in light and power unit rates were broadly matched by growth in earnings between 2000 and 2003, but the two step changes in 2004 and 2007 have pushed the rate of growth in light and power prices significantly above the growth in earnings.

By contrast, the unit rates facing small business did not keep up with inflation over the period 2000 to 2008, indicating real per unit cost decreases over this period. However, this has been reversed in more recent times, with small business per unit rates increasing significantly more quickly than the CPI.

⁷ The ABS series Labour Price Index for Tasmania (ABS 6345.0) is used as the measure for changes in earnings, while the Hobart CPI (ABS 6401.0) is used as the measure for inflation. The LPI was used as the proxy for earnings as it is considered a more meaningful measure of underlying wages growth than average weekly earnings, as it abstracts from structural changes in the labour market (such as the full-time/part-time split and industry shares) to focus on changes in wage rates for specific positions.

Figure 5 - Electricity tariff movements relative to CPI and AWE, 2000-2011.



Source: Aurora Energy data and Australian Bureau of Statistics series 6401.0 ((Consumer Price Index) and 6345.0 (Labour Price Index)

Table 2 shows the percentage changes in the fixed and variable price components of the nominated tariffs over the period 2000 to 2011, and contrasts them with changes in the Hobart Consumer Price Index and the Tasmanian Labour Price Index over the same period.

Table 2 - Changes in tariff components, selected tariffs, 2000-2011, per cent

Tariff	Nominal increase in Unit Rate	Nominal increase in Fixed charges	Real increase in Unit Rate	Real Increase in Fixed Charges
Residential light & power	107%	36%	73%	2%
Residential hot water	88%	197%	54%	163%
Hydro Heat	92%	197%	58%	163%
General low voltage, Small business	80%	44%	46%	10%

Source: Aurora Energy data and Australian Bureau of Statistics series 6401.0 (Consumer Price Index) and 6345.0 (Labour Price Index). The CPI increase over this period was 34.2% and the Labour Price Index increase was 45.5%

Note: Growth in Tasmanian ordinary time AWE and Hobart CPI based on comparison of ABS data from December quarter 1999 to December quarter 2010.

The upshot of this analysis is that Tasmanian non-contestable customers have faced significant increases in real electricity prices, with residential tariffs growing at a faster rate than small business prices. The rate of change in electricity prices has also outpaced the growth in earnings in Tasmania.

Electricity prices across Australia have also been rising, and the following Chapter considers how Tasmanian electricity prices and costs currently compare with those in other Australian jurisdictions.

3. Comparative pricing

It is difficult to draw meaningful conclusions from simple direct comparisons of electricity prices in each state, or even typical electricity bills. This is because average consumption and usage patterns vary markedly between states, and the range of electricity pricing options which have become available in other states as the result of retail competition has greatly increased the complexity of the task.

This is the case for both residential and small business pricing, and the availability of information regarding the prices paid by larger commercial and industrial users of electricity is even more restricted, given that contract prices for electricity are not required to be publicly disclosed and there are no regulated fall back tariffs.

Nonetheless, the TER regularly undertakes a comparison of regulated Tasmanian electricity prices paid by residential, small-business and concession customers in Tasmania with the equivalent electricity prices interstate⁸. The comparisons use the approved regulated tariffs for Tasmania, Western Australia and the Northern Territory, and the approved standing offer prices for the major retailers in Victoria, South Australia, New South Wales and the Australian Capital Territory.

It is important to note, however, that the TER's comparisons take into account both fixed and variable charges, as well as consumption, in order to arrive at an effective per kilowatt hour *cost* as a basis for comparison.

3.1 Residential electricity costs

In the *Comparison of 2011 Australian Standing Offer Energy Prices*, released in January 2011, the TER noted in relation to residential electricity prices that:

- Tasmanian residential tariffs typically have higher fixed daily charges and lower average energy rates than their equivalents interstate;
- for most residential customers, the incremental cost of using additional electricity is lower in Tasmania than in other states; and
- the prices of off-peak electricity in other states and territories, where thermal generation predominates, are lower than those on offer to Tasmanian customers.

⁸ The TER also undertakes a separate comparison between Tasmanian Aurora Pay As You Go prices and regulated tariffs in Tasmania. These are not considered in this Paper, but are canvassed in the Panel's Discussion Paper *The Tasmanian Energy Sector – An Overview*.

Comparison of the effective per kWh price paid for electricity, taking consumption related costs and fixed costs into account, showed that:

- low consumption residential customers pay a per kWh cost which is in the middle range of the residential prices available in Australia;
- for Tasmanian residential customers with average consumption levels, per unit electricity costs remain in the mid-range of those experienced across Australia;
- in the case of high consumption residential customers, as the consumption of electricity increases the effective per kWh cost of electricity in Tasmania begins to fall below the national average price, although the extent to which it does so depends on the consumption split between the various residential tariffs, such as the hot water and general light and power tariffs;
- the Tasmanian Government's electricity concessions are some of the most generous in Australia, with generally broader eligibility criteria than apply in other jurisdictions; and
- approximately one in three residential customers receive the concession, and once this discount is taken into consideration, customers using between 50 and 200 per cent of State average consumption (9 480 kWh⁹) pay a price for their electricity which is in the low range of that paid elsewhere in Australia.

These comparisons were necessarily based on published standing tariffs available from electricity retailers in other states, and the TER noted that customers in other states may have access to cheaper products as a result of greater retail contestability. Table 3 shows the range of effective prices available to residential customers across Australia who are supplied under a regulated tariff or standing offer contract, based on the average consumption and electricity prices current as at 23 January 2011.

⁹ Energy Gas Australia 2010, Energy Supply Association of Australia

Table 3 - Effective residential electricity costs, c/kWh

State/Territory	Effective cost per kWh		
Australian Capital Territory	16.3		
Queensland	19.5	-	20.6
Northern Territory	20.8	-	21.0
Tasmania	20.9	-	22.8
Western Australia	21.7	-	23.0
Victoria	20.3	-	25.2
New South Wales	19.5	-	26.5
South Australia	23.9	-	27.2

Source: Comparison of 2011 Australian Standing Offer Energy Prices,

Table 4 compares the effective cost per kWh for residential *concession* customers being supplied under regulated or standing offer tariffs, again based on average consumption levels in each state/territory. The comparison takes into account the concessions available in each particular state and territory as at 23 January 2011, as well as – in Tasmania’s case – the one-off payment to eligible concession customers in September 2010, which has been applied over the full year.

The comparison does not apply to Aurora Pay As You Go (APAYG) customers who also receive the State Government concession, but comparisons undertaken by the TER¹⁰ have found that for customers eligible for the concession, APAYG offers savings compared to customers paying the standard regulated tariffs, although the savings are not significant.

¹⁰ 2011 Aurora Pay As You Go price comparison report (rates from 1 January 2011), Office of the Tasmanian Economic Regulator

Table 4 - Effective residential electricity prices – concession customers, c/kWh

State/Territory	Effective cost per kWh		
Australian Capital Territory	11.3		
Northern Territory	13.7		
Tasmania	16.3	-	18.1
Queensland	17.0	-	18.0
New South Wales	18.0	-	25.0
Victoria	18.8	-	21.9
Western Australia	19.5	-	20.8
South Australia	21.4	-	24.8

Source: Comparison of 2011 Australian Standing Offer Energy Prices,

3.2 Small business electricity costs

In the *Comparison of 2011 Australian Standing Offer Energy Prices*, the TER concluded that Tasmanian electricity business customers on regulated tariffs (who consume less than 150 MWh per annum) pay business rates that are competitive with those available in other states.

Table 5 illustrates the range of prices for small electricity business customers in Australia, on regulated or standing offer tariffs as at 23 January 2011, based on an annual consumption of 50 MWh.

Table 5 - Effective small business electricity prices, c/kWh

State/Territory	Effective cost per kWh		
Australian Capital Territory	20.7		
New South Wales	21.1	-	28.7
Victoria	21.5	-	26.6
Western Australia	21.8	-	22.8
Northern Territory	22.5		
Tasmania	23.6		
Queensland	24.3	-	28.0
South Australia	28.5		

Source: Comparison of 2011 Australian Standing Offer Energy Prices,

3.3 Large commercial /industrial electricity costs

In the *Comparison of 2011 Australian Standing Offer Energy Prices*, the TER noted the inherent difficulty involved in comparing prices for business customers because of the different stages of retail contestability within the National Electricity Market, and the impact that retail contestability has on the accessibility of pricing information, given that contract prices for electricity are not publicly disclosed.

All business customers are now contestable in New South Wales, Victoria, South Australia and the Australian Capital Territory. The TER concluded that comparisons of published safety net tariffs and standing offers are of limited value, because of the likelihood that contracted customers are likely to secure significantly lower electricity pricing.

Nonetheless, comparisons by the TER of the typical per kWh electricity costs borne by business customers, based on published standing offers and safety net arrangements in other states, showed that in 2009-10:

- Business customers in Tasmania that consumed between 20 MWh per annum (approximately \$1 150 per quarter) and 40 MWh per annum (approximately \$2 195 per quarter) were subject to prices that were in the mid-range of prices available across Australia; and
- Business customers on low voltage demand tariffs were charged competitive prices with those available elsewhere in Australia.

3.4 Major industrial electricity costs

At this point in time no published information is available in relation to the prices paid by Tasmania's largest commercial and industrial users of electricity, as they are seen as a source of competitive advantage in international markets. The Panel will be reviewing major industrial customer pricing through the Review.

Unlike smaller industrial and commercial users, the introduction of retail contestability has not fundamentally changed the way in which electricity prices are determined for major electricity customers. It has been a longstanding arrangement that the prices of electricity for major industrial customers has been on the basis of bilateral negotiations, rather than regulated tariffs.

Early advice to the Panel from Tasmania's state owned electricity entities is that major industrial customers require nationally-competitive delivered electricity costs to secure their ongoing operations in Tasmania, and that this has always been the case.

