Goanna Energy Consulting Pty Ltd

Tasmanian Small Business Council
Uniting Small Business

Tasmanian Wholesale Electricity Market Study

Preliminary Report

13 September 2017

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ABN: 31 674 232 899

Acknowledgements & Disclaimer

This project was funded by Energy Consumers Australia (http://www.energyconsumersaustralia.com.au) as part of its grants process for consumer advocacy projects and research projects for the benefit of consumers of electricity and natural gas. The views expressed in this document do not necessarily reflect the views of the Energy Consumers Australia.

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Executive Summary

This study examines the role, purpose and performance of the Tasmanian wholesale electricity market and its relationship to and impacts on small business in Tasmania.

There are three important reasons for the study. First, the role of the Tasmanian wholesale market in a small business context has never been examined before. Secondly, wholesale electricity prices have been rising rapidly across the National Electricity Market (NEM), including in Tasmania, and are forecast to remain high.

Finally, the results of the study will allow our client, the Tasmanian Small Business Council (TSBC), to build their capacity on the Tasmanian wholesale electricity market and to advocate for its further development.

The NEM wholesale market

There are important relationships between the NEM and Tasmanian wholesale markets, including similar pricing outcomes that reflect electrical interconnection and associated trade.

The Australian wholesale electricity market comprises a physical market for electricity and an associated financial derivatives market. The physical market is an electricity spot market into which generators sell and retailers buy electricity to on-sell to consumers. The Australian Energy Market Operator (AEMO) dispatches generation so that supply and demand are met instantaneously.

The electricity spot market is extremely volatile due to a number of factors, including available capacity and demand, the need to continuously and instantaneously meet demand, unexpected generator outages and network constraints, and the weather. This volatility exposes wholesale market participants to considerable financial risks. To manage volatility, generators and retailers negotiate financial contracts (known as derivatives or hedges) that lock in a price for a specified volume of electricity bought in the future. This process is independent of the spot market, either as ASX energy market or over-the-counter trades. Prices for derivative contracts depend on: the contract period; generators' and retailers' risk appetite; and each party's view on likely spot market prices over the period of the contract.

Derivatives generally include a premium for risk over the expected spot market price. A NEM participant may therefore choose to retain some exposure to the spot market, depending on the party's risk appetite and its expectation of future market conditions.

Although there is competition between generators and retailers in the NEM, many parts of the NEM are highly concentrated (and becoming more so) through the vertical integration of generators and retailers into so-called 'gentailers' and due to thermal generation plant closures. This is confirmed by the Australian Energy Regulator's (AER) competition indices and its analysis of generator market behaviour. NEM retail markets are also concentrated with 'the big three' retailers – AGL, Energy Australia and Origin Energy – dominating.

Wholesale prices in all parts of the NEM increased significantly from 2016, following a sustained period of relatively benign prices. By May 2017, Victorian base futures prices had reached around $120/MWh having risen from a level of around $40/MWh a year earlier. This reflects factors such as the closure of a significant thermal generation capacity (coal and gas), a flood of new subsidised

renewable energy capacity, tight gas supply and rising gas prices, uncertainty over government energy and climate policies, and strategic bidding by some generators with market power.

The Tasmanian wholesale market

The Tasmanian wholesale electricity market is different to the rest of the NEM. It is a far more concentrated and regulated with competition all but absent. This structure is not just a product of the small size of the market but also reflects past policy choices.

Wholesale contract regulation was introduced in 2014 to assist new entrant retailers manage the risks of entering spot and contract markets dominated by Hydro Tasmania, to help counteract Hydro Tasmania's potential market power, and to facilitate the introduction of Full Retail Competition (FRC).

Tasmania's electricity generation is highly concentrated in the hands of Hydro Tasmania, a government owned business, which owns, or otherwise through Joint Ventures, controls, 96 per cent of capacity. Measures of generator market concentration show Tasmania to be by far-and-away the most concentrated region of the NEM, with Hydro Tasmania having a near monopoly. Moreover, Hydro Tasmania also exercises significant influence over the Basslink interconnector so that the competitive role that inter-regional trade plays elsewhere in the NEM is all but absent in Tasmania.

The Expert Panel on the Tasmanian Electricity Supply Industry (Expert Panel), which reported in 2012, undertook a thorough analysis of Hydro Tasmania's market power and found that: Hydro Tasmania controlled both the spot and derivatives markets in Tasmania; it could set prices at will in both markets; Hydro Tasmania's output is required to meet Tasmanian demand under virtually all market conditions, giving it a unique ability to 'give less and take more' if it so chooses; Hydro Tasmania has the ability to determine a new entrant's retail margin through its unilateral pricing decisions, thereby creating a squeeze between the cost of supply and regulated retail prices; growth in on-island supply from Hydro Tasmania controlled wind farms has added to oversupply of capacity; and its low historical costs and economies of scale mean that any new generation could suffer from a cost disadvantage.

The Expert Panel recognised that Hydro Tasmania did not always use its market power and described it as having *latent* market power, but found that the above conditions were sufficient to deter new entry into Tasmania, especially by the larger mainland retailers, who it recognised would be needed for retail competition to take hold in Tasmania.

Moving beyond the current regulatory approach to the Tasmanian wholesale market is critical to improving the opportunities for competition in Tasmania. The Expert Panel raised for consideration a range of structural reform options starting with the separation of the Tamar Valley Power Station (TVPS) from Hydro Tasmania, but found this to be insufficient to deal with Hydro Tasmania's market power, whilst being a worthwhile step to consider as part of deeper structural reforms. The Expert Panel's preferred 'gentrader' recommendation would see Hydro Tasmania's trading functions hived off into three government-owned trading entities, which it found would deal effectively with Hydro Tasmania's market power. However, some of the larger mainland retailers were reportedly not sufficiently attracted by this to consider entry. They were more attracted by the option of either selling the 'gentraders' to potential new entrants, or of selling Hydro Tasmania's joint physical and trading functions as three separate businesses. This option appears to be the most attractive one to

the larger mainland retailers (and potential new entrant generators) and is therefore more likely to stimulate retail competition and benefit small business.
Tasmanian retailers serving small business and residential customers can either enter into market based wholesale contracts (standard or tailored) or use Hydro Tasmania's regulated contracts. Tasmanian retailers can also buy electricity from the volatile NEM spot market. In actuality, retailers will adopt a mix of wholesale contracts and spot exposures to suit their market positions and risk limits.

The presence of a virtual single retail buyer and (more importantly) a single seller of generation products in the Tasmanian wholesale market is a major reason for the lack of competition in the State's retail electricity market. This is borne out by the views of potential new entrants, including large mainland retailers, who have consistently raised Hydro Tasmania's dominance of the wholesale market as a significant barrier to entry, e.g., in interviews with Goanna Energy and with the Expert Panel. The Expert Panel independently reached this conclusion based on its analysis of the Tasmanian market.

This has essentially deterred the larger inter-state retailers from entering Tasmania and placed FRC in a 'Clayton's choice' framework of minimal choice for small business. Consequently, small businesses have no real access to competitive pricing and miss out on the benefits of competition enjoyed by their peers elsewhere in the NEM, such as discounting.

The structural reform options favoured by the Expert Panel are, in our view, the minimum needed to stimulate retail entry so that small business gets access to a competitive retail market and competitive prices in the longer term. However, some mainland retailers are not enamoured with state ownership of 'gentraders' and would be unlikely to enter the Tasmanian market unless given the opportunity for direct access to Hydro Tasmania's capacity.

Tasmanian wholesale market regulation

The current regulated wholesale market framework has been in place for three years and retail competition, including for small businesses, has demonstrably failed to materialise in any significant way. As a result, small business is virtually excluded from retail choice and competitive prices, and the Tasmanian wholesale electricity market is the most regulated wholesale market in the NEM. This is achieved through the regulation of Hydro Tasmania's wholesale electricity contracts by the Tasmanian Economic Regulator (TER). Four forms of regulated contracts must be offered to retailers operating in Tasmania and these closely resemble derivative contracts commonly used in the NEM. This is to ensure consistency with wholesale contract practices elsewhere NEM to encourage new retailers to enter Tasmania so that the risks of operating in Tasmania are no greater than those in other parts of the NEM, and to limit Hydro Tasmanian's market power.

The failure of any new retailers to enter the Tasmanian market, apart from ERM Power Retail Pty Ltd Trading as "ERM Business Energy" (ERM), is undoubtedly due to the continued existence of structural impediments in the Tasmanian wholesale market, which the regulatory approach apparently cannot overcome. This outcome is almost exactly as predicted by the Expert Panel, including entry by (one or two) niche retailers, which it considered possible.

There are some positive aspects to wholesale market regulation in Tasmania, such as its stability, the familiarity of the regulated contracts used, the 'safe haven' they offer against Hydro Tasmania's market power and the oversight of an independent regulator, the TER. However, as regulation has failed to deliver its main objective of retail competition, it must be judged a failure. Even 'hit and run' niche entry has failed to materialise and there is no sign that any new entrants will emerge in

the foreseeable future. The principal conclusion is that structural reform of the wholesale market is needed to facilitate retail competition.

Basslink 2 and Hydro Tasmania 2.0

Two prospective projects that could impact on the Tasmanian wholesale market are a second Bass Strait interconnector (sometimes referred to as 'Basslink 2') and major expansion of Hydro Tasmania's system (so-called 'Hydro Tasmania 2.0').

'Basslink 2' has recently been assessed as materially net benefit positive under only two restrictive scenarios. If built as a regulated link, consumers would pay additional transmission charges in proportion to their use of the link, but could benefit if lower Victorian wholesale prices are reflected in Tasmania. If unregulated, consumer benefits would depend on the owner's bidding strategy, as well as on spot price differences between the regions, the volume of the flows between them and competitive conditions in wholesale and retail markets (noting the existing lack of competition in Tasmania).

