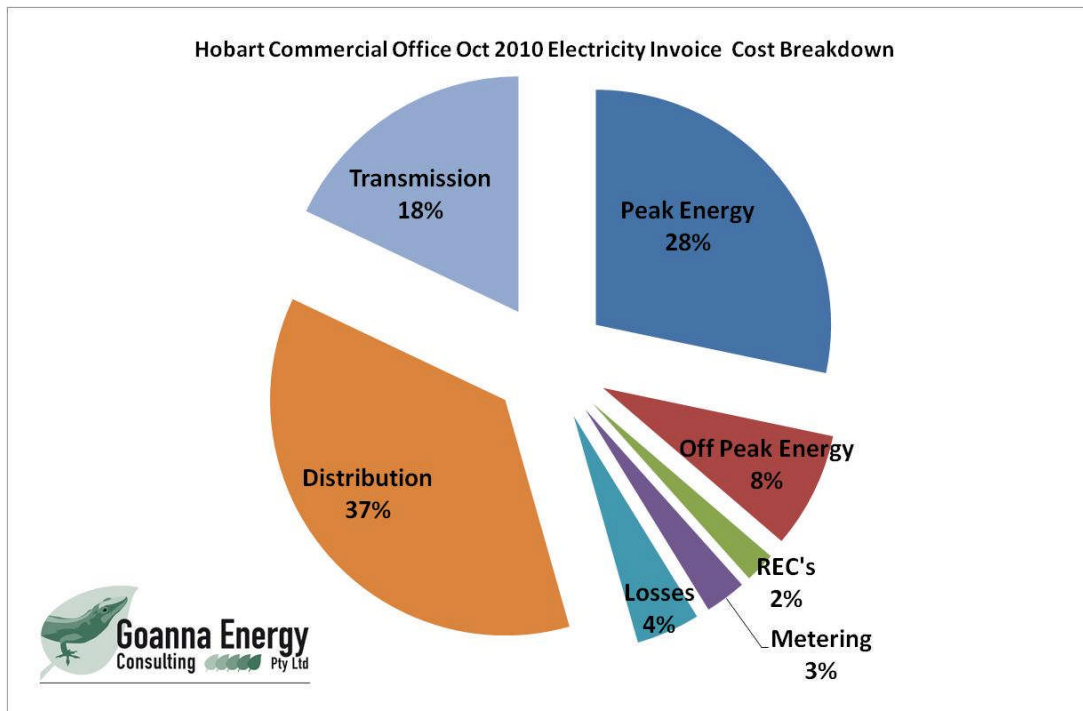


SPOTLIGHT ON TASMANIAN ELECTRICITY PRICE HIKES – OCTOBER 2010

Sometimes the obvious questions are staring you in the face, “**People still in dark about price hikes**”, (Mercury Newspaper, 2 October, 2010, P. 22). When I read Michael Robbins letter to the Editor, pleading for a simple explanation of the rising electricity costs, I was prompted to try and help explain this complex situation. I warn you it remains complex.

The total cost of delivered energy is made up by many components and the actual percentages are unique to each customer. For simplicity, I have shown only the major cost driving categories for a Hobart commercial office, which spends some \$40,000 per annum on electricity under a competitively contested market contract.



To understand why electricity prices have risen in the past, we need to look at each of the above cost categories and ask what has happened to them. Just as importantly, to predict where electricity prices are going, we need to delve into these components and see what current and future pressures are acting on each of them. So let's start with the larger slices of the pie.

Energy Distribution (Aurora Energy 37%) and Transmission (Transend 18%):
Around 55% of the average commercial energy bill is now made up from these electricity transmission and distribution costs, known as “Network Use of System” fees. These regulated costs are now the fastest growing components of the energy bill (and making sure customers select the least cost option is an increasingly important part of our business). Why?