Simple comparisons of major industrial electricity pricing with that for non-contestable customers can be misleading.

For example, major industrial users are typically supplied directly from the high voltage transmission system, meaning that they do not bear the distribution costs which, on average, represent just over 30 per cent of residential customers' electricity bills.

Commentary in the media about major industrial electricity costs often overlook some of the complexities that make comparisons with residential and small business electricity prices difficult, and the Panel will ensure that appropriate benchmarks are established on which to examine major industrial customer pricing.

Cross-subsidisation

The extent to which cross-subsidies might exist between major industrial and other customer is an issue that the Panel is investigating. In this context, however, the Panel notes that variations in electricity prices between different types of customers is not *prima facie* evidence of cross-subsidisation.¹¹

The prices paid by residential and small business customers, and those paid by large energy-intensive industrial and commercial electricity users, are determined by quite different and independent means.

- Residential and small business electricity prices are determined by a regulatory process by the TER; and
- Prices that large commercial and industrial entities pay for their electricity are set through a process of commercial negotiation between the user and suppliers, based on the respective bargaining power of each party.

The final retail electricity prices approved by the TER are based on estimates of the efficient cost of Aurora Energy supplying the non-contestable electricity market in Tasmania (discussed in Chapter 5), which pays no regard to the price of electricity charged to major industrial and contestable customers.

¹¹ Cross-subsidisation refers to the situation where one group of customers is charged more than the efficient cost of supplying that group, in order for the supplier to recoup shortfalls in revenue arising from charging another group of customers less than the efficient cost of supply to that second group.

The task of the Panel is to investigate the extent to which the regulatory process is delivering efficient prices.¹² The Panel is also developing an understanding of the framework within which these commercial contracting decisions are made within the Tasmanian electricity entities. The Panel believes that a thorough review of the business decision frameworks is the appropriate way to establish whether the community can be confident that fully commercial decisions are routinely being made by State-owned electricity entities in relation to the electricity prices agreed to with major industrials.

¹² The Panel is also exploring the process by which the electricity entities allocate allowable revenues across customer classes to examine the potential scope for cross subsidies.

4. The composition of electricity bills

The electricity bills paid by customers cover more than the just the cost of generating the energy being consumed. Through a combination of fixed and variable charges, customers are also charged for the “transportation” of that electricity through the transmission and distribution network, as well as the provision of services by their electricity retailer, such as metering, billing and customer service functions.¹³

4.1. Components of an electricity bill

The electricity bills received by residential customers, as well as those business customers who are still being supplied their electricity under ‘bundled’ tariff arrangements are, however, significantly different from those provided to larger (contestable) customers who purchase their electricity under a contract.

Whereas the bills issued to larger customers generally show a detailed break-down of the separate costs that go into supplying them with their electricity, the accounts provided to residential and non-contestable customers lack the same degree of explanation.

As a result, many of the costs embedded in the price of electricity are not apparent to consumers from their bills. The costs involved in the electricity value-chain, as well as the extent to which they vary over time and contribute to changes in overall electricity prices are, therefore, not readily observable to most of the community.

The summarised billing information provided to non-contestable customers is limited to being able to identify:

- the fixed daily charges applying to their electricity supply;
- the number of days in the billing period to which those fixed charges have been applied;
- the per unit rates charged for delivered electricity; and
- the amount of energy they have consumed during the billing period.

¹³ The electricity industry supply chain is discussed in the Panel’s Discussion Paper *The Tasmanian Energy Sector – An Overview*.

By comparison, contestable customers are able to identify many more of the separate charges that contribute to the total cost of delivering electricity to their premises. These include:

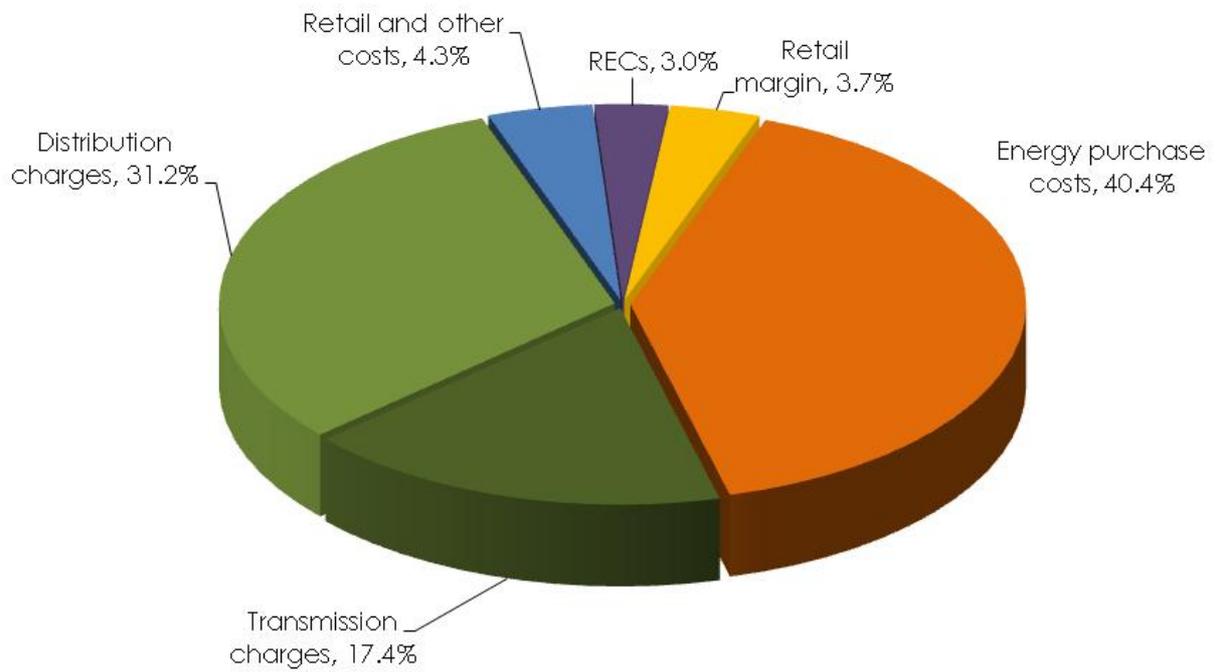
- the amount of energy consumed and the differential prices charged for that energy based on its time-of-use;
- charges for the “transportation” of that electricity via the transmission and distribution networks;
- the allowance made for distribution losses between the point of generation and the customer’s connection point;
- metering charges;
- national electricity market related fees;
- the ancillary service costs passed on to the customer, based on their energy consumption; and
- the Renewable Energy Certificate costs passed on to the customer.

All of these functions are required to provide electricity to non-contestable customers, but are not separately identified on their bills.

Figure 6 shows a breakdown of the costs drivers for non-contestable electricity prices in Tasmania. In broad terms, half of the delivered price is derived from the costs associated with “transporting” electricity through the transmission and distribution networks, around 40 per cent reflects the cost of the actual electricity that is delivered, and around 10 per cent is attributable to the retail function.

Changes in the costs within the supply chain will have consequential impacts on the prices paid by customers. Chapter 5 discusses the regulatory framework that guides how these costs are reflected in electricity prices for non-contestable customers.

Figure 6 - Components of Tasmanian residential & small business electricity prices



Source: Electricity Pricing - Information Sheet, Office of the Tasmanian Economic Regulator, Declared Electrical Services Pricing Determination, October 2010, Office of the Tasmanian Economic Regulator

5. Setting electricity prices in Tasmania

5.1. Why electricity prices are regulated in Tasmania

Even though retail contestability has been progressively rolled-out in the Tasmanian electricity market, allowing more (and progressively smaller) customers to choose their electricity retailer, the majority of customers continue to have no option but to be supplied by Aurora Energy. Without the checks and balances that come with competition in the marketplace, the potential exists for Aurora Energy to exploit its position as a monopoly business by charging these customers more for their electricity than it would be able to charge in a genuinely competitive market, hence ongoing price regulation is seen as necessary.¹⁴

5.2 Regulatory responsibilities for non-contestable electricity prices

For a long time, electricity prices in Tasmania were set by the State Government, based on recommendations made by the former Hydro-Electric Commission. In 1998, the setting of electricity prices was devolved from the Government to the TER. Since then, the TER has conducted four investigations into the maximum prices for retail electricity tariffs in Tasmania. The first of these was published in 1999, followed by investigations in 2003, 2007 and 2010.

The role (and influence) of the TER in relation to setting Tasmanian electricity prices has changed significantly over time, both as a result of ongoing decisions by the Tasmanian Government, as well as national energy reforms under the Australian Energy Market Agreement (2004) which have seen the responsibility for various aspects of electricity price regulation transferred to regulatory bodies with a national brief.

In its first pricing investigation and subsequent pricing determination in 1999, the TER was required to investigate each step in the electricity supply chain and determine:

- (a) the price at which Aurora Energy was to purchase energy from Hydro Tasmania to supply retail customers;
- (b) the price Transend Networks was able to recover for the “transport” of energy around Tasmania’s high-voltage transmission network;

¹⁴ Regardless of the level of competition in the wholesale and retail levels, price regulation of the transmission and distribution components of delivered electricity prices is required given the natural monopoly aspects of these businesses.

- (c) the prices that Aurora Energy could charge for the delivery of electricity using its distribution network; and
- (d) the reasonable cost of Aurora Energy providing retail services to its customers.

In 2003, the power to determine maximum revenues for transmission services was conferred on the Australian Competition and Consumer Commission and subsequently transferred to the Australian Energy Regulator (AER) in 2005.

The TER's investigation in 2003 covered only the operation of Aurora Energy's distribution network and the costs associated with its activities as a retailer. The Tasmanian Government determined that the allowance for the wholesale energy component built into regulated tariffs would be made, and that it would be set at the prevailing rate rolled-forward in real terms.