'Hydro Tasmania 2.0' is currently being assessed by the Australian Renewable Energy Agency (ARENA). Whilst Tasmanian consumers could benefit, e.g., when exports to the NEM are not profitable, the additional electricity supply would be in the hands of Hydro Tasmania with its substantial market power. Moreover, Tasmania already has significant excess electricity "capacity" (as opposed to "energy"), which is already posing a barrier to new entry.

Pumped Hydro competes to buy low priced "off peak" energy alongside irrigators, supermarkets, aged care providers and dairies, whilst chasing the opportunity to arbitrage the value of this energy during "Peak" price times. In essence pumped hydro reduces Peak prices, at the expense of increasing Off Peak prices, with an inbuilt 20% inefficiency.

The Tasmanian wholesale market and energy security

Energy security is important to small businesses in Tasmania given their heavy reliance on electricity for their operations. The current wholesale market structure in Tasmania could pose some threat to energy security. The threat to energy security in the first half of 2016 highlighted possible deficiencies in present arrangements, including conflicts or tensions in Hydro Tasmania's energy security (water management) and commercial roles. There were suggestions that Hydro Tasmania had placed its desire to maximise revenue during the carbon price period above the need for prudent water management. Its approach to the TVPS, which can play an important role in energy security, was also called into question, especially its attempted sale of the main turbine and its unclear future intensions for the TVPS. We intend to examine energy security issues further in our Final Report.

Tasmanian wholesale prices

Wholesale prices are an important component of regulated retail standing offer prices. The TER determines the Wholesale Electricity Price (WEP) as a key input to determining the Wholesale Electricity Cost (WEC) in Aurora's annual regulated revenue. The WEP is set with reference to Hydro Tasmania's regulated LFS contract, which is then used along with a load forecast and (distribution and marginal) network loss factors to determine the WEC.

Wholesale costs make up around 37 per cent of the delivered cost of electricity to smaller Tasmanian consumers who are on regulated tariffs. This includes the vast majority of small

businesses. Recently, wholesale costs have increased significantly right across the NEM, including Tasmania. The reasons for this were discussed earlier. Wholesale prices (2017/18 Flat Swaps) in Tasmania increased significantly from around $40/MWh in mid 2016 to reach a high of around $125/MWh in April 2017. Whilst they have fallen somewhat since then, they remain historically high at around $85/MWh. Wholesale prices in Victoria are comparable, albeit somewhat higher. Prices for 2018/19 remain high at around $90/MWh.

Changes in wholesale electricity prices would normally be passed through into retail prices. In the past, benign wholesale pricing has benefitted Tasmanian small electricity consumers due to this relationship in the determination of regulated retail prices. However, the Tasmanian Government has recently legislated so that the WEP can be set by Ministerial Order rather than using the Victorian contract price. It did this due to an expected 15 per cent increase in regulated retail prices for small consumers due to large wholesale price increases in Victoria, with the aim of holding prices to the CPI and flagged its intent to continue to do so if future wholesale price increases warrant.

Notwithstanding the Ministerial Order, the WEP in this year's pricing approval has still increased by 35 per cent. Typical small business bills will fall by between 4.1 and 5.7 per cent, but due to significant reductions in network charges. If wholesale prices increase again next year, there may be no reduction in network charges to offset these.

Whilst small business should welcome the Tasmanian Government's decision that the full impact of the large increase in wholesale electricity prices has not been passed on to them for 2017/18, and acknowledging that the Government has placed a significant priority on keeping electricity prices affordable, there are broader implications from the Government's actions that should also be considered by the TSBC. These include: intervention in a soundly based method of determining wholesale prices in standing offers; a risk of prolonged, or uncertainty about, intervention if large increases in wholesale prices persist or return; detailed intervention in an independent regulatory process that is important to the risks of Tasmanian entry faced by potential new retailers; it might be perceived as a form of 'forum shopping' that increases the regulatory risks of retail entry; it represents intervention in the commercial decisions of Hydro Tasmania and Aurora; higher wholesale costs have been accepted in other jurisdictions, albeit with some signs of intervention in future; it may raise unintended arbitrage opportunities and it raises the already high sovereign and regulatory risks associated with a lack of retail competition in the Tasmanian electricity market.

Following stakeholder consultation on this Preliminary Report, our recommendations will be developed and delivered in the Final Report, due in October 2017.

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1 Introduction

1.1 Background to and purpose of study

This study examines the role, purpose and performance of the Tasmanian wholesale electricity market and its relationship to and impacts on the small business sector in Tasmania. It also considers the relationship of the Tasmanian wholesale electricity market to the retail electricity market in Tasmania and the National Electricity Market wholesale market.

There are three essential reasons for this study.

First, the role of the Tasmanian wholesale market in a small business context has never been examined before and the report will allow the Tasmanian Small Business Council (TSBC) and the broader small business sector in Tasmania to better understand how their electricity prices and supply are impacted by the wholesale market. In fact, wholesale costs are the second biggest component of small business electricity bills in Tasmania behind network (transportation) charges and make up close to 40 per cent of their bills.

Secondly, wholesale electricity prices have been rising rapidly over the past couple of years across the NEM, including Tasmania, and are forecast to remain high for the foreseeable future. As a result, their share of small business electricity bills has also increased. It is important for the small business sector in Tasmania to understand the reasons for this, how it has impacted their electricity bills (and might impact their bills going forward) and what steps could be taken to help alleviate the large increases in wholesale prices. As a supplementary point, the closure of the large baseload coal-fired Hazelwood Power Station in Victoria in March 2017, added impetus to the desire of the TSBC to increase its understanding of the impacts of this decision on electricity prices for Tasmanian small businesses.

Finally, the results of the study will allow the TSBC and Tasmanian small businesses to build their capacity in relation to the Tasmanian wholesale electricity market and to advocate on its further development to the Tasmanian Government, the Tasmanian Economic Regulator (TER) and bodies such as the Australian Competition and Consumer Commission (ACCC) and Australian Energy Regulator (AER).

1.2 Commissioning of Goanna Energy Consulting

The TSBC commissioned Goanna Energy Consulting Pty Ltd (Goanna Energy) to undertake the study. This was in recognition of our work and involvement in, and knowledge of the Tasmanian electricity sector, including the wholesale market, our work with Tasmanian small and medium sized businesses, our knowledge of the small business sector and our past work for the TSBC.

1.3 Tasmanian Wholesale Electricity Market and Small Business

As alluded to earlier, wholesale electricity costs make up close to 40 per cent of small business electricity bills.

Small business electricity prices in Tasmania increased significantly from 2008/09 until 2012/13 driven mainly by large increases in network charges, the introduction of a carbon tax and rising renewable energy subsidies. Wholesale electricity prices remained relatively flat through most of this period.

Thereafter, there was a short period of flat electricity prices as network charges peaked and began to decline, wholesale prices remained flat and the carbon tax was abolished. However, this was offset to some extent by rising renewable energy and retail charges.

From 2015/16, wholesale prices began to increase significantly although overall price increases for small business were somewhat offset by further reductions in network charges and relatively constant retail charges and renewable subsidies.

These trends underlie a growing concern amongst Tasmanian small businesses about their electricity prices and a concern that they will increase further in future with significant impacts on their operations and ability to invest in Tasmania and employ Tasmanians. Partly as a result of this, the TSBC has significantly increased its interest in and advocacy on energy issues.

1.4 Outline of Report

This report is structured as follows.

Chapter 2 examines the Tasmanian wholesale electricity market. It considers its relationship to the NEM wholesale market, the structure of the Tasmanian wholesale market, its regulation, impacts on small business and on energy security. There is also discussion of the need to reform the Tasmanian market and options for doing this.

Chapter 3 discusses NEM and Tasmanian wholesale electricity prices, the outlook for wholesale prices and the results of some modelling of future wholesale prices. It also examines how wholesale prices in Tasmania are regulated and their impacts on small business retail electricity prices. There is also discussion of the recent decision by the Tasmanian Government to cap retail electricity price increases for small business and residential consumers for 2017/18 at around 2 per cent in order to avoid otherwise large increases in wholesale prices.

Finally, Chapter 4 presents our findings and conclusions for our client, the TSBC

2 The Tasmanian Wholesale Electricity Market

This Chapter discusses the Tasmanian and NEM wholesale electricity markets, how the Tasmanian market relates to the NEM, how the Tasmanian wholesale market is regulated and the relationship between the Tasmanian wholesale market and energy security. It includes commentary on the impacts of the Tasmanian wholesale electricity market on the State's small business sector.

2.1 Description of the NEM Wholesale Market

Central to the generation of electricity in the NEM is a wholesale spot (real time) market into which generators above 30 MW capacity must sell their electricity (unless exempted). It covers New South Wales, Victoria, Queensland, South Australia, Tasmania and the ACT. Each State forms a separate region within the NEM. The Australian Energy Market Operator (AEMO) schedules the lowest cost generation to meet demand every five minutes in its five regions and despatches generation up to the highest bidder. Financial settlement takes place every 30 minutes. This is a 24/7 operation. The production of electricity, which cannot be easily or economically stored, must be matched with its demand in real time. Table 1 below provides a snapshot of the NEM.

Table 1: The NEM at a glance

Table 1.1 National Electricity Market at a glance

PARTICIPATING JURISDICTIONS	QLD, NSW, VIC, SA, TAS, ACT
NEM regions	Qld, NSW, Vic, SA, Tas
Installed capacity	47 148 MW
Number of registered generators	336
Number of customers	9.6 million
NEM turnover 2015–16	$11.7 billion
Total energy generated 2015–16	198 TWh
National maximum winter demand 2015–16	31 977 MW[a]
National maximum summer demand 2015–16	32 859 MW[b]

MW, megawatts; TWh, terawatt hours.

a The maximum historical winter demand of 34 422 MW occurred in 2008.

b The maximum historical summer demand of 35 551 MW occurred in 2009.