This “Poles and Wires” infrastructure is rapidly aging, much of it is already beyond its design life expectancy, with both Tasmania and Australia facing a massive bow wave of investment. In addition the Mandatory Renewable Energy Target (MRET) is driving increases in distributed generation, such as wind farms, to be established in remote areas of the state, which requires new or at least upgraded electrical assets to connect this new generation into the grid. To cater for the intermittent nature of wind energy the network must also be upgraded to “Smart-Grid” capability, to cater for two-way energy flows that were never envisaged 30 years ago. The scope and cost of this emerging technology should not be under-estimated.

Increasing installation of reverse cycle air conditioning and large screen TV’s, is increasing peak demand for electricity, at above the rate of overall consumption growth, which requires additional investment in peak system capacity. Increasing consumer (and in some cases regulatory) expectations of quality and reliability of supply, have also driven additional investment in infrastructure, notably Transmission investment.

Adding to this, is the difficulty faced by regulators and consumer advocacy bodies in participating effectively in regulated network price determinations. Unfortunately the bodies designed to protect and lobby for consumer interests, are inherently underfunded. These groups often appear to lack access to the significant resources required to mount substantial cases into the available regulatory and legal appeal processes. For example in 2009 the Energy Users Association of Australia (EUAA) claimed that, “*there has been insufficient critical examination of Transend’s proposal.*”¹

Whilst electricity network providers historically pride themselves on being able to serve consumer demand, they are not oblivious to the somewhat self induced plight of we consumers. To their credit much work has and is being undertaken by our local network providers to provide consumers with clear pricing signals, which reflect the investment pressures on our grid. Examples of this include the introduction of new “Contract Demand” and “Time of Use” based network tariffs. The latter of which, have been designed to complement the Peak and Off Peak definitions in the energy market discussed below.

¹ Energy Users Association of Australia (13 February 2009) “*Submission to AER on the Draft Decision on Transend’s regulated revenue for the 2009 to 2014 regulatory period*”, P. IV.
[http://www.aer.gov.au/content/item.phtml?itemId=727183&nodeId=675070f0a0dbf44c91e636319d3fcee4&fn=EUAA%20\(Febuary%202009\).pdf](http://www.aer.gov.au/content/item.phtml?itemId=727183&nodeId=675070f0a0dbf44c91e636319d3fcee4&fn=EUAA%20(Febuary%202009).pdf)

Energy Generation (Mainly Hydro Tasmania, Peak Energy 28% & Off Peak Energy 8%) 36% of total cost:

Whilst recent inflows have resulted in positive dam level recovery, the previous drought conditions from 2000 – 2008 have taken their toll on energy in storage. The Basslink Facility Fee incurred from mid 2000, is reportedly in the order of some \$90M per annum² and ongoing. The cost of electricity imports, as a result of the previous drought conditions, were significant. We estimate at the average spot price, the additional cost of these imports may have totaled some \$125M per annum for 2006/7 & 2007/8. Remember, back then the total Tasmanian market revenue was around \$900M, so the combination of these factors could have represented a 24% cost increase.

The new \$450M Aurora Energy Tamar Valley Power Station³, a relatively higher cost natural gas fired plant, now plays a role in “*setting the marginal cost of generation*”.⁴ Increasing electricity consumption and demand at peak periods, mentioned above, also requires further investment in generation or alternatives. As does the increasing penetration of renewable wind energy, known as un-scheduled generation. Whilst wind energy is generally acknowledged as leading to an overall depression of spot market prices, as noted by the AER, it can also deliver more volatile spot market price outcomes.⁵ More volatile spot market pricing means more risk, which translates to higher costs for us all.

As noted by Grant King, CEO of Origin Energy, “*Energy costs are increasing regardless of a carbon signal, as international demand for coal and gas grows*”.⁶ Uncertainty around a potential future cost of carbon creates additional risks for market participants, which again translates into higher costs.