The 2007 price investigation was the final time the TER undertook an investigation of electricity distribution costs, and the responsibility for conducting similar investigations has since been transferred to the AER, with a new investigation has just commenced and new price controls to apply from 2012. The 2007 Determination also examined Aurora Energy's retail costs. The wholesale energy allowance that the TER was required to include when setting prices for non-contestable customers was determined by the State Government, based on expert advice¹⁵.

For the 2010 Determination, the TER was required to re-examine Aurora Energy's retail costs and, under amended Price Control Regulations, was charged with the setting the allowance for Aurora Energy's wholesale energy costs.

Table 6 shows the main components which make up Aurora Energy's cost base and, therefore, retail electricity prices, along with the economic regulators that are currently responsible for setting the prices that can be charged for each component.

¹⁵ This required amendments to the regulations under which the TER determines electricity prices. The Panel notes that returning control of part of the process for determining electricity prices to Government was effectively a reversal of one of the key components of the reforms of the Tasmanian electricity sector which began in the mid-1990s.

Table 6 - Responsibility for regulating components of Tasmanian electricity prices, 2010 determination

Component	Regulated by	Percentage
Energy Allowance	Regulator based on principles set down in the Price Control Regulations	40
Transmission Charges	AER since 2003	17
Distribution Charges	Regulator until 2011-12 then AER from July 2012	31
Retail Costs	Regulator	8
Other Retail Pass Through Costs ¹	Other Mechanisms	3
TOTAL		100²

¹Includes RECs costs and AEMO market charges

²Percentages have been rounded to the nearest whole percent

Source: 2010 Retail Price Investigation – Final Report, Office of the Tasmanian Economic Regulator.

The Panel understands that under current policy settings, the responsibility for investigating and approving retail electricity prices in Tasmania is not to be transferred to the AER, and will continue to be performed by the TER for as long as there is a requirement to do so.

However, in reflecting on its current level of oversight of the building blocks of retail prices, the TER observed that “the proportion of retail costs determined directly by the Regulator in this determination is approximately 8 per cent of the total average retail tariff”.

5.3 How are electricity prices set?

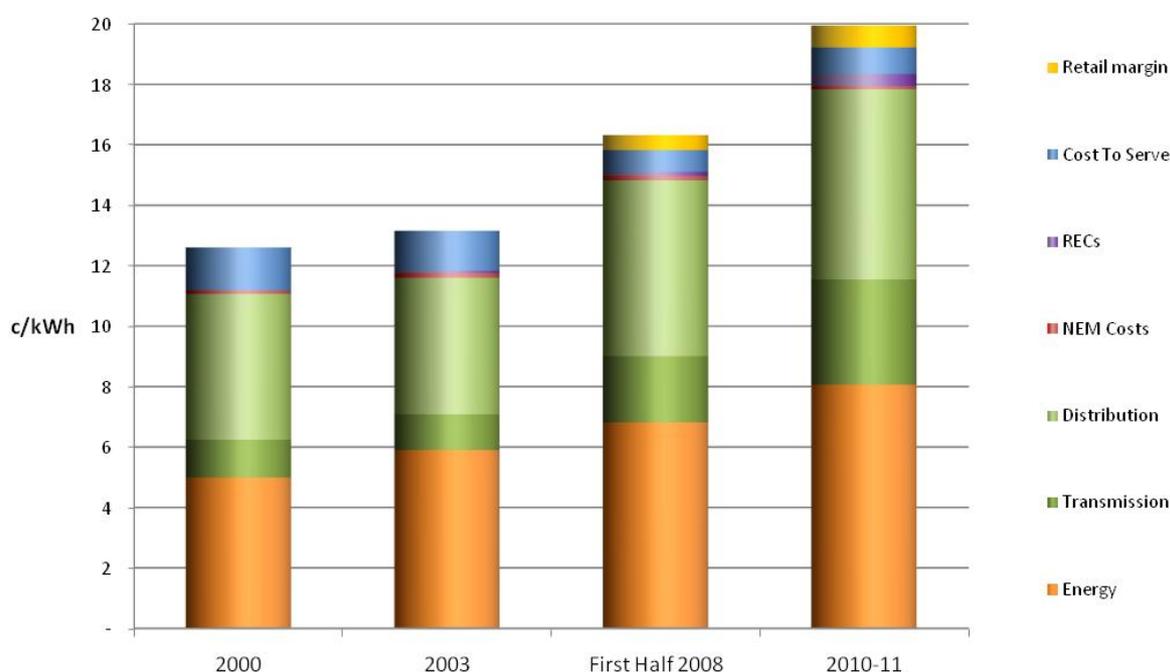
In broad terms, the prices that Aurora Energy is permitted to charge non-contestable customers are determined by the use of a ‘building block approach’ with:

- the TER periodically conducting pricing investigations to identify the revenue needed by Aurora Energy, based on the component costs of servicing its non-contestable customer base;
- the TER making a determination of the annual maximum revenue that Aurora Energy is allowed to recoup from non-contestable customers referred to as Aurora’s Notional Maximum Revenue (NMR);
- Aurora Energy determining prices of the electricity products it retails to non-contestable customers (e.g. residential light and power tariff), based on the NMR;
- the TER approving, on an annual basis, the prices (tariffs) that Aurora Energy will charge its non-contestable customers in the coming year in order to recover no more than the NMR which has been approved for that year.

5.4 Aurora's Notional Maximum Revenue

Figure 7 breaks down the contribution that each building block in Aurora Energy's NMR makes to the average per kWh cost of electricity at key points during the last decade that coincide with pricing investigations by the TER. While not representing any particular tariff, the chart illustrates the changes which have occurred in the different building blocks that combine to make up Aurora's NMR for non-contestable customers, and therefore, drive actual retail prices.¹⁶ The chart is presented in \$2009-10, meaning that the changes in each cost component

Figure 7 - Changes in Aurora Energy's NMR, \$2009-10 effects of inflation.



Source:

Data supplied by the Office of the Tasmanian Economic Regulator
 All Groups Annual Index Number (Hobart), Australian Bureau of Statistics
 Tasmanian Economic Estimates, Forecasts and Projections, Budget Paper No 1, 2010-11 State Budget

Notes

The cost per kWh shown in the chart above represents a weighted average cost per kilowatt hour across all non-contestable customers, rather than a particular tariff. The customer base to which OTTER's pricing determinations apply has contracted over the period covered in Figure 7 as the result of the phased introduction of retail contestability.

No distinction has been made between the recovery of Aurora Energy's NMR through fixed and variable charges, which are typically a feature of retail tariffs.

The cost to serve (blue) shown for 2000 and 2003 includes Aurora Energy's Retail Margin, which is separately identified (yellow) for 2008 and 2010-11.

¹⁶ With the phased introduction of retail contestability, the proportion of electricity customers for which these controls applies has reduced over each determination. Nonetheless, the chart provides an insight into some of the changes facing contestable customers over time, particularly in relation to network costs.

Costs shown for 2000 do not include the five per cent Electricity Entities Levy or reflect the net impact of the introduction of the GST in 2000-01.

Of the four main cost areas, the retail component of the supply chain, represented by Aurora Energy's cost to serve its customers and Aurora's retail margin, has contributed the least to the growth in Aurora Energy's NMR.

By comparison, the allowance provided for the cost of wholesale energy and the costs of transmission and distribution have all increased significantly in real terms. This interpretation is consistent with statements made by the TER which have cited rising network charges, both transmission and distribution, as a significant driver of the price increases seen over the last decade.¹⁷

As the single largest component of the cost of electricity, it is the growth in the allowance provided for Aurora Energy's wholesale energy purchases that has had the biggest impact on Aurora's NMR and – by extension - pricing. Table 7 provides a breakdown of Aurora Energy's NMR building blocks (in nominal terms) at key points during the previous decade.

Table 7 - Components of Aurora Energy's NMR (c/kWh, nominal)

	2000	2003	1st Half 2008	2010-11	Nominal change since 2000	Change (%)	Contribution to total change (%)
Energy	3.89	4.95	6.46	8.26	4.37	112.4	40.7
Transmission	0.89	0.99	2.07	3.56	2.67	299.8	24.9
Distribution	3.74	3.79	5.49	6.45	2.72	72.8	25.3
NEM Costs	0.09	0.13	0.14	0.10	0.02	17.9	0.1
RECs	0.00	0.06	0.14	0.41	0.41	n/a	3.9
Cost To Serve	1.10	1.12	0.68	0.90	-0.20	-18.5	-1.9
Retail Margin	0.00	0.00	0.46	0.75	0.75	n/a	7.0
Total	9.70	11.04	15.44	20.43	10.73	110.6	100

Source: Data supplied by the Office of the Tasmanian Economic Regulator

Note: Cost to serve and retail margin were separated in 2008 to align with the national framework for the breakdown of retail costs.

¹⁷ This situation is an Australia-wide phenomenon. For example, the Independent Pricing and Regulatory Tribunal (IPART) in New South Wales also found that higher network charges will increase maximum prices by 10 percentage points from 1 July 2011 (with REC costs adding another 6 percentage points). Similarly, the Queensland Competition Authority attributed around 61 per cent of the projected rise in prices in 2010-11 to rising network charges.

Table 7 shows that over the period 2000 – 2011, increases in the energy allowance provided to Aurora Energy have accounted for around 40 per cent of the nominal increase in its NMR, followed by distribution costs and transmission costs at around 25 per cent of the nominal increase each. Transmission costs have incurred the highest proportional increase, of around 300 per cent (in nominal terms) over the period. In aggregate, costs associated with the retailing of electricity have contributed around ten per cent of the nominal increases in Aurora Energy's NMR, and of this, around four per cent of the NMR is now attributable to the cost of Aurora Energy remitting Renewable Energy Certificates under Australian Government regulatory requirements (discussed further below).

Table 8 shows the changes in cost components arising from the 2010 Determination by the TER.