Source: Australian Energy Regulator, *State of the Energy Market, May 2017,* Table 1.1., p. 24.

The NEM operates at both physical and financial levels. Power flows physically from generation plants (supply) to load centres where it is consumed (demand). Buying and selling of this physical electricity takes place in the NEM spot market. As the spot market can be very volatile, sitting alongside it is a financial hedging market that allows buyers and sellers to manage this volatility.

Figure 1 below shows a map of the NEM. As can be seen, it covers eastern and south-eastern Australia, stretching from far north Queensland, south to southern Tasmania and west as far as Port Lincoln in South Australia. The NEM is based on one of the largest and longest lateral transmission networks in the world. Losses of electricity generated over such a long and skinny network can also be substantial, rising up to around 10 per cent.

Figure 1: Map of the National Electricity Market

Source: AEMO

Each State forms a separate region within the NEM. High voltage transmission interconnectors link all five NEM regions together and facilitate power flows and wholesale market trade between its regions. Trade enhances the reliability and security of the NEM by allowing each region to draw on generation plant from across the entire market. It also allows high cost generating regions to import electricity from lower cost regions. These were central considerations leading to the formation of the NEM in late 1998 along with a joint market enabling greater resource efficiency in the use of existing generation resources and investment in new ones.

Historically, Queensland and Victoria are the NEM's principal electricity exporters, while South Australia and NSW typically import electricity. Tasmania's trade position fluctuates, depending on market and weather conditions. Due to market changes, the energy flows have changed following significant power station closures, which is discussed further in Section 3.5.2.

Key aspects of how the NEM is structured and operated are shown in the Box 1 below.

Box 1: Key Aspects of the NEM

- AEMO manages the spot market and transmission system and is responsible for energy security ('keeping the lights on') in conjunction with jurisdictional agencies.
- To maintain system security AEMO operates and procures separate markets for ancillary services such as frequency control (to maintain a safe electrical frequency range), regulation services (to correct minor deviations in load or generation) and contingency services (to correct for major electricity supply or demand events).
- AEMO can instruct network service providers to temporarily cut electricity supply to some customers if protection of the power system is urgent.
- Most customers, including small business, buy electricity from a retailer and are not directly involved in the wholesale market, or directly exposed to its volatility, though their prices reflect the cost of retailers managing wholesale market volatility.
- A few large customers also buy some of their electricity from the wholesale market, reflecting their greater resources, sophistication and ability to manage its risks.
- Demand varies significantly by time of day (with morning and evening peaks), season (summer and winter peaks, with Tasmania having a winter peak) and ambient temperature (very high or very low). This can impact significantly on spot market prices and risks.
- Maximum demand in the NEM rose significantly up to 2009, then flat-lined or declined before beginning to rise again in 2015/16 and approached a new maximum in Tasmania. However, AEMO forecast NEM demand to remain flat over the next decade.
- The NEM contains a mix of generation technologies, but is dominated by coal (52 per cent of capacity and 76 per cent of power generated in 2015/16). There is also gas-fired plant (19 per cent of capacity and 7 per cent of power generated), hydro (17 per cent and 10 per cent), wind (7.5 per cent and 6.1 per cent) and roof-top solar (9 per cent and 3 per cent).
- The fastest growth in capacity is occurring in the renewable space (wind and solar), which accounts for 92 per cent of new capacity (mainly wind) installed over the past five years, driven heavily by Federal Renewable Energy Target (RET) and State feed-in-tariff subsidies.
- AEMO forecasts that rooftop solar will contribute 11 per cent of NEM energy requirements by 2035/36.

- Renewable energy subsidies are paid for by customers through higher retail electricity prices. They are not levied at the wholesale level but may impact wholesale prices as renewable energy is bid (low) into the spot market reflecting the subsidy. This has created a major distortion in the market as renewables first drove down wholesale prices but then helped to drive thermal plant (coal and gas) out of the market, contributing to wholesale price increases.
- Wind generation is traded in the market but rooftop solar in not traded and treated by AEMO as a reduction in demand.
- Rooftop solar is reducing grid based demand around midday and shifting peaks to later in the day.
- There have been no new baseload (coal or gas) investments in the NEM since 2013.
- The combined impacts of age, low demand growth, subsidised renewables and rising gas prices have seen significant spare capacity withdrawn from the market. Between 2011/12 and 2016/17 a total of 6,433MW of capacity was retired or mothballed, all of it coal or gas fired.[1, 2] This is significantly more than the 2,000 MW of renewable capacity added to the NEM.

Source: Goanna Energy Consulting

The permanent closure of the brown coal baseload Hazelwood power station in Victoria (1,600MW) in March 2017 has been a controversial decision, with potential to impact not just Victoria but also adjoining regions, including Tasmania. This station provided 20 per cent of electricity generated in Victoria. AEMO has projected that its retirement, without any market response, may lead to insufficient capacity to meet maximum demand in Victoria and South Australia by summer 2017/18. The Australian Energy Market Commission (AEMC) has also projected an impact on wholesale electricity prices with flow through to retail prices, with wholesale prices forecast to rise by $204 in Tasmania by 2018/19 due to this closure.[3]

To date, beyond the subsidy driven 'dash for renewables', there has been a muted market response to plant closures.[4] This reflects high and rising gas prices, threats to future gas supply for power generation, the continuation of the RET enacted in 2015 (albeit with a reduced target), uncertainty about carbon pricing and how Australia will meet its international commitment to reduce its emissions by 28 per cent by 2028 and (perhaps) a desire by the owners of existing generation to hold wholesale prices at higher levels following a sustained period of stagnant prices.

One consequence has been an unprecedented level of intervention in the market, including announcements for government investment in new gas generation capacity in South Australia, and government sponsored feasibility studies for upgrading hydro-electric capacity in the Snowy Mountains (by 2,000 MW) and Tasmania (2,500 MW of pumped storage).

[1] Early in 2017 it was announced that one of the two units at the Pelican Point gas-fired plant in South Australia was being brought out of mothballs (249 MW).
[2] A further 2,446 MW of capacity has been announced as permanently or temporarily closed between 2017 and 2022 (all coal or gas fired). This includes the 208 MW Tamar Valley Combined Cycle Gas Turbine (CCGT) in Tasmania, which has since been restored to service mostly on a stand-by basis.
[3] AEMC, *Residential Price Trends Report*, 2016.
[4] AGL announced on 7 June 2017 that it would build a 210MW reciprocating engine power station in South Australia, but this will replace two of the four units at the aged Torrens Island A Power Station.

2.1.1 How competitive is the NEM?

Competition between generators and retailers is a key building block for well-functioning electricity markets. As such, it is also important to the NEM. Competitive tension between wholesale market players is intended to deliver competitive prices to electricity consumers on a sustained basis. Box 2 below assesses the competitive dynamics of the NEM. It draws heavily on analysis by the AER in its 2017 *State of the Energy Market* Report.

Box 2: How Competitive is the NEM?

- Simple generation market shares show that the NEM is highly concentrated across its regions, with AGL holding a strong market position in South Australia, NSW and Victoria. Government owned generators hold a strong position in Queensland and dominate in Tasmania.
- The *Herfindahl–Hirschman index* (HHI) shows that all four mainland NEM regions are at or above the level of the index (1,800) often taken to signal the threshold between a competitive market and market power. In Tasmania's case, the index would be close to its monopoly level.[5]
- Moreover, recent trends in the HHI driven by factors such as mergers and acquisitions and the closure of large coal-fired generating units have pushed the index up in Queensland, South Australia and Victoria. The latter has an impact on Tasmania given its links to the Victorian market.
- The *Residual Supply Index* (RSI)[6] shows that the largest generator in each region became more pivotal in *every* region in 2015–16, due to a recovery in peak demand, plant closures, mergers and changes in plant availability.
- The AER also examines behavioural indicators to gauge not only market power in generation but also the incentives on generators to exploit their market power.[7] It found that generators sometimes reduce their output as prices increase above $100/MWh. The AER noted that "this behaviour may be explained by deliberate capacity withholding to tighten supply and thus influence prices."[8] Other possible explanations include the inability of some plant to respond quickly to sudden price movements, network congestion, and maintenance and outages.
- Vertical integration of generators and retailers is a trend that has attracted significant commentary, particularly noting that this reduces competition and wholesale contract price

[5] The *Herfindahl–Hirschman index* (HHI) accounts for the relative size of firms by tallying the sum of squared market shares for all firms in a market. The index can range from zero (in a market with many small firms) to 10 000 (that is, 100 squared) for a monopoly. The higher the HHI, the more concentrated and less competitive is a market.

[6] The *Residual Supply Index* (RSI) measures the extent to which one or more generators are 'pivotal' to clearing the market. A generator is pivotal if market demand exceeds the capacity of all other generators. In these circumstances, the generator *must* be dispatched (at least partly) to meet demand. The RSI–1 measures the ratio of demand that can be met by all but the largest generator in a region. An RSI–1 *below* 1 means the largest generator becomes pivotal to meeting demand.

[7] A generator's incentives will link to its exposure to spot or contract prices, and to its strategies to deter competition. Behavioural indicators explore the relationship between a generator's bidding behaviour and market outcomes.

[8] AER, State of the Energy Market, May 2017, p. 51.

discovery. In this regard, three retailers—AGL Energy, Origin Energy and Energy Australia—supply 70 per cent of retail electricity customers in the NEM. The same entities expanded their market share in NEM generation capacity from 15 per cent in 2009 to 48 per cent in 2017.

- Overall, these indicators suggest that several NEM regions show evidence of market power in generation and that market power has increased over time.

Source: Goanna Energy Consulting and AER, *State of the Energy Market*, May 2017.