No one would disagree that if petrol prices were to spike to \$531.95 per Litre, for an hour at midday that service station attendants could comfortably go for lunch. Unfortunately the same cannot be said for electricity. Despite the Tasmanian spot market prices hitting \$12,400/MWh, or some 400 times the average on 7th and 8th August 2010, the AER Sept 2010 report noted that, Demand Side Management on

² <http://tasmaniantimes.com/index.php/?article/the-cost-of-basslink/>

³ http://www.auroraenergy.com.au/pdf/about_aurora/AETV_how_it_was_built.pdf

⁴ Hydro Tasmania (28 Sept 2010) “*Investigation of Maximum Prices for declared electrical...*”, P. 2. [http://www.economicregulator.tas.gov.au/domino/otter.nsf/LookupFiles/104304_Submission_from_Hydro_Tasmania_Re_Draft_Report_on_Electricity_Retail_Price_Investigation_100930.pdf/\\$file/104304_Submission_from_Hydro_Tasmania_Re_Draft_Report_on_Electricity_Retail_Price_Investigation_100930.pdf](http://www.economicregulator.tas.gov.au/domino/otter.nsf/LookupFiles/104304_Submission_from_Hydro_Tasmania_Re_Draft_Report_on_Electricity_Retail_Price_Investigation_100930.pdf/$file/104304_Submission_from_Hydro_Tasmania_Re_Draft_Report_on_Electricity_Retail_Price_Investigation_100930.pdf)

⁵ AER - Australian Energy Regulator, (Sept 2010) “*Report on Prices above \$5000/MWh - 7 and 8 August 2010 – Tasmania*”.

<http://www.aer.gov.au/content/item.phtml?itemId=740269&nodeId=6fa1c2015b8f9a829effb9336faee27f&fn=Prices%20above%20%245000/MWh%20-%207%20and%208%20August%20-%20Tas.pdf>

⁶ King, Grant (5 May 2010) “*A Changing World*”, Macquarie Connections, Australia Conference.

Origin Energy Presentation Slide 15. www.originenergy.com.au

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these days was “limited to 100MW”, or 7% of the total demand “presumably by a few large industrials”.⁷

What this tells us is that there is a demonstrable lack of progress with “Demand Side Management”, even five years after the introduction of a spot market for electricity in Tasmania. The price signals to consumers to turn off (apart from the obvious overall price increases), or reduce energy consumption at peak load/peak price periods are simply under-developed.

Some may say the electricity industry should hang its head in shame, for not facilitating simple and effective customer response mechanisms to these price signals, 15 years after introducing the spot market for electricity in Australia. However in their defense, what motivation has there been, as the cost of this extreme volatility is spread over all consumers?

In addition to these factors, is the retail cost of customer services and billing. For monopoly customers (residential and small business) these costs are recovered in the regulated Tariffs. For contestable customers (Commercial and industrial) these costs are generally attempted to be recovered across the energy and renewable energy components, as most other costs (E.g. Network use of System costs) are passed through “at cost”.

Aurora Energy is notably going through a Customer information System (CIS) upgrade⁸ for which the Office of the Tasmanian Economic Regulator, noted that, “Aurora submitted that an additional allowance was required ... to compensate it for the additional depreciation associated with its new Customer Care and Billing system”. In fact, noting that the “depreciation expense was set to double over the next 4 years”.⁹

Make no mistake, “CIS transformation is a herculean effort. It typically involves a financial investment of \$50 million to \$100 million or more, it can take years to complete and it introduces a host of potential pitfalls.”¹⁰ Our experience with these systems, whilst admittedly well dated these days, has shown that a significant portion of the total system costs, often only arise post the “Go-Live” system implementation date.

⁷ AER - Australian Energy Regulator, (Sept 2010) “Report on Prices above \$5000/MWh - 7 and 8 August 2010 – Tasmania”.

<http://www.aer.gov.au/content/item.phtml?itemId=740269&nodeId=6fa1c2015b8f9a829effb9336faee27f&fn=Prices%20above%20%245000/MWh%20-%207%20and%208%20August%20-%20Tas.pdf>

⁸ Stedman, M. (29 March 2010), “Aurora's \$50m cost blowout”, Mercury.

http://www.themercury.com.au/article/2010/03/29/136641_tasmania-news.html

⁹ OTTER (August 2010) “Investigation of maximum prices for declared retail electrical services on mainland Tasmania”, P. XXX., www.economicregulator.tas.gov.au

¹⁰ Accenture (2010) “Achieving high performance with Accenture’s CIS transformation”.