Table 8 - Cost components for non-contestable customers, 2009-10 and 2010-11

	2009-10 c/kWh	2010-11 c/kWh	Percentage change each component	Percentage contribution to total change
Energy, adjusted for losses	6.78	8.26	21.85	51.17
Network charges	8.84	10.00	13.03	39.80
Retail cost to serve and margin	1.44	1.64	14.43	7.16
Other retail pass through costs	0.41	0.47	13.02	1.87
Total (real\$)	17.47	20.37	16.57	100.00

Source: 2010 Retail Price Investigation – Final Report, Office of the Tasmanian Economic Regulator.

Table 8 shows that changes in the wholesale energy allowance accounted for over half the increases in prices for non-contestable customers, network charges accounted for around 40 per cent of the increase, and higher retail costs contributed less than ten per cent.

Chapter 6 examines the underlying drivers of the changes in each of these cost components to shed further light on what has been driving non-contestable prices in Tasmania in recent times.

6. The Drivers of higher electricity prices

6.1 The wholesale electricity allowance

The wholesale energy allowance represents a provision for the cost incurred by Aurora Energy in purchasing the electrical energy used by their customers. The actual price that Aurora Energy pays for this energy is not regulated, but its capacity to pay for energy, while operating profitability, is effectively capped by this allowance.¹⁸

Because of the 'allowance' approach, the actual cost to Aurora Energy of wholesale energy purchases has no direct bearing on the electricity prices paid by residential and small business customers in Tasmania during a particular regulatory period, although it does have an impact on Aurora Energy's profitability. The prices paid by these customers reflects the allowance provided for in Aurora's NMR. Where Aurora Energy's wholesale energy costs change, for example, through changes in contracting strategies, changes in contract prices or changes in spot-market prices, these are not passed through to regulated tariffs within a determination period.¹⁹ Under these arrangements, Aurora Energy carries the financial risk arising from wholesale electricity prices.

Unlike other key components of the 'building block' approach, such as network costs, the basis on which the allowance has been set has, for some time, been stipulated or controlled by the State Government, rather than determined independently by the TER. In brief:

- the TER determined the actual cost of wholesale energy purchases (ie not an allowance) in its first determination in 1999;
- successive Tasmanian governments determined that this price was to be carried forward in real terms in retail prices by way of a wholesale energy allowance factored into non-contestable customer tariff structures, with this arrangement applying until 2007;
- in 2007, the Government set the wholesale energy price allowance to be used by the TER in preparing the retail price determination, based on expert advice;

¹⁸ Aurora Energy purchases all of its electricity via the NEM. Its actual costs are a result of a combination of separate financial contracts with generators, including Hydro Tasmania and its own power station, the AETV, as well as spot-market payments (for uncontracted energy). The operation of the NEM is discussed in Appendix 2 of the Panel's Discussion Paper "*Tasmania's Energy Sector: An Overview*".

¹⁹ The Price Control Regulations provide for the TER to amend the wholesale energy allowance under certain conditions, but not on the basis that Aurora Energy's actual wholesale electricity costs differ from the allowance.

- in 2010, the TER's deterministic role was returned, with the Price Control Regulations specifying the methodology that the Regulator was to use in determine the wholesale energy allowance.²⁰

Under these arrangements, the wholesale energy allowance has steadily increased in nominal terms. For example:

- under the roll-forward arrangement that was in place prior to the 2007 Determination, the wholesale energy allowance was \$50.70/MWh in 2007;
- the average energy price that the Regulator was required to assume in accordance with the Price Control Regulations in the 2007 Determination (to apply from 2008) was \$60/MWh, rising to \$63/MWh in June 2010; and
- the determination under the amended Price Control Regulations in 2010 resulted in a further increase in the wholesale energy allowance for 2010-11, rising to \$75.05/MWh.²¹

Given the materiality of wholesale energy in the delivered cost of electricity and its contribution to the rate of growth, the limited role and/or discretion that the TER has had in determining the wholesale energy allowance over time is notable, and is a matter that the Panel is considering in relation to Terms of Reference 1, dealing with the efficiency and effectiveness of the regulatory arrangements.

In addition to the role of government in price setting, one of the other key considerations for the Panel is the appropriateness of the application of a long run marginal cost approach relative to the use of market-based prices, given the current supply and demand balance in Tasmania.²² The Panel is also reviewing the way in which the long run marginal cost methodology was defined in the Price Control Regulations and the way it was estimated by the TER.

²⁰ The Price Control Regulations specified that the wholesale energy allowance must be more than or equal to the long-run marginal cost of electricity generation by a notional electricity generator to supply electricity to non-contestable customers on mainland Tasmania. The Panel notes that this level of prescription contrasts with the very broad direction that the Price Control Regulations otherwise provides to the TER, which place the onus largely on it to determine and apply the most appropriate form of price controls to other 'declared' services. This issue will be further investigated by the Panel in considering the efficiency and effectiveness of the regulatory regime (Terms of Reference 1).

²¹ The Panel also notes that Tasmanian spot market prices have shown a sustained reduction since 2008-09. The average spot price in Tasmania during 2008-09 was \$58.48, which fell to \$29.37 in 2009-10 and \$28.72 during the first 9 months of 2010-11. By contrast, wholesale energy allowance has risen by nearly 20 per cent (in nominal terms) from 2009-10 to 2010-11.

²² A variety of approaches are applied in other jurisdictions in setting standing offer arrangements. The TER's 2010 Determination included estimates of market-based prices in Tasmania for non-contestable load that were 10-12 per cent lower than the estimated LRMC-based prices. This broadly translates into a 5 per cent difference in prices for non-contestable tariffs.

This issue received attention in the TER's final report on the 2010 Retail Price Investigation, in which the Regulator noted that *"even though the market price estimated by the consultant was lower than its estimate of the LRMC, the Regulator was constrained by the Price Control Regulations."*

Table 9 shows the energy price which was factored in to determining Aurora Energy's Notional Maximum Revenue for 2010-11, 2011-12 and 2012-13.

Table 9 - Electricity supply cost allowance specified for 2010 retail price investigation, (real \$2010-11)

	2010-11	2011-12	2012-13
Allowance, \$/MWh (real 2010-11\$)	75.05	74.70	75.90
Allowance, ¢/kWh (real 2010-11\$)	7.5050	7.4703	7.5897

Source: Declared Electrical Services Pricing Determination, October 2010, Office of the Tasmanian Economic Regulator

Note: It should be noted that the cost of the electricity actually delivered to customers which is factored into Aurora Energy's NMR is slightly higher than that shown in Table 6, because the energy supply cost allowance does not account for the difference between the quantity of energy consumed and the quantity of electricity produced to supply that load as the result of distribution losses.

6.2 Transmission charges

Transend Networks owns and operates Tasmania's transmission network. Transend charges Aurora Energy's distribution business, as well as large users of electricity who take their electricity directly from the high-voltage transmission network, for the use of its transmission system. Those transmission charges are then passed through by Aurora Energy's distribution business to all electricity retailers, who in turn pass those costs onto customers.²³

As shown in Table 10, transmission costs are estimated by the TER to represent around 17 per cent of total retail electricity bills for residential and small business customers in Tasmania.

Electricity transmission networks are highly capital intensive businesses. At the most basic level, the essence of the transmission businesses model is:

- invest capital in the network to provide services;
- operate and maintain the network on a year-by-year basis; and

²³ Transmission prices are subject to regulation for all classes of customers, not just non-contestable customers. As noted in Chapter 4, non-contestable customer's bills do not show network tariffs separately – these are bundled together to determine the fixed daily charge and per unit tariffs.

- recover annual operating costs and earn a return to on the investment to fund debt and provide a financial return equity providers.

The setting of electricity transmission prices involves the AER determining Transend Network's Maximum Allowable Revenue (MAR)²⁴ by assessing a range of factors such as:

- the value of transmission assets being employed (the Regulatory Asset Base);
- the reasonable costs of maintaining and improving the transmission network;
- the costs incurred by Transend Networks in operating the network;
- the return of capital through depreciation charges; and
- providing a return to the business' owners and the funding of debt (return on capital).

Transend Networks then, using its own pricing policies, sets the fees and charges that it will apply to its customers in order to recover the MAR set by the AER.

6.2.1. The cost of transmission

In 2009-10, Transend Networks received revenues of \$165.8 million for the provision of prescribed (i.e. regulated) transmission services.

Table 10 shows the revenue Transend Networks received between 2004-05 and 2008-09 from the provision of prescribed services, followed by the annual MAR determined by the AER for each of the years between 2009-10 and 2013-14.

As can be seen from Table 10, the revenue Transend Networks is permitted to recover increased in nominal terms by 33.5 per cent in the four year period from 2004-05 to 2008-09, and is set to increase by a further 51.9 per cent during the current five year regulatory period. It is this growth in allowed revenue that is driving the increases in transmission costs incorporated into non-contestable prices, shown in Figure 7 and Table 7.

²⁴ The use of the term 'maximum allowable revenue' is, however, something of a misnomer. This is because the MAR set for transmission network service providers in any given year is actually recovered in full. In the event that Transend Networks does not recover its allotted MAR in a particular year, it is permitted to recover the shortfall in the two following years via adjustments to its pricing, just as it is expected to return any revenue over and above its MAR to customers.

Table 10 - Transend Networks transmission revenue (prescribed services), \$ nominal

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Transmission Revenue (\$M)	108.0	115.0	123.3	130.1	144.2	177.2	195.6	206.7	224.1	237.8

Source: Transmission Network Service Provider Electricity Regulatory Report, Australian Energy Regulator. (Reproduced in Tasmanian Energy Supply Industry Performance Report 2009-10, Office of the Tasmanian Economic Regulator)
AER Statement on updated for Transend Transmission Determination 2009–10 to 2013–14

The AER estimated that the effect of its decision on average transmission charges in Tasmania would be an increase in average transmission charges over the next regulatory control period of 6 per cent per annum (nominal) or 3.5 per cent per annum in real terms (\$2008–09).²⁵

Based on Transend Networks' MAR as set by the AER, the total cost of electricity transmission during the period covered by the AER's determination is expected to increase at a rate that outstrips the average growth in Tasmania's peak demand, or the growth in electricity consumption forecast by Transend Networks prior to the AER determination. In its *2008 Annual Planning Report*, Transend Networks forecast an average increase in maximum demand within Tasmania of 1.9 per cent per annum over the next regulatory period.