2.1.2 Hedging and management of exposure to wholesale market risk

As alluded to earlier, wholesale market participants in the NEM (generators, retailers and a few of the largest customers) manage their exposure to the volatile spot market by hedging their positions. Several retailers have also acquired or built generation assets as a means of internally managing this risk through the direct access this provides to physical generation assets (they are referred to 'gentailers').

Wholesale market hedging involves either:

- Over-the-counter (OTC) trades whereby counterparties contract with each other; or
- Exchange traded products traded on the Australian Securities Exchange.

Box 3 below sets out key aspects of wholesale market hedging in the NEM.

Box 3: Key Aspects of NEM Hedging Products

- Futures such as swaps, or contracts for differences, lock in a fixed price to buy or sell and specified amount of electricity in a region for a nominated time of day at a pre-set date.
- These products include quarterly base contracts (covering all trading intervals) and peak contracts (covering specified times of peak demand) for settlement in the future.
- Futures are traded as calendar or financial year strips covering four quarters.
- Options give the holder the right—without obligation— to enter a contract at an agreed price, volume and term in the future. The buyer pays a premium for this added flexibility.
- Caps set an upper limit on the price that the holder will pay for electricity in the future and floors set a lower price limit. Both are traded as both futures and options.
- Over-the-counter (OTC) trades are confidential between parties and have little transparency
- Exchange traded products are publicly reported and available.
- ASX exchange traded products are standardised.
- OTC products are sculpted to suit counterparties.
- In 2015/16, contracts covering 396 TWh of electricity were traded on the ASX, equivalent to twice NEM demand.
- Victoria accounted for 36 per cent of ASX traded volumes in 2015–16, followed by Queensland (33 per cent) and NSW (30 per cent). Liquidity in South Australia was low, accounting for only 1 per cent of overall volume.
- The most heavily traded ASX products in 2015–16 were baseload quarterly futures (55 per cent of traded volume), followed by options (25 per cent) and cap futures (13 per cent).
- Liquidity is mostly in products traded 12–24 months out.

Source: Goanna Energy Consulting

2.2 Structure of the Tasmanian Wholesale Electricity Market

The Tasmanian wholesale electricity market is different to the rest of the NEM. It is a far more concentrated and regulated market with competition all but absent. This structure is not just a product of the small size of the market but also reflects past policy choices.

In Tasmania, in addition to the derivatives contracts negotiated by NEM participants, authorised retailers operating in the small customer market (currently only Aurora Energy and ERM Business Energy) have access to a set of regulated derivatives contracts provided for in the *Electricity Supply Industry Act 1995* (ESI Act) and approved by the Tasmanian Economic Regulator (TER). Hydro Tasmania is required to offer prices for these regulated derivative products. It should be noted that market participants (that is, generators and retailers) are also free to negotiate their own market derivative contracts.

Wholesale contract regulation dates from 1 January 2014, forming part of the former Tasmanian Government's electricity reform package. It was intended to:

- Assist retailers in mitigating against the contracting risks associated with Hydro Tasmania's dominance in the Tasmanian wholesale market;
- Reduce the risk faced by Tasmanian market participants to a level comparable with that facing retailers in other regions of the NEM; and
- Facilitate the introduction of full retail competition (FRC) on mainland Tasmania.

The TER approves the types of regulated derivatives contracts offered, the prices at which the contracts are offered and monitors the sale of these contracts.

These arrangements are part of the Tasmanian wholesale regulatory framework.

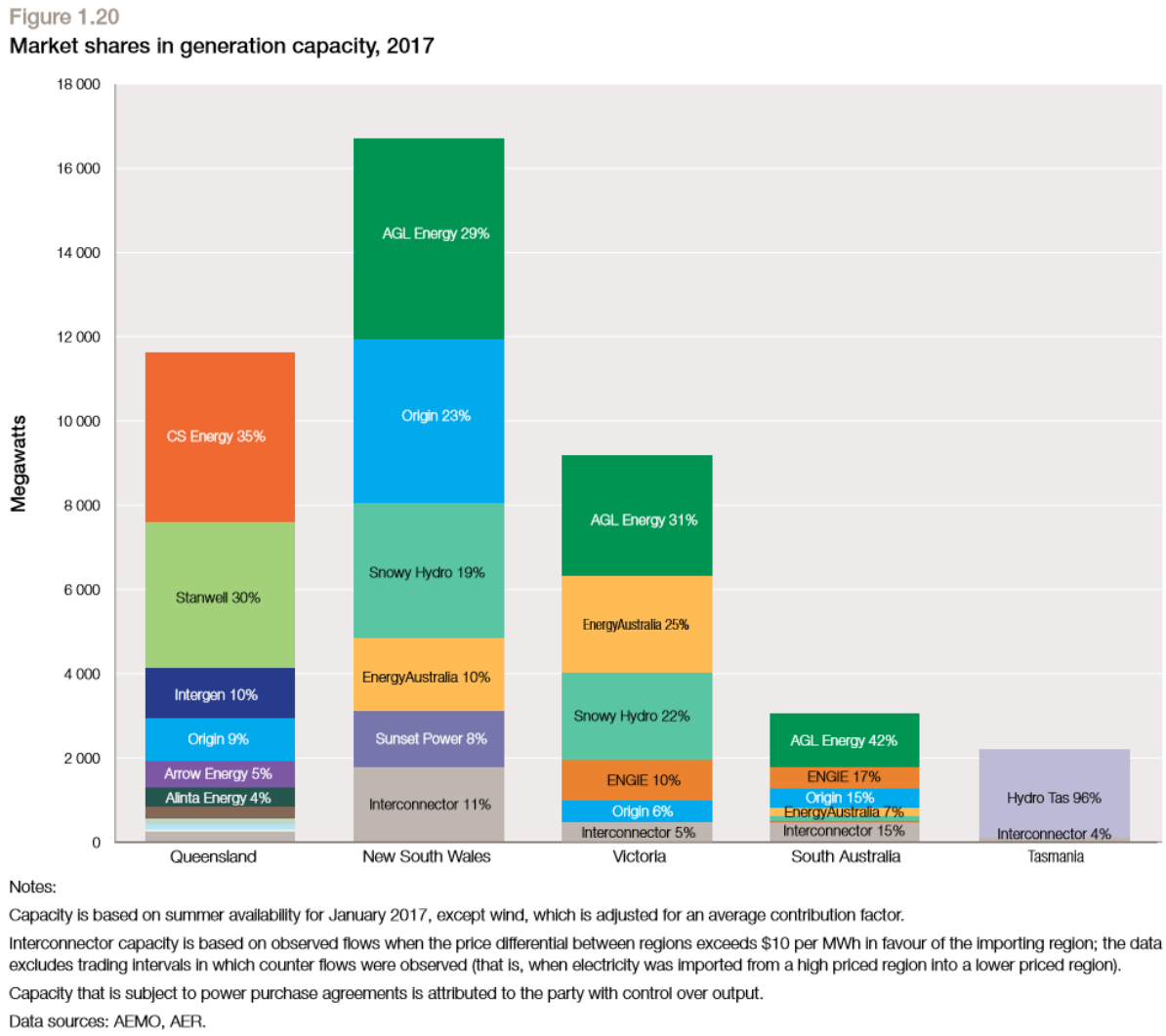
2.2.1 Tasmanian electricity generation

As the provider of capacity, generation plays a critical role in the performance of wholesale electricity markets. The need to consume electricity and difficulties in storing it increases the potential market power of generators.

Electricity generation in Tasmania is highly concentrated in the hands of Hydro Tasmania, a government owned electricity generation business, which owns or through JV's otherwise influences, 96 per cent of capacity (see Figure 2 below). This makes Tasmania by far and away the most concentrated generation sector in the NEM. Hydro Tasmania owns all of the hydro-electric capacity in Tasmania and either fully or jointly owns all of the wind capacity. Hydro Tasmania also has an agreement with Basslink covering its significant use of this facility. This limits the competitive influence that interconnectors provide in other parts of the NEM. It also limits the extent to which retailers can hedge their positions with parties other than Hydro Tasmania and therefore makes new entry less appealing to retailers.[9]

[9] The only on-island capacity not owned by Hydro Tasmania is 106 MW of unscheduled capacity (e.g., cogeneration plant, land fill generation, etc), which accounts for only 3.9 per cent of on-island generation capacity. As this plant is unscheduled, it does not participate in, or influence in any meaningful way, the Tasmanian wholesale electricity market.

Figure 2: Market shares in NEM generation capacity by region, 2017



Source: AER, *State of the Energy Market*, May 2017, Figure 1.20, p. 44

In terms of the competition metrics used by the AER, Hydro Tasmania's dominance is clearly evident. The *Herfindahl–Hirschman Index* (HHI) is around 9,200, which makes Tasmanian generation close to a monopoly (HHI = 10,000). The next most concentrated NEM region is South Australia with a HHI of 2,500, which is considered to possess substantial generator market power. Moreover, the HHI for Tasmania assumes that Basslink provides competition for Hydro Tasmania and does not take into account that Hydro Tasmania's agreement with Basslink restricts trade and access to inter-regional hedges in the wholesale market to Hydro Tasmania.

Other competition metrics used by the AER include the Residual Supply Index (RSI) and behavioural indicators[10]. The AER did not assess these indictors for Tasmania in its most recent *State of the*

[10] A generator's *ability* to exercise market power is distinct from its *incentives* to exploit that power. A generator's incentives will link to its exposure to spot or contract prices, and to its strategies to deter competition. This behaviour may be explained by deliberate capacity withholding to tighten supply and thus influence prices, but could also relate to the inability of some generation plant to respond quickly to sudden price movements, network congestion or even maintenance and outages.

Energy Market report. *Prima facie*, it appears that both the RSI and behavioural indicators would confirm the extreme market power of Hydro Tasmania in the State's wholesale electricity market.