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Why? Because it is often only upon the system commencing live operation and issuing the first quarterly bills (some 240,000 residential invoices in Aurora's case), that many of the new system irregularities are identified. Cold comfort and an perhaps an unwitting prediction in Stedman's comment that, "*The situation is reminiscent of the Motor Registry farce in October 2008 when multiple licenses were sent to more than 3000 drivers due to a malfunctioning \$20 million software system.*"¹¹

Already one of our fastest growing commercial and industrial service categories is "Electricity Bill Reconciliation" and 2011 looks set to continue this trend.

Losses 4%

As electricity is transferred over distance, energy losses occur in the transfer of some of that electrical energy to heat. Offsetting these "line losses", is one reason why local natural gas proponents promote the potential for a gas fired generation plant located closer to Hobart. Probably one of the only glimmers of light is that, as the network system is upgraded, some reductions in overall line losses will occur. Unfortunately this benefit will be well and truly offset by the cost of these new assets. However, Losses are one of the fairly stable components in the overall cost of electricity.

Metering 3%

Smart meters are mandated for Tranche 4 and above (>\$30,000 per annum) contestable market customers. Unlike the old spinning disk meters which accumulate consumption over a quarter, these highly accurate meters record consumption (and other factors) every 15 minutes. Most smart meters are fitted with mobile phone communications links, so data can be uploaded every day to a central database, known as a Meter Data Agent. This hardware, communications links, software and data handling costs money. Despite metering being a competitive service, quotes we see in Tasmania for most commercial size users fall between \$900 and \$1,300 per meter per annum.

Renewable Energy Certificates (REC's) 2% of total cost.

The revised federally legislated target of 20% renewable energy by 2020 has seen a marked uptick in the volume of REC's that must be acquitted by electricity retailers each year. For example in 2009 retailers were required to acquit 3.64% of their total electricity sales in RECs. In 2010 this Renewable Power Percentage (RPP) is 5.98% and will increase each subsequent year, eventually to 20% in 2020.¹² With electricity sales in Tasmania of some 11,500GWh per annum and a volatile REC price, the 2010 cost of REC's acquitted on behalf of Tasmania users could easily exceed \$25M dollars. As the Mandatory Renewable Power Percentage increases, so to can the costs.

¹¹ Stedman, M. (29 March 2010), "*Aurora's \$50m cost blowout*", Mercury.

http://www.themercury.com.au/article/2010/03/29/136641_tasmania-news.html

¹² Office of the Renewable Energy Regulator (2010) "*Renewable Power Percentage*" www.orer.gov.au
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Cost of Carbon (The Future):

Finally, it would take me another page to detail these probable future costs, but let me simply say that the formulae is likely to include multiplying your consumption by the cost of carbon in a dollar value. So we customers should be abundantly clear that the only controllable element in the cost equation is likely to be our own electricity consumption!

Whilst experience has taught us that predicting future energy prices is fraught with disaster, taking account of the above information, a reasonable person would surely look to energy efficiency, if not to become an acknowledged energy miser, simply to reduce the obvious exposure.

Whilst we receive far more enquires regarding wind and solar power investments, the MMA 2009 “*Wedges Report*”¹³ commissioned by the Tasmanian Government showed “**Energy Efficiency**” as by far the most cost effective measure to reduce carbon emissions and we would certainly agree with this view.

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Disclosure: Goanna Energy Consulting Pty Ltd is both an Affiliate Member of, and performs services for, the Energy Users Association of Australia, for which it may receive fees and/or commissions.

Dated 4th October 2010

¹³ MMA (30 Nov 2009), “*Tasmanian Greenhouse Gas Emission Reduction Project - Understanding the Potential for Reducing Tasmania’s Greenhouse Gas Emissions*” Known as “The Wedges Report” www.earnyourstars.tas.gov.au/government_action/wedges_report