6.2.2. Transmission costs drivers

The principal driver of Transend Network's growing MAR is the historic and forecast rate of growth in the Company's regulated asset base.

Across the five year regulatory period running from 2009-10 to 2013-14, asset-related costs, which includes return on capital and depreciation, which make up 62.5 per cent of Transend Network's MAR, are expected to increase at an average rate of 10.2 per cent per annum in nominal terms.

This is largely being driven by the increasing value of Transend Network's Regulatory Asset Base, which is the result of the impact growing asset valuations and new capital expenditure.

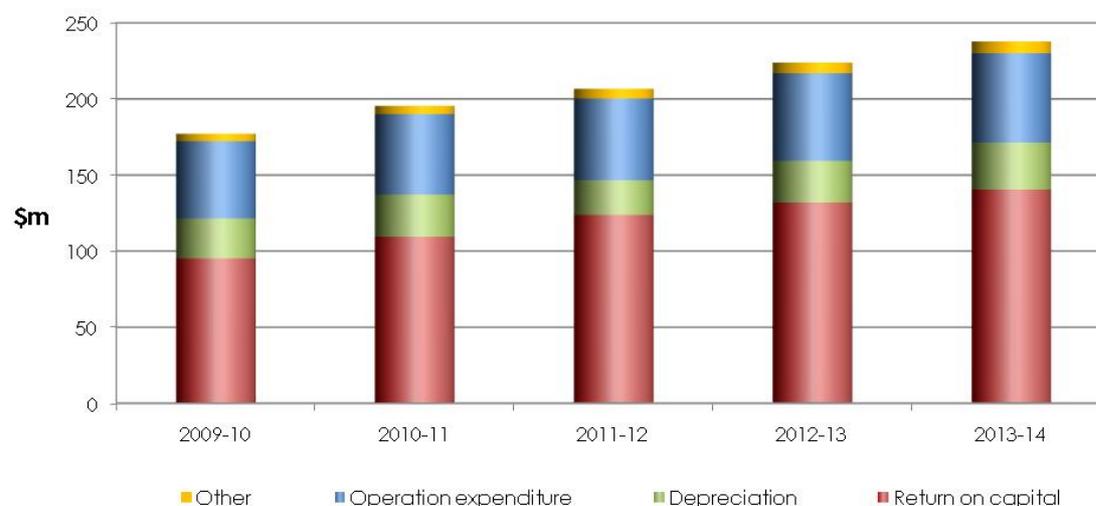
By contrast, operating costs, which account for less than one-third of Transend Network's annual costs, are increasing relatively modestly.

²⁵ Transend Transmission Determination 2009–10 to 2013–14 (Final Decision), Australian Energy Regulator

Across the five year regulatory period running from 2009-10 to 2013-14, the recovery of operational expenditure, on average, increases in nominal terms by 2.9 per cent per annum.

Figure 8 shows the components of Transend Network's annual building-block revenue requirement over the period covered by the AER's most recent investigation of transmission pricing in Tasmania.

Figure 8 - AER final decision on annual building block revenue requirement, \$ nominal



Source: AER Statement on updated Transend Transmission Determination 2009-10.

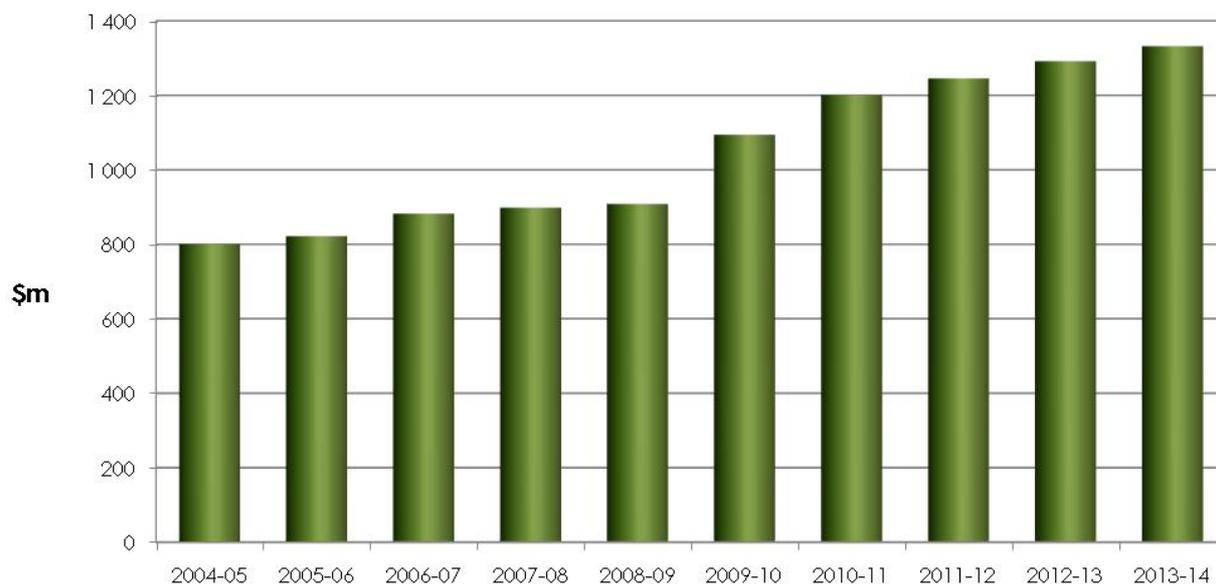
Table 11 shows the forecast growth in the value of Transend Network's Regulatory Asset Base across the period covered by the AER's most recent determination (2009-10 to 2013-14) and contrasts it with the expenditure which occurred during the period covered by the final transmission pricing determination made by the TER, for the period 2004-05 to 2008-09. During the previous regulatory period, Transend Network's RAB grew by approximately 41 per cent in nominal terms. In the period covered by the AER's determination, Transend Network's RAB is forecast to increase in value by a further 68 per cent in nominal terms.

Table 11 - Closing value of Transend Network's Regulator Asset Base, \$ nominal

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Transend's closing RAB (\$M)	696.1	737.3	811.4	850.8	884.5	1 093.9	1 237.1	1 318.2	1 404.2	1 488.5

Source: AER Statement on updated for Transend Transmission Determination 2009-10 to 2013-14, Australian Energy Regulator
Transend Transmission Determination 2009-10 to 2013-14 (Final Decision), Australian Energy Regulator

Figure 9 - Closing value of Transend Networks' Regulatory Asset Base, \$2009-10



Source: Final Decision - Transend Transmission Determination 2009-10 to 2013-14, Australian Energy Regulator; Statement on updates for final decision—Australian Competition Tribunal orders (March 2010), Australian Energy Regulator; Australian Weighted Average CPI, All Groups Annual Index Number - States (original), Australian Bureau of Statistics; Tasmanian Economic Estimates, Forecasts and Projections, Budget Paper No 1, 2010-11 State Budget.

In relation to capital expenditure by transmission network service providers, the objective of economic regulation is to ensure that:

- there is a genuine need to undertake the expenditures being proposed;
- that any expenditure on asset renewal and replacement is economically justified, and that there are not more cost effective alternatives to that expenditure; and
- the capital expenditure is being delivered efficiently.

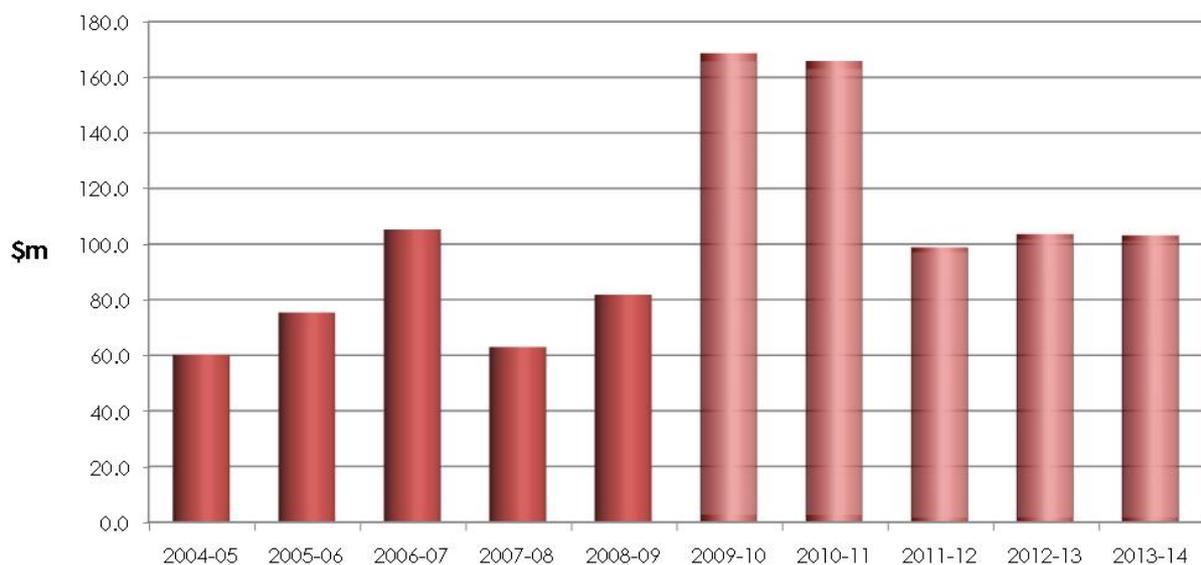
As can be seen from Table 12 under the AER's latest pricing determination, Transend Network's capital expenditure is to increase from an aggregate \$356 million in the period 2004-05 to 2008-09 to \$672 million in the five years from 2009-10 to 2013-14, an increase of nearly 90 per cent in nominal terms.