The ownership structure of the Hydro Electric Corporation is shown below in Figure 3 Ownership Structure of the Hydro Electric Corporation.

Figure 3 Ownership Structure of the Hydro Electric Corporation

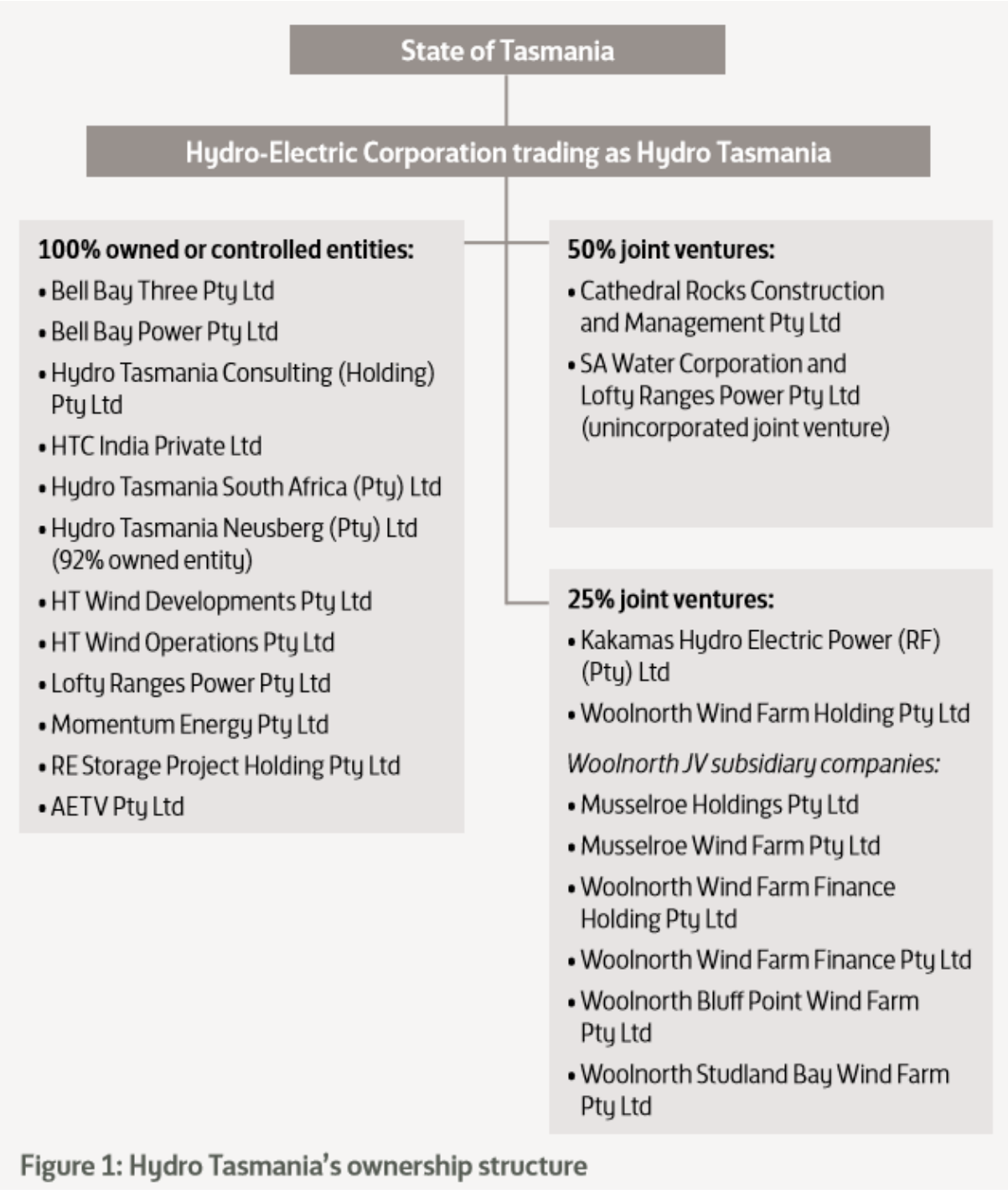


Figure 1: Hydro Tasmania's ownership structure

Source: Hydro Tasmanian Annual Report 2016 p. 7

The Expert Panel on the Tasmanian Electricity Supply Industry (Expert Panel) undertook a detailed examination of Hydro Tasmania's market power and its main findings are in Box 4 below.

Box 4: Expert Panel's findings on Hydro Tasmania's market power

- Hydro Tasmania's output is 'pivotal' in the spot market and it can control the spot price if it so chooses.
- As Hydro Tasmania is the only provider of hedge contracts, retailers are put in a position where they must choose between entering into hedge contract arrangements with Hydro Tasmania or be left exposed to a spot market price that Hydro Tasmania controls.
- Hydro Tasmania's discretion over its level of contracting combined with its dominant spot market position mean that has is a unique level of *market power* in the NEM.
- Hydro Tasmania can increase spot and contract prices on a sustained basis. This is because, notwithstanding the contribution of Basslink and the TVPS, Hydro Tasmania's output is required to meet Tasmanian demand under virtually all market conditions, giving it a unique ability to 'give less and take more' if it chooses to.
- Hydro Tasmania has an ability to profitably raise the spot price under a wide range of conditions and, in the past, has been particularly willing to exercise this ability at times when its contract position is relatively low and Aurora Energy is under-hedged.
- Moreover, given the absence of alternative counter-parties, the terms and conditions under which contracts are offered are also largely a matter of internal pricing policy, rather than being shaped by outside forces. Occasional demonstrations of Hydro Tasmania's capacity to bid spot prices to high levels in off-peak periods and the knowledge that it is a pivotal generator most of the time, serves as a signal to market participants that unhedged entry into the Tasmanian region involves risks over and above those elsewhere in the NEM. This is particularly so given the means of managing these risks, contracts, can only be sourced from the entity that creates them in the first place.
- Hydro Tasmania can determine a new entrant's retail margin through its unilateral pricing decisions, thus creating a squeeze between the cost of supply and regulated retail prices.
- Hydro Tasmania has generally not exercised its wholesale market power to the extent that it could.
- For the above reasons, the Panel described Hydro Tasmania as possessing a high degree of *latent market power* and found that its periodic signalling of that power through spot and contract market outcomes is a serious barrier to retail entry by efficient, large scale, mainland retailers.
- While the Expert Panel found that the threat of intervention may have been reasonably effective in deterring widespread exercises of market power to date, the effect and future dependability of such restraints is not predictable enough to give potential new entrants and their financier's confidence to invest in the Tasmanian market.
- Growth in on-island supply from Hydro Tasmania owned wind farms is adding to oversupply (though driven by Hydro Tasmania's commercial strategy to source renewable energy certificates required by its mainland retail business).
- Hydro Tasmania's efficiencies associated with low historical costs and economies of scale are desirable but have the effect of deterring new entry.

- Hydro Tasmania has an absolute cost advantage over any new entrant because any entrant would need to secure supplies of fuel, most likely for a gas-fired power station. Hence, Hydro Tasmania could, if it wished, sustainably set prices in excess of its own costs but below any new entrant's costs. This is likely to deter entry.

Source: Expert Panel, *An Independent Review of the Tasmanian Electricity Supply Industry*, Final Report.

The above confirms the almost complete absence of competition in Tasmanian electricity generation, which translates into the wholesale electricity market. Having dismissed structural reform options, this is the main reason why the Tasmanian Government introduced the regulation of Hydro Tasmania's wholesale contracts mentioned earlier.

2.2.2 More competitive generation options

For this situation to change there would need to be significant reform of the Tasmanian generation sector.

As a minimalist option, some competition could be introduced if there were separate ownership of the gas fired Tamar Valley Power Station (TVPS), which has a combined capacity of 356 MW, 13 per cent of total Tasmania capacity.[11] Such a move would reduce the HHI to 6,850, still the most concentrated generation sector in the NEM standards but would still represent only a small step in a more competitive direction. As the TVPS also plays an important role in helping to ensure energy security in Tasmania, as recently confirmed by the Tasmanian Energy Security Task Force (TEST), it would be important to ensure it continued to do this or put in place alternative energy security measures.

If Hydro Tasmania's wind generation interests were sold in additional to the TVPS, it would provide some additional competitive stimulus with the HHI falling to around 5,000, but still double the HHI in South Australia, a State with acknowledged market power issues. Moreover, the Expert Panel's finding that Hydro Tasmania is pivotal to supply under virtually all market conditions, even allowing for the output of the TVPS, Basslink and wind turbines, means this option is unlikely to deal with market power issues sufficiently to encourage new entry.

The Expert Panel recommended that the TVPS be sold as part of its broader suite of structural reforms (see Box 4) to help improve the attraction of Tasmania to new electricity retailers. As an alternative option, the Expert Panel proposed its allocation to one of the three separate trading entities it recommended, or as a last resort, its transfer to Hydro Tasmania, but only on the basis that its capacity would be allocated across these separate trading entities. In the event, the then Tasmanian Government transferred the TVPS to Hydro Tasmania but failed to establish separate trading entities.

[11] It is worth noting that the TVPS was initially build as a privately owned generator, but prior to its completion it was sold to Aurora Energy, who operated it frequently as a hedge against the dominance of Hydro Tasmania in the contract market. Since acquiring the facility, Hydro Tasmania has made sparse use of it, with the TVPS spending a long period in mothballs and its combined cycle gas turbine (CCGT) base load generator being offered for sale at one point. Since then, the CCGT has been withdrawn from sale and returned to service following the threat to Tasmanian energy security in the first half of 2016 and it is currently used as a standby generator, although Hydro Tasmania has recently begun operating it more frequently so that it can store more water in anticipation of higher spot prices over the coming summer.

A more competitive approach would be to adopt the Expert Panel's recommendation to separate Hydro Tasmania's wholesale trading functions into three stand alone entities (termed 'gentraders'), who would trade its capacity into the market. The Expert Panel saw this as being attractive to mainland retailers in terms of making their entry to the Tasmanian electricity market more likely.

Moving further along the competitive spectrum, there is the option of not only the separation but also the sale of Hydro Tasmania's trading functions, or even the separation of Hydro Tasmania's capacity and trading functions into (say) three generation entities prior to their sale. However, this course was not assessed by the Expert Panel, although it appears to have been favoured by mainland retailers and would stimulate their interest in entering the Tasmanian electricity market given that it would remove Hydro Tasmania's dominance and allow new entrant retailers to effectively hedge their Tasmanian positions.

Assuming for illustrative purposes, separation was into three generation entities of about equal size, the HHI would fall to around 700, making Tasmania the most competitive generation market in the NEM. For electricity consumers, including small businesses, this offers improved prospects of wholesale and retail market competition with access to competitive pricing behaviour becoming a reality in Tasmania.

2.2.3 Tasmanian Electricity Retailers

Retailers in Tasmania serving small business and residential customers have the option of either entering into market based wholesale contracts or using Hydro Tasmania's regulated contracts. Tasmanian retailers can also buy electricity from the NEM spot market and pay the prevailing Tasmanian spot price. Retailers will adopt contracting strategies using a mix of wholesale contracts and spot exposure depending on factors such as prices, supply-demand conditions, seasonal and weather patterns, their hedging position/risk appetite, and their view of future prices and demand.

In the residential customer market, Aurora Energy, a State Government owned retailer, enjoys a monopoly. In the small business segment, it enjoys a virtual monopoly. This has implications for Aurora's position in and strategies for the wholesale market. For example, Hydro Tasmania has very little choice other than to sell its power to Aurora and in some cases ERM, in the small customer segment and this is underpinned by a requirement for it to provide this electricity via its regulated retail contracts (if necessary).

As with other electricity markets, generators will often hold the whip hand as far as wholesale market contract outcomes are concerned, particularly as supply gets tighter. Retailers tend to be price takers, even ones like Aurora with a virtual monopoly over the entire small customer load.

2.2.4 Wholesale market barriers a major reason for lack of retail competition

The presence of a virtual single retail buyer and (more importantly) a single seller of generation products in the Tasmanian wholesale market is a major reason for the lack of competition in the State's retail electricity market. Consequently, small businesses are unable to exercise choice of retailer (despite the Government's adoption of FRC), have no real access to competitive pricing and miss out on the fruits of competition enjoyed by their peers elsewhere in the NEM, such as price discounting.

The barrier to retail competition created by the Tasmanian wholesale market was confirmed in a study for the TSBC by Goanna Energy Consulting entitled, *The Final Step: Moving to full retail*

contestability in the Tasmanian electricity market.[12] As part of this study, Goanna interviewed six retailers with potential to enter the Tasmanian market. Limited liquidity and competition in the wholesale market were the primary factors in reducing their interest in and appetite for entering the Tasmanian market, including supplying the small business sector.

Conversely, significant wholesale market reform and the breakup and sale of Hydro Tasmania were mentioned as important factors in increasing their interest in Tasmania.

The lack of wholesale market reform as a significant impediment to retail competition in Tasmania is also apparent from the deliberations and final report of the Expert Panel[13], which concluded that:

> *"Simply put, the Panel considers that a failure to address the current wholesale energy market structure would effectively 'lock in' an absence of effective competition and customer choice indefinitely, denying Tasmanian small businesses and households the clear benefits of competition and choice that have been delivered to consumers elsewhere in Australia.*
>
> *Structural reform is necessary – and it is achievable."*[14]

The Expert Panel recommended a range of reforms aimed at increasing interest by mainland retailers, especially the larger ones, in the Tasmanian market (see Box 5 below).

Box 5: Expert Panel Recommended Reforms to Improve Wholesale and Retail Market Competition

The Expert Panel on the Tasmanian Electricity Supply Industry recommended the following reforms as necessary to increase wholesale and retail electricity market competition and improve the attractiveness of the Tasmanian market to the larger mainland retailers:

- Separating the financial trading functions of Hydro Tasmania from its physical operations and transferring these functions to three independent government-owned entities ('gentraders').
- The declaration of full-retail contestability, accompanied by the sale of Aurora Energy's retail customer book in three similar-sized parcels.
- Alternative options for the TVPS, preferably its sale to a private operator.

Source: Expert Panel, *An Independent Review of the Tasmanian Electricity Supply Industry*, Final Report.

In the event, the then Tasmanian Government did not follow through with most of these recommendations. It opted instead to:

- Maintain Hydro Tasmania's trading and physical operations as a single entity but introduce regulation of its wholesale contracts. The Expert Panel had considered this option but more-or-less rejected it as a basis for wholesale market reform adequate to stimulate interest in Tasmania from larger mainland retailers.

[12] Copies of "The Final Step" Report are available by contacting Goanna Energy Consulting.
[13] The TER also found that there was a need for wholesale market reform in a review of FRC in 2008.
[14] Expert Panel, Final Report, vol 1, p. vii

- Introduce FRC from 1 July 2014. Whilst it attempted to sell Aurora's retail customer book as two separate parcels, it withdrew them from sale due to a lack of interest.
- Transfer ownership the TVPS from Aurora to Hydro Tasmania, an option that the Expert Panel had considered beneficial but only as part of the creation of gentraders.

This has essentially left the Tasmanian wholesale and retail electricity markets devoid of any interest from larger inter-state retailers concerned and placed FRC in a strictly 'Clayton's choice' framework of no choice at all for smaller customers, including small business.

In the intervening years, apart from the pre-existing presence of ERM, no new retailers or generators have entered the Tasmanian electricity market, unfortunately making a reality of the Expert Panel's predictions – supported by the views of larger retailers – that wholesale market reform is essential for retail competition and that regulation of Hydro Tasmania's wholesale contracts would not be sufficient to stimulate new entry by the larger retailers.

It is also worth noting that the existing wholesale market framework has proved so unattractive to new retailers that only ERM (and one smaller niche retailer has entered and disappeared from) the Tasmanian market, which the Expert Panel had contemplated might occur on a 'hit-and-run', or opportunistic, basis without its recommended wholesale market reforms.

The current Government has maintained the framework adopted by its predecessor and is yet to consider the need for more meaningful wholesale or retail market reform.

2.2.5 A need for more competitive options

We concur with the views of the Expert Panel that if Tasmanian small businesses are to benefit from real retail choice and competition, then meaningful reform of the wholesale market will be needed. It would also seem that proposals similar to the recommendations of the Expert Panel (see Box 5 above) are the minimum needed to stimulate retail entry.

We note that a number of mainland retailers expressed the view to the Expert Panel that they would find it more attractive to their entry to the Tasmanian market if the creation of gentraders as privately-owned businesses, which they could bid for, as this would give them greater control over their exposure to risks in the Tasmanian market. Some said that the creation of three government owned gentraders was not sufficient to allay their concerns about entry to the Tasmanian market as they would have insufficient control over their destiny and would not be convinced that separate government owned gentraders would compete fairly and head-to-head.

Moreover, the sale of Aurora's retail book would not stimulate mainland retailer interest in Tasmania (as shown by the previous aborted attempt) unless it was accompanied by the sale of Hydro Tasmania's trading functions and/or its generation assets.

Deeper structural reform would also increase the currently low level of liquidity in the market and (from a consumers' perspective) would improve competition in both the generation and retail markets, and help provide smaller consumers with a meaningful choice.

2.2.6 Regulation of Hydro Tasmania's wholesale electricity contracts

The current regulated wholesale market framework has been in place for three years and retail competition, including for small businesses, has demonstrably failed to materialise. As a result small business is excluded from retail choice and competitive prices. We note that the current approach to setting wholesale costs in regulated retail prices is to be reviewed by the Government (see Section 3.9). In our view, it would be beneficial to small business consumers if this review were broad ranging and included the threshold matter of regulating wholesale contracts and retail prices, especially given the recent large increases in wholesale prices in Tasmania and the rest of the NEM, and given the continuing pressures that wholesale electricity prices are under.

Box 6 below summarises the regulation of Hydro Tasmania's wholesale contracts.

Box 6: Key aspects of the regulation of Hydro Tasmania's wholesale electricity contracts

- The TER regulates the electricity contracts that Hydro Tasmania must offer for sale to other electricity market participants. Hydro Tasmania can (and does) also offer unregulated contracts.
- Regulation includes the setting of maximum prices that Hydro Tasmania can charge.
- Hydro Tasmania is required to: offer retailers operating in Tasmania a number of contract products that are broadly consistent with standard products offered in the NEM; offer standard terms and conditions for each; offer these contract products at prices that are based on an approved pricing methodology; and make available sufficient volume of regulated contract products to enable Tasmanian retailers to adequately manage the wholesale spot price risk associated with their Tasmanian customers.
- The TER is responsible for regulating Hydro Tasmania's wholesale contracting activity and approves the types of regulated contracts offered, the prices at which the contracts are offered and monitors their sale.
- The TER is also responsible for: administering and monitoring the pricing of regulated wholesale derivative contracts; investigating and determining future wholesale contract pricing instruments; and collecting information from Hydro Tasmania to support the regulatory framework and development of FRC.
- A *Statement of Regulatory Intent* outlines how the TER will deal with: Hydro Tasmania failing to correctly apply the approved pricing methodology, or a supply disruption event, which can include investigating and substituting its own pricing methodology; and updating the input values in the Wholesale Pricing Model.

Source: Goanna Energy Consulting and TER, various documents.

There are four types of regulated wholesale contracts offered by Hydro Tasmania. These are described in Box 7 below and they have remained unchanged since the application of regulation to Hydro Tasmania's wholesale contracts in 2014.