Table 12 - Transend Network's capital expenditure, \$ nominal

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Transend's capital expenditure (\$M)	52.3	67.6	96.8	59.6	79.7	168.7	170.9	104.6	112.7	115.2

Source: AER Statement on updated for Transend Transmission Determination 2009-10 to 2013-14, Australian Energy Regulator
Transend Transmission Determination 2009-10 to 2013-14 (Final Decision), Australian Energy Regulator

Figure 10 - Transend Networks' capital expenditure, \$2009-10



Source: AER Statement on updated for Transend Transmission Determination 2009-10 to 2013-14, Australian Energy Regulator
Transend Transmission Determination 2009-10 to 2013-14 (Final Decision), Australian Energy Regulator
All Groups Annual Index Number (Hobart), Australian Bureau of Statistics
Tasmanian Economic Estimates, Forecasts and Projections, Budget Paper No 1, 2010-11 State Budget

Note: Lighter shading denotes AER forward estimates.

The AER concluded that there was no evidence that Transend's expenditure was not justified and prudent.²⁶

²⁶ Comparisons of Transend Networks' capital expenditure proposals with benchmarks commissioned by the AER to assist with its 2007 pricing investigation for the SP AusNet transmission network in Victoria showed that Transend Networks appeared to have fairly high asset replacement costs, as a proportion of RAB value. When Transend Network's capital expenditure was considered as a function of network length or per GWh of

The AER attributed the increase in Transend Network's capital expenditure to a number of factors. These included the need to replace and maintain ageing assets, the increased capital expenditure needed to comply (from 1 January 2008) with new reliability standards specified in the revised Regulations, and higher input costs such as construction materials and labour (as a consequence of the commodity/minerals boom).

6.3 Distribution charges

Network charges enable Aurora Energy to recover from its customers (electricity retailers, including Aurora Energy's retail business) the costs associated with the distribution network, and distribution costs represent just over 30 per cent of total retail electricity bills in Tasmania (see Figure 6).²⁷

The core business model for an electricity distribution business is similar to that for a transmission business, and the economic regulation of distribution businesses is broadly similar to that for transmission.

The maximum prices that Aurora Energy can charge for the "transportation" of energy through its distribution network are determined by regulatory imposed annual revenue cap (the Maximum Allowable Revenue), followed by an assessment of the pricing proposals it develops by the relevant regulator (the TER until 2011 and the AER thereafter) for consistency with the MAR.

Aurora Energy's MAR is set after an investigation has been conducted into a range of factors, such as:

- the value of distribution assets being employed (the Regulatory Asset Base);
- the reasonable costs of maintaining and improving the network;
- the costs incurred by Aurora Energy in operating the network;
- the return of capital through depreciation; and
- providing a return to the business' owners and the funding of debt.

The combination of these factors determines Aurora Energy's Aggregate Annual Revenue Requirement, and added to this are metering charges to derive Aurora Energy's MAR for its distribution business.

transmitted energy, however, Transend's expenditure was amongst the lowest of the transmission networks included in the study.

²⁷ The Panel is developing its understanding of how these costs are spread across customer classes, and the balance of recoveries between fixed daily charges and per unit rates.

Once the MAR has been determined, Aurora Energy - using its own pricing policies - sets the fees and charges that it will apply to its customers in order to recover no more than its MAR. This calculation includes the allocation of network charges between different classes of customers, which involves Aurora going through a process of identifying network costs which are attributable to specific large customers, who are typically contestable, and excluding those costs from the MAR to be recovered from all other customers. The network tariffs developed by Aurora are required to be submitted to the relevant Regulator for approval each year.

Under the existing Tasmanian Price Control Regulations, the distribution tariffs applying to a particular class of customer are required to be uniform, regardless of where in Tasmania the customer is supplied with electricity. This is a very important aspect of the regulatory framework which has an impact on the prices paid by customers.²⁸

6.3.1 The cost of distribution

Under the TER's current distribution determination, which applies until 30 June 2012, Aurora Energy's MAR for its distribution business ranges between \$225 million and \$250 million per annum, expressed in 2009-10 dollar values. The following table shows Aurora Energy's MAR for each year in the current regulatory period, based on an original table published by the TER, which presented the annual MAR figures in 2006 dollars.

Table 13 - Maximum allowable revenue for distribution services, including metering revenues

	1st half 2008	2008-09	2009-10	2010-11	2011-12	Total
June 2006\$	100.065	205.583	212.387	221.866	228.532	968.433
Nominal\$	105.641	218.767	233.080	249.151	256.637	1 063.275
\$2009-10	109.814	225.613	233.080	243.482	250.797	1 062.786

Source: Investigation of Prices for Electricity Distribution Services and Retail Tariffs on Mainland Tasmania - Overview to the Final Report, OTTER
Australian Weighted Average CPI, All Groups Annual Index Number - States (original), Australian Bureau of Statistics

Note: As part of its distribution pricing determination in 2007, the TER agreed to align the regulatory period with financial years. To facilitate the transition from calendar to financial years, a part-year determination was required for the first half of calendar year 2008.

²⁸ This use of 'postage stamp' pricing, rather than 'nodal' pricing, means no locational pricing signals are sent through distribution network prices in Tasmania. For example, a residential customer in Lenah Valley makes the same contribution to network costs as a customer in Port Arthur, despite the fact that the customer in Lenah Valley is located adjacent to a Transend Network transmission yard and, arguably, utilises minimal distribution network services, particularly when compared to the customer in Port Arthur.

Table 14 shows that the revenue Aurora Energy is permitted to recover in relation to its distribution services is set to increase over the current regulatory period. If the transitional half-year MAR in 2008 is annualised for comparative purposes, in nominal terms the total recoverable costs of Aurora Energy's distribution network are forecast to increase by 21.5 per cent across the regulatory period. In real terms, this represents an increase of 14.2 per cent. This follows an 11.6 per cent real increase in Aurora Energy's MAR for distribution services during the previous regulatory period.

Table 14 shows Aurora Energy's maximum allowable revenue over the previous decade, expressed in 2009-10 dollar terms. The table shows that from 2000-01 to 2009-10, Aurora Energy's MAR increased by 28.8 per cent in real terms.

Table 14 - Aurora Energy's Maximum Allowable Revenue (including metering revenue), \$2009-10

2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
170.989	166.165	153.894	174.631	172.552	171.265	171.733	219.628	255.613	233.080

Source: Investigation into Electricity Supply Industry Pricing Policies – Final Report, November 1999, Investigation of Prices for Electricity Distribution Services and Retail Tariffs on Mainland Tasmania – Final Report and Proposed Maximum Prices (September 2003), 2007 Electricity Pricing Investigation – Final Report, OTTER
Australian Weighted Average CPI, All Groups Annual Index Number - States (original), Australian Bureau of Statistics

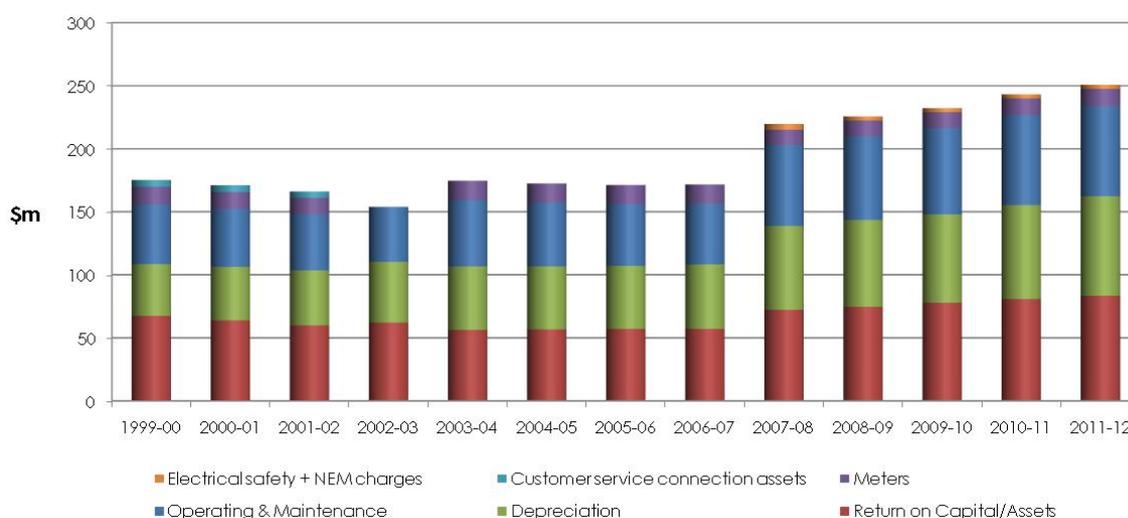
Note: The part-year determination for the first half of calendar year 2008 has been annualised for comparative purposes, and is presented in the above table as the 2007-08 MAR.

6.3.2 Distribution costs drivers

Electricity distribution networks are capital intensive businesses, and the value of a network provider's regulated asset base is the most significant factor in determining the maximum revenues that it is able to recoup from its customers. Based on the three distribution-pricing investigations undertaken by the TER over the last decade (in 1999, 2003 and 2007), asset-related costs, comprising a return on assets and depreciation have represented not less than 62 per cent of Aurora Energy's distribution AARR, and in 2009-10 had risen to 68.5 per cent.

By way of contrast, operating expenditure comprises less than one-third of Aurora Energy's aggregate annual revenue requirement, although its contribution has progressively increased since 2000, when operational expenditure represented just over a quarter of Aurora Energy's distribution AARR. Figure 11 illustrates the components of Aurora Energy's annual revenue requirement for its distribution network business.