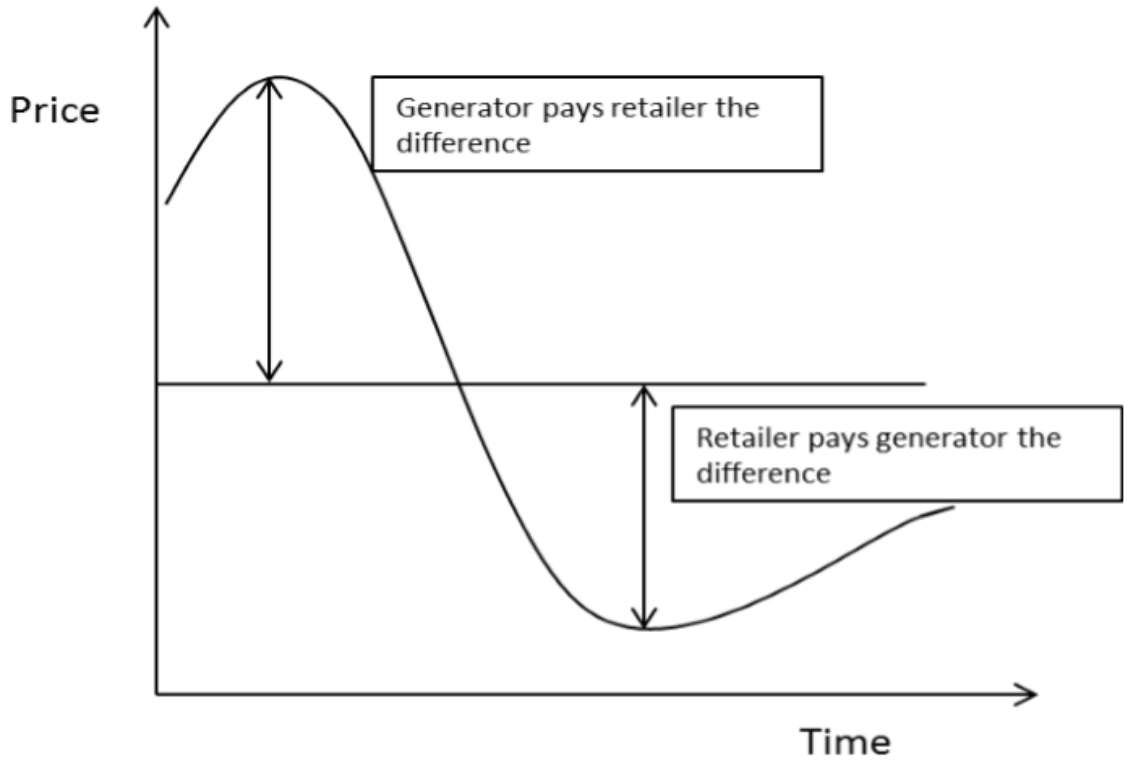
Box 7: Types of regulated wholesale contracts offered by Hydro Tasmania

Baseload Swap Contract & Peak Period Swap Contract

Swap contracts (also known as 'contracts for differences') fix the cost of electricity for a purchaser (e.g., a retailer) and a seller (e.g., a generator) for a defined volume of energy. If the spot price is greater than the agreed regulated weekly offer contract price, the seller (Generator) pays the difference between the spot and regulated weekly offer contract price to the purchaser for a defined volume of energy. If the spot price is less than the agreed regulated weekly offer contract price, the purchaser (retailer) pays the difference between the two prices for the defined volume of energy to the seller.

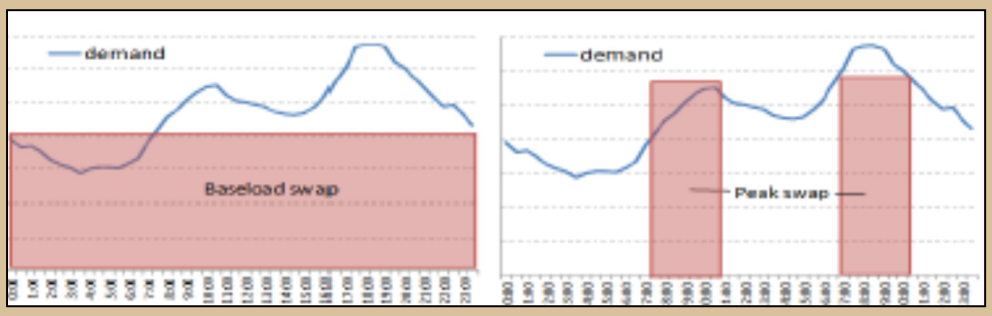
Box C.1 **A basic hedging contract**

It is not possible for parties to trade in electricity directly, because in the National Electricity Market (NEM), all electricity must be bought and sold through the central pool. However, it is possible for generators and retailers to agree to a contract that effectively delivers the same outcome. That is, if the spot price is 'high', the generator agrees to pay the retailer; and if the spot price is 'low', the retailer agrees to pay the generator.



Source: http://www.pc.gov.au/inquiries/completed/electricity/report/28-electricity-appendixc.pdf p. 834

A Baseload Swap Contract covers a set volume of electricity for every half hour of each 24 hour period, seven days a week for a calendar Quarter. A Peak Period Swap Contract covers a set volume of electricity for every half hour between 7am and 10pm Monday to Friday for a calendar Quarter. These are shown in the Figure below.



Baseload $300 Cap Contract

This cap contract (also known as an options contract) specifies two prices:

- An agreed strike price: the spot price at which the cap applies, i.e., $300/MWh; and
- An option fee: the premium or price payable to the seller for the contract itself.

The cap contract only comes into effect if the spot price, for a specified volume of electricity, reaches or exceeds $300/MWh. If the spot price exceeds $300/MWh, the seller of the cap (the generator) must pay the buyer of the cap (the retailer) the difference between $300/MWh and the spot price for a specified volume of electricity. Cap contracts help protect a retailer from high spot prices.

Load Following Swap Contract

Load Following Swap (LFS) Contracts are generally structured to meet an individual retailer's load profile and tend to be more expensive, but allow the purchaser to manage 'volume risk' (the risk that the retailer's customers' demand is higher than the retailer expected, requiring the retailer to pay spot prices for the additional electricity required to meet that demand) as well as 'price risk' (the risk that the spot price is higher than the retailer expected).

In Tasmania, the regulated Load Following Swap Contract is a contract that is based on the Tasmanian Net System Load Profile (NSLP) as determined AEMO. The NSLP is an approximation of Tasmanian load after subtracting the load from all customers with half hour meters (i.e., customers on market contracts, typically larger ones). It therefore represents the load profile for all small (regulated tariff) customers in Tasmania. Retailers may still be exposed to volume risk if their customers' actual usage is greater than that allowed for in the regulated LFS Contract.

The LFS Contract was included as a regulated contract to counter the perception that Hydro Tasmania had both the incentive and means to spike spot prices, thereby exposing retailers to potentially significant price risk.

Source: TER, *Review of the Wholesale Contract Regulatory Instrument*, Final Report, December 2016, p. 8.

Given the volatility of wholesale prices, the then Government decided it was not feasible to regulate wholesale electricity prices directly and opted instead to regulate Hydro Tasmania's wholesale contracts.

The types of regulated contracts Hydro Tasmania is required to offer to counterparties (see Box 7 above) are consistent with the use of equivalent contract products by retailers across the NEM. The then Government considered it important to ensure consistency with current wholesale contract practices elsewhere NEM as it was attempting to encourage new retailers to enter Tasmania by ensuring that the risks to retailers of operating in Tasmania were no greater than those in other jurisdictions in the NEM. It was also mindful that Hydro Tasmania's dominant position as a generator and wholesale market participant in Tasmania was seen as a barrier to entry by mainland retailers and it attempted to counteract this by giving potential new entrants access to a 'safety net' of regulated wholesale contracts which they could fall back on if necessary.

However, as outlined in Section 2.2.7, the availability of regulated wholesale contracts has failed to encourage any new retailers to enter the Tasmanian market. This is most likely due to the continued existence of structural impediments in the Tasmanian wholesale market as manifested by Hydro Tasmania's absolute dominance, Aurora Energy's dominance of smaller load customers, the continued regulation of retail prices for smaller customers and the fact that both Hydro Tasmania and Aurora remain in Government ownership.

The combined impact of these factors creates 'a bridge too far' for mainland retailers to enter the Tasmanian market. The failure to deal with the structural flaws in the Tasmanian wholesale market is the main contributor and provides the single largest barrier to entry.

Unfortunately, the strategy of regulating Hydro Tasmania's wholesale contracts has largely failed to deliver new entry and retail competition. Mainland retailers believe that there is too much residual risk in the Tasmanian market for them to contemplate successful entry.

The Expert Panel considered the option of wholesale market regulation through an auction of derivative hedges by Hydro Tasmania as part of its deliberations. This has similarities to the approach to wholesale market regulation currently applied. However, the Expert Panel did not recommend the regulatory approach.

Larger national retailers indicated to the Expert Panel that:

> *"They are not prepared to make the material level of capital investment required to enter the market with the level of sovereign and regulatory risk they would be exposed to from potential gaming of, changes to, or reversal of the regulatory arrangements."*[15]

The Expert Panel considered that, under the regulatory approach, some retail competition in the form of 'hit and run' entry by niche retailers could emerge, but that the sale of Aurora's retail customer book would be futile as there would simply not be enough incentive to make the sale attractive to potential bidders. In the event, there has been almost no new entry, even on 'hit and run' terms, under the current regulatory approach and the former Government, after attempting to sell Aurora's retail book on the basis of wholesale market regulation, had to abandon the sale due to

[15] Expert Panel, *An Independent Review of the Tasmanian Electricity Supply Industry*, Final Report, vol. 1, p. 133.

a lack of interest. The Expert Panel's expected outcome from wholesale market regulation appears almost prophetic.

2.2.7 Assessment of Tasmanian wholesale market regulation

The positive aspects of wholesale market regulation in Tasmania include that:

- It requires Hydro Tasmania to offer to any authorised and complying market participant a limited number of types of wholesale market derivative contracts that closely resemble contracts commonly used in the NEM. This provides for a degree of wholesale contract predictability, standardisation and familiarity to any retailer seeking to enter the Tasmanian market.
- It provides some discipline on Hydro Tasmania regarding the exercise of its unbridled market power in generation and contracting, and a form of safe haven for counterparties should they be exposed to Hydro Tasmania's market power.
- The current arrangements have been in place for three years and over this period they have remained more-or-less unchanged and (based on a recent review by the TER) would stay that way until 2024. It is possible that this may have dissipated somewhat the sovereign or regulatory risk issues for potential new entrants, although not sufficient for any actual new entry.
- The TER has independent oversight of the arrangements, which may also impact regulatory uncertainty and risk, although again not sufficient for any actual new entry.

Based on TER analysis[16], by and large, price outcomes for Hydro Tasmania's regulated products also seem to be as anticipated, with prices for both baseload and peak period swaps tracking Victorian prices, albeit at a significant premium. However, baseload $300 caps were at a very high premium to Victorian contracts (as were unregulated contracts).

The TER also reported that there was a significantly greater use of unregulated contracts, with little use of cap and LFS contracts across both regulated and unregulated products.

The TER concluded that:

> *"In summary, it appears that the pricing and trading outcomes of wholesale regulation are currently meeting the objectives of the Instrument, in that:*
>
> - *prices are largely reflective of the pricing patterns experienced in an established derivatives market (the Victorian market) associated with the NEM and;*
> - *regulated contracts are not being relied upon by market participants."*[17]

However, as the arrangements have largely failed in their key objective of encouraging new entry into the Tasmanian retail market and proved insufficient to attract any buyers for Aurora's retail business, they must be judged to have failed to deliver their key objective.[18] Moreover, there are no

[16] TER, *Review of the Wholesale Contract Regulatory Instrument*, Issues Paper, December 2015.
[17] TER, *Review of the Wholesale Contract Regulatory Instrument*, Issues Paper, December 2015, p. 18.
[18] ERM, a pre-existing retailer focused mainly on larger business customers and with some interest in market contracts for small businesses has continued its presence but with a small and declining customer base.

indications that any new retailers will enter the Tasmanian market in the foreseeable future. The chief lesson from wholesale market regulation is that if retail competition is to become a reality in Tasmania, including for small business, then wholesale contract regulation is insufficient and structural change in the wholesale market is necessary.

2.2.8 Tasmanian wholesale electricity market different from the NEM

There are a number of important ways in which the Tasmanian wholesale electricity market differs from the NEM wholesale market. These can be summarised as:

- The Tasmanian wholesale market is dominated by Hydro Tasmania on the seller side and Aurora Energy on the buyer side, whereas most other parts of the NEM are characterised by competition between several generators and retailers, albeit imperfect.
- Both the Tasmanian entities belong to the same owner, the Tasmanian Government, which heightens concerns about the market structure, whereas private ownership is more common elsewhere, albeit in concentrated and vertically integrated markets.
- Hydro Tasmania has the ability to control both the spot price (which is the source of retailers' principal commercial risk) and the contract price (which is how they ensure against that risk). Unlike other NEM regions, the option of managing basis risk between NEM jurisdictions with the aid of Inter Regional Settlement Residue (IRSR) units is unavailable, as all inter-regional residues (IRRs) from the Basslink interconnector are allocated to Hydro Tasmania. Similarly, with the current excess of generation capacity, and the continued investment in wind generation on the basis of the RET subsidy, a new entrant retailer is likely to be deterred from building its own costly and unnecessary generation in Tasmania. This locks out generation ownership risk management options available to competing retailers elsewhere in the NEM.
- Spot price volatility in the Tasmanian market can be 'unpredictable' compared to other NEM jurisdictions. This is because Hydro Tasmania can utilise its ability to control spot price outcomes to influence Basslink flows and Baseline Renewable Energy Certificate generation to maximise arbitrage opportunities. This is sound commercial behaviour but gives rise to unpredictability in Tasmanian spot market prices.
- This situation has resulted in the Tasmanian Government introducing a framework that regulates Hydro Tasmania's wholesale contracts and intended to allay the fears of potential new entrant retailers about the market power of Hydro Tasmania and provide them with a safety net of regulated contracts modelled on the NEM derivates market. However, this has failed to stimulate any significant new entry.

2.2.9 Impacts of Tasmania's wholesale electricity market on small business

The main implication of Tasmania's unique wholesale electricity market for consumers, including small business, is that potential new entrant retailers perceive that their entry to the Tasmanian electricity market carries too many risks and is not worthwhile. As a consequence, electricity consumers, including small business, have been denied access to retailer choice and the benefits of a competitive retail market, including competitive prices and price discounting.

2.2.10 Basslink 2 and Hydro Tasmania 2.0

Two prospective projects that could impact on the Tasmanian wholesale market and small business are a second Bass Strait interconnector (sometimes referred to as 'Basslink 2') and major expansion of Hydro Tasmania's system (so-called 'Hydro Tasmania 2.0').

A major independent assessment of the potential costs and benefits of 'Basslink 2' has recently been completed.[19] This found that such an interconnector only had positive net material benefits under certain restrictive scenarios, namely, if a second interconnector between Victoria and South Australia was built or if there was a substantial reduction in Tasmanian demand (e.g., the departure of one or more of the Major Industrial users).

If 'Basslink 2' was regulated Tasmanian consumers would bear transmission costs in proportion to imports across the link but would also benefit from reduced inter-regional constraints, resulting in a convergence of wholesale energy prices. For a merchant (unregulated) 'Basslink 2', the impact on consumers would depend on the owner's bidding strategy. Cost impacts would also depend on spot price differences between the regions, the volume of the flows between them, the ancillary services market and competitive conditions in wholesale and retail markets. The lack of competition in the Tasmanian wholesale and retail markets could limit any consumer benefits.

'Hydro Tasmania 2.0' involves the possible expansion of Hydro Tasmania's generation system through a combination of enhancements of the Tarraleah hydropower scheme and the Gordon Power Station, and new pumped hydro energy storage schemes that could deliver up to 2500MW of pumped hydro capacity.[20] The Australian Renewable Energy Agency (ARENA) is in the process of assessing applications from Hydro Tasmania to support feasibility work. Such expansions appear to be based more on the prospects electricity exports from Tasmania, especially if a second interconnector were constructed, than aimed at benefitting Tasmanian electricity consumers.

Whilst Tasmanian consumers could also benefit from the additional capacity, e.g., when exports to the NEM were not profitable, the additional electricity supply would be in the hands of Hydro Tasmania with its substantial market power. Moreover, Tasmania already has significant excess electricity capacity which is already posing a barrier to new entry as discussed in Section 2.2

Of particular concern is the number of small business sectors which rely heavily on cheap "Off Peak" energy as the main energy input into their business operations. These include independent supermarkets, aged care facilities, irrigators and dairies, where more than 60% of the energy consumed is "Off peak" energy and decades of capital investment have been sunk in response to this price signal.

"Pumped hydro energy storage schemes that could deliver up to 2500MW of pumped hydro capacity", also means up to 2,500MW of Hydro pumps competing with independent supermarkets, aged care facilities, irrigators and dairies for access to low priced "Off Peak" energy, to re-pump water, which will inevitably drive up "Off Peak" rates for all users. In essence, pumped hydro reduces Peak prices, at the expense of increasing Off Peak prices, with an inbuilt *inefficiency of 20%*.[21]

[19] Dr John Tamblyn, *Feasibility of a Second Tasmanian Interconnector, Final Report*, April 2017 at https://www.environment.gov.au/system/files/energy/files/preliminary-report-feasibility-of-a-second-tasmanian-interconnector.pdf.

[20] Hydro Tasmania, *Supporting Australia's energy transition, Media Release*, 20 April 2017 at https://www.hydro.com.au/about-us/news/2017-04/supporting-australia%E2%80%99s-energy-transition.

[21] Mercury Newspaper (2017) "*Can Tasmania be the battery of the nation*?" Chris Gwynne Hydro Tas. 8 Sept.

2.2.11 Energy security and the wholesale market

Energy security is important to Tasmanian small businesses. This point was clearly enunciated in the TSBC's submissions to the Tasmanian Energy Security Taskforce (TEST).[22] Simply put, small business needs a secure and reliable supply of electricity to maintain its operations and also needs it to be priced competitively.

The threats to Tasmania's energy security that emerged in the second half of 2015 to May 2016 due to a combination of:

- Questionable risk management practices leading up to the Basslink failure when Hydro Tas appeared to generate particularly aggressively exporting heavily into Victoria in pursuit of additional revenue from Large Generation Certificates;[23]
- 2015 Lowest spring inflows ever recorded;
- 1 January 2015 relatively low starting point dam levels post Carbon Tax (except for recognised drought years of 2007 & 2008);
- Unavailability of the 208MW Tamar Valley Combined Cycle Power Station;
- The 20 December 2015 failure and sustained outage of Basslink,

These threats served to highlight energy security as a serious issue for Tasmania and resulted in the formation of the TEST.

They also served to shine a light on the important role that on-island generation (hydro-electric, thermal and renewable), interconnection to the NEM, Hydro Tasmania's interregional trading opportunities and the wholesale market play in shaping Tasmania's energy security.

The current wholesale market structure in Tasmania could pose some threat to energy security. The recent threat to energy security highlighted possible deficiencies