Figure 11 - Components of distribution annual aggregate revenue requirement, \$2009-10



Source: Investigation into Electricity Supply Industry Pricing Policies – Final Report, November 1999, Investigation of Prices for Electricity Distribution Services and Retail Tariffs on Mainland Tasmania – Final Report and Proposed Maximum Prices (September 2003), 2007 Electricity Pricing Investigation – Final Report, OTTER
 Australian Weighted Average CPI, All Groups Annual Index Number - States (original), Australian Bureau of Statistics

Table 15 shows the change in Aurora Energy's AARR from 2000 to 2010-11, demonstrating the impact of its growing asset base. Depreciation is a function of asset values, so increases in the asset base drive higher depreciation costs. Depreciation has increased by 81 per cent in real terms over the period, representing 49 per cent of the overall increase in Aurora Energy's AARR. The return on assets, which provides for the funding of debt and a return to the Government on its equity in Aurora Energy's distribution business, accounted for 20 per cent of the AARR increase and grew by 20 per cent, in real terms. Operating costs increased by 51 per cent over the same period, accounting for 36 per cent of the over increase in AARR.

Table 15 - Aurora Energy's Distribution AARR, 2000 and 2010-11

	2000	2010-11	Change	Share of change in AARR
O&M	\$47.4M	\$68.4M	51%	36%
Depreciation	\$41.2M	\$70.0M	81%	49%
Return on Assets	\$67.4M	\$77.9M	20%	20%
Other	\$19.4M	\$15.9M	-16%	-5%

Source: Investigation into Electricity Supply Industry Pricing Policies – Final Report, November 1999, Investigation of Prices for Electricity Distribution Services and Retail Tariffs on Mainland Tasmania – Final Report and Proposed Maximum Prices (September 2003), 2007 Electricity Pricing Investigation – Final Report, OTTER
Australian Weighted Average CPI, All Groups Annual Index Number - States (original), Australian Bureau of Statistics

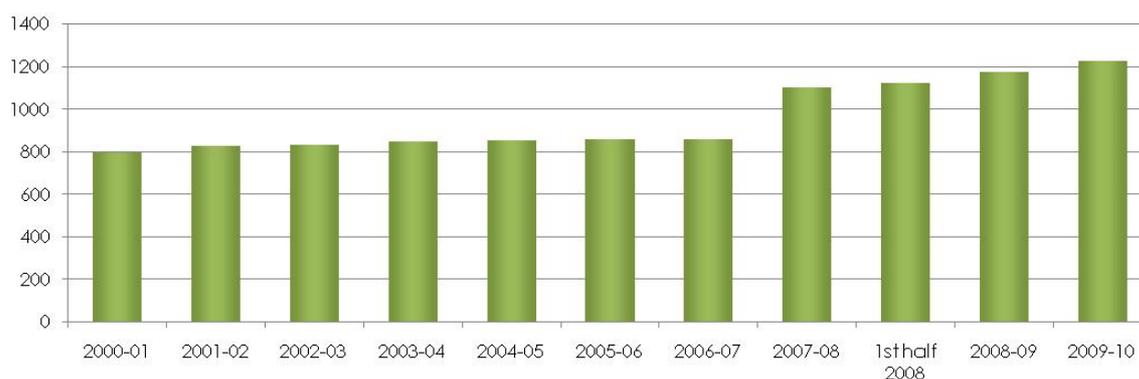
6.3.3 Assets Growth

The value of distribution assets changes over time due to:

- depreciation, which recognises the decreasing service life of those assets;
- new capital expenditure, which represents additions to the asset base; and
- asset revaluations.

Figure 12 shows the value of Aurora Energy's regulated distribution assets over the last decade, upon which the MAR, and, therefore, electricity prices, have been based.²⁹

Figure 12 - Aurora Energy's Regulatory Asset Base (closing values, as per regulatory determinations), \$2009-10



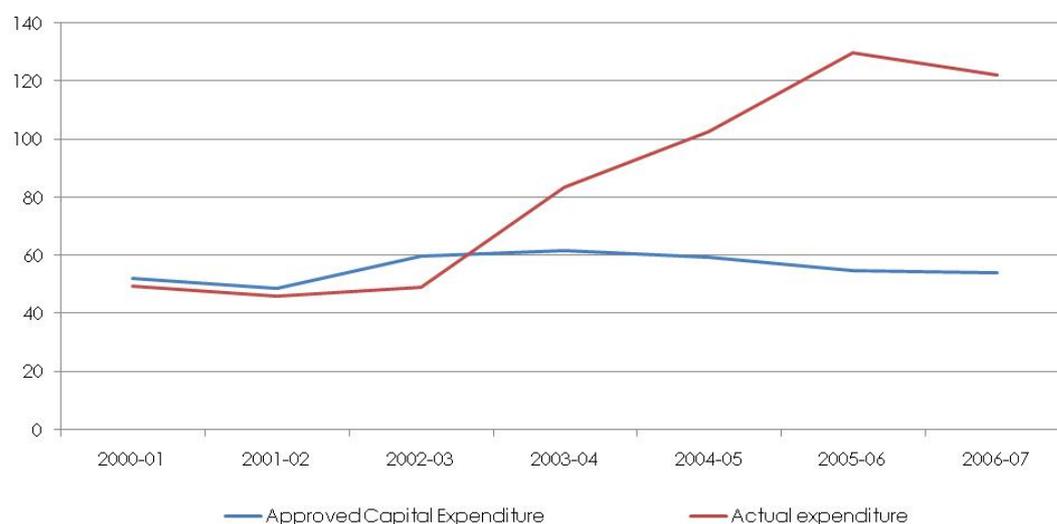
Source: Investigation into Electricity Supply Industry Pricing Policies – Final Report, November 1999, OTTER
Investigation of Prices for Electricity Distribution Services and Retail Tariffs on Mainland Tasmania – Final Report and Proposed Maximum Prices, September 2003, OTTER
2007 Electricity Pricing Investigation – Final Report, OTTER

²⁹ These do not necessarily reflect the book value of Aurora Energy's asset values, rather the value determined for regulatory purposes in TER determinations.

Figure 12 shows that the value of Aurora Energy's distribution-business assets grew only incrementally in real terms during the first half of the decade, meaning that the value of distribution assets in Tasmania placed only limited upward pressure on retail electricity prices. In 2007-08, however, a step-change can be seen in the valuation of Aurora Energy's distribution assets, followed by a predicted acceleration in the rate of growth in those asset values over the current regulatory period.

In its 2007 investigation of distribution network pricing, the TER reported that Aurora Energy's actual capital expenditure during the preceding regulatory period was substantially above the levels approved as an outcome of the TER's 2003 investigation. Figure 13 shows this overspend.

Figure 13 - Aurora Energy capital expenditure, \$2009-10



Source: OTTER

Investigation by a consultant, commissioned by OTTER, found the expenditure during that period to be prudent, having been largely caused by customer-driven capacity augmentation. This included expenditure on the network to service new connections, following a period of high load growth and customer connection rates consistent with the growth that was occurring in both the Tasmanian economy and population at that time.

On that basis, the TER determined that all of the additional actual capital expenditure would be taken into account when setting the opening value of the regulated asset base from 1 January 2008, and this accounts for a large proportion of the step change in Aurora Energy's distribution RAB (as the overspend was not included in the preceding RAB).

The change in Aurora Energy's distribution RAB is also due to significant infrastructure construction and augmentation programs, which are needed to remedy a number of constraints identified within the distribution network throughout the State, as well as comply with new distribution network reliability standards that came into force from 1 January 2008.

6.4 Retail and Other costs

As noted above, the TER estimates that electricity retail costs make up approximately 11 per cent of residential and small-business customers' electricity bills (see Figure 6). Retail costs can be further broken down into their two principal components – operating expenditure (or 'cost to serve') and retail profit margins – with operating expenditure comprising the larger share.³⁰

The costs incurred by electricity retailers and recovered from their customers include a number of expenses, which are detailed below.

6.4.1 Cost to serve

An electricity retailer's cost to serve represents the cost of providing services to its customers. In Aurora Energy's case, this means the operating costs which are attributable to the non-contestable customer base in Tasmania (i.e. residential and small business customers).

The cost to serve includes the costs associated with billing and revenue collection, marketing expenditures that relate to non-contestable customers, the provision of advice and answers to customer queries (via a call centre and/or website), as well as an appropriate proportion of corporate overheads and regulatory compliance costs.

Sales and marketing costs

The TER scrutinises the proposed marketing cost nominated by Aurora Energy and provides an allowance for those costs that are, in the TER's view, relevant and appropriate to serving a customer base that has no choice in the selection of its electricity retailer.

³⁰ According to the AER, at a national level, electricity retailers' operating costs range from between 4 to 8 per cent of the total bills paid by customers, while retail profit margins are within a range of 3 – 5 per cent.

It is important to note that the marketing expenditure that the TER has allowed Aurora Energy to recover from its customers does not include, for example, Aurora Energy's sponsorship of Aurora Stadium in Launceston, nor the cost associated with producing the *Warm* television program that screened on commercial television in Tasmania in 2009.

6.4.2 Customer acquisition and retention costs

In other regions of the NEM where full retail contestability has been introduced, some regulators explicitly include an additional allowance in retail costs to cover customer acquisition costs, when determining the efficient cost to serve for an incumbent retailer.³¹ This extra cost is passed on in the fall back tariff arrangements which apply to customers who are yet to enter into a contract with an electricity retailer of their choice.

In the absence of full retail contestability in Tasmania, there is no such allowance factored into the TER's calculation of Aurora Energy's cost to serve.

6.4.3 The process for setting Aurora Energy's cost to serve

The allowance made for Aurora Energy's cost to serve in the prices for non-contestable customers in Tasmania is determined by the TER, striking a balance between requiring customers to pay only for the efficient cost of delivering services and the need to ensure the ongoing financial viability of Aurora Energy's electricity retailing activities.

The TER adopts a benchmarking approach to setting the allowance for the cost to serve, adjusted to take account of the local market context and circumstances in each case. Benchmarking involves the comparison of Aurora Energy's costs with the allowances for cost to serve set by economic regulators as part of similar pricing determinations in other regions of the NEM. The local factors taken into account include the relative economies of scale available to the electricity retailers with which Aurora Energy is being compared, the potential for productivity gains by Aurora Energy over the coming regulatory period, the level of services required in each jurisdiction and the efficient costs associated with providing those services.

³¹ In its pricing determination for 2010-11, the Queensland Competition Authority allowed for \$40.50 in customer acquisition and retention costs, and the Independent Pricing and Regulatory Tribunal of New South Wales allowed for acquisition costs of \$36.80 (expressed in \$2009-10). In a submission to the Independent Competition and Regulatory Commission as part of the investigation that informed the ICRC's determination of electricity prices in the Australian Capital Territory for 2010 to 2012, electricity retailer ActewAGL contended that its cost to serve should include an allowance for customer acquisition costs of \$28 per customer, although this was ultimately not accepted by the ICRC.

Importantly, while Aurora Energy is provided with an allowance in its regulated tariffs for cost to serve which is based on the delivered 'efficient costs' of servicing its non-contestable customer base, its actual cost to serve can be higher or lower than the allowance.

- Where Aurora's actual cost to serve is higher than the allowance, Aurora Energy is unable to recover that cost difference through changes to its pricing, meaning that electricity consumers are shielded from any impact.
- The impact does, however, impact on the profitability of Aurora Energy's retailing business, and ultimately impacts on the funds available to pay a dividend (which flows to the State Budget), retire debt or fund capital expenditure across the overall business.

6.4.4 Aurora Energy's cost to serve allowance

Aurora Energy contended that it should be benchmarked against an allowance of \$105 per customer for 2010-11, plus a further allowance for its diseconomies of scale. This estimate of cost to serve was developed by the Independent Competition and Regulatory Commission in the Australian Capital Territory.³²

The TER did not support this view, and has allowed a cost to serve of \$94 per customer (set in real terms, \$2009-10), which means this will be index by CPI during the regulatory period.³³

By way of comparison:

- IPART allowed for annual retail operating costs of \$75.30³⁴ per customer for Integral Energy in 2009-10, which is one of three franchised retailers in New South Wales, and has significant scale economies by comparison with Aurora Energy;
- the QCA provided for \$85.90 per customer in general retail operating costs for Queensland retailers in 2010-11; and
- ESCOSA set the retail cost to serve to be included in the regulated tariffs in South Australia in 2010 at \$88 per customer (\$Mar'08).³⁵

³² Retail Prices for Non-contestable Electricity Customers 2010-2012, Independent Competition and Regulatory Commission

³³ Declared Electrical Services Pricing Determination, October 2010, Office of the Tasmanian Economic Regulator

³⁴ Expressed in 2009-10 dollars

³⁵ 2007 review of retail electricity price path: Final inquiry report and price determination, ESCOSA.

6.5 Retail margin

Retail margin represents the return an electricity retailer earns on the investment it must make in order to provide retail services and includes an allowance for the risks it assumes in providing those services. Without an adequate retail margin, the retailer would be unable to obtain the funds needed to provide those services, that is, fund debt and provide a return to shareholders on the equity invested in the company, in Aurora's case those returns flow to the State Budget.

In a competitive market, the incorporation of a retail margin into the regulated standing offer prices offered as a fallback to customers who do not enter into a market contract needs to compensate retailers for the risks arising from the competitive wholesale market (noting that these prices in that market are not regulated and are highly variable). Careful consideration needs to be given to setting the margin to ensure that the regulated arrangements do not act as a barrier to competition. A degree of 'head room' in regulated electricity prices is required, which allows for competition on the basis of price.³⁶ This is not the case in Tasmania, where Aurora Energy continues to have the sole franchise to retail electricity to residential customers and small businesses.

6.5.1 The process for setting the retail margin

In determining the allowed retail margin, the TER forms judgements by examining recent allowances provided by regulators in other Australian jurisdictions, adjusted to take into account the local market context and prevailing circumstances in each case.

The majority of recent regulatory decisions have been defined in terms of a net margin on earnings before interest, tax and depreciation (EBITDA), expressed as a percentage of total revenue. An EBITDA retail margin is generally set so as to recover:

- return on capital invested in the retail business;
- financing expenses;
- depreciation charges; and
- risk associated with bad debts, energy purchase risk and volume risks.

³⁶ If the margins embedded in these fallback arrangements are set high and there is effective competition between retailers, the "allowed" margin would be competed away to the market rate. On the other hand, if the margin is set too low, there is no incentive for customers to move off the fallback arrangements. In this context, there is a bias towards setting a conservatively high retail margins in jurisdictions where there is effective competition at the retail level.

6.5.2 Aurora Energy's retail margin

Aurora Energy's net retail margin in 2009-10, as set by the TER, was 3.8 per cent per annum on total costs, (which was calculated to be equivalent to 3.7 per cent of sales).

By comparison:

- the retail margin (as a percentage of sales) applying in the Australian Capital Territory in 2009-10, was 5.0 per cent, increasing to 5.4 per cent in 2010-11.³⁷
- the QCA provided a retail margin of 5.0 per cent (of total costs) in 2009-10, which it carried forward in its final decision for 2010-11.
- IPART set a retail margin of 5.4 per cent for the regulatory period commencing on 1 July 2010, which was slightly higher than the previous allowance of 5.0 per cent.

For the 2009-10 financial year, Aurora Energy was assessed by the AER as having the slimmest profit margin built into its electricity prices amongst the five jurisdictions within the National Electricity Market studied by the AER.³⁸

6.6 Renewable Energy Certificate Costs (RECs)

In 2000, the Australian Government implemented legislation³⁹ to promote the development of additional renewable energy in Australia, in order to reduce the greenhouse gas emissions associated with the production of electricity.⁴⁰ There have been several design changes to this framework, all of which have contributed to higher electricity costs for all customers, including non-contestable customers in Tasmania.

³⁷ Final Decision Retail Prices for Non-contestable Electricity Customers 2010-2012, Independent Competition and Regulatory Commission.

³⁸ The retail margins applying in other regions of the NEM were, however, made in the context of standing offers made available in fully contestable markets, where electricity retailers are subject to significant volume and energy price risks not faced by Aurora Energy (there is no 'churn' in the non-contestable customer base, and Aurora Energy's wholesale pricing arrangements are developed in the context of the determination of the wholesale energy allowance). Aurora Energy's bad debts, as a percentage of revenue, is lower than for most other Australian electricity retailers.

³⁹ *Renewable Energy (Electricity) Act 2000* and *Renewable Energy (Electricity) (Charge) Act 2000*, supported by the *Renewable Energy (Electricity) Regulations 2001*

⁴⁰ The initial policy intent was that two per cent of Australia's electricity was to come from renewable sources by 2010, but in August 2009, the Australian Parliament amended the *Renewable Energy (Electricity) Act* to increase the Mandatory Renewable Energy Target such that 20 per cent of electricity must come from renewable sources by 2030. On 1 January 2011, the scheme was target was split into two parts, with the purpose of encouraging both small scale renewable development (such as solar hot water heaters and roof-top wind developments) and large scale renewable power stations (such as wind farms). Details of the operation of the two schemes that now apply is available from <http://www.orer.gov.au>

As a retailer, Aurora Energy is required to submit RECs for an increasing proportion of its total sales under the requirements of the legislation.

The cost of renewable energy certificates are not set by the TER, but are determined by the Australian-wide market for RECs. The Price Control Regulations provide for the pass-through of the actual cost to Aurora Energy of its REC obligations arising from non-contestable customers in regulated non-contestable prices.

Table 7 highlighted that around 40 per cent of the increase in the retailing costs component of non-contestable prices was attributable to the cost of RECs, and that this accounted for around four per cent of the total increase in non-contestable prices.

Aurora Energy's REC obligations, in terms of actual certificates to be surrendered, will continue to rise over the medium term, as the percentage of its sales that attract REC obligations increases under the legislation. The cost to non-contestable customers of these obligations will be a function Aurora Energy's obligation to surrender a growing number of RECs (increasing the cost to customers) and the future value of those RECs, which will be determined by the rate of growth in Australia's overall renewable energy industry, both small and large scale. This issue is attracting increasing attention nationally. It is interesting to note that IPART concluded in its April 2011 draft decision on maximum retail prices in NSW that prices would need to rise by 6 percentage points from 1 July 2011 as a result of rising costs under the REC scheme. The AEMC noted that REC costs, coupled with potential carbon prices will put further upwards pressures on retail electricity prices.

It is important to note that these obligations do not relate to Tasmania's participation in the NEM. They reflect a policy stance of the Australian Government to develop Australia's renewable industry nationally.⁴¹

The Panel understands that Tasmania is currently a 'net generator' of REC, as there are more RECs generated in Tasmania than are required to meet Tasmanian aggregate REC liabilities (see Table 16).

⁴¹ Under the scheme, the majority of Hydro Tasmania's output does not attract RECs. A baseline of output was established, and only output above that baseline is eligible for RECs. The baseline was determined on a station-by-station basis, and set at the average output of each station over 1994, 1995 and 1996. Any power station commencing production from 1 January 2007 has a base-line of zero.

Table 16 – Tasmanian REC production and obligations

Year	Tasmanian REC production	Approximate Tasmanian REC obligations
2008	505 500	345 400
2009	1 048 000	400 400
2010	Na	670 000

Source: Office of Energy Planning

6.7 National Electricity Market costs

There are direct costs associated with Tasmania's participation in the NEM that are recouped from non-contestable customers. The NEM is operated on a cost-recovery basis, and its operating costs are recovered through market participation fees levied on electricity purchases on a dollar per MWh basis. The fees are determined and imposed by the Australian Energy Market Operator (AEMO) in accordance with the National Electricity Rules.

The TER allows a pass-through of AEMO costs imposed on Aurora Energy. Aurora Energy estimated that market participation fees would be around \$0.3005 per MWh per annum (in real terms)⁴², which amounts to around \$3 per annum per residential customer.

⁴² Investigation of maximum prices for declared retail electrical services on mainland Tasmania – Final Report, October 2010, Officer of the Tasmanian Economic Regulator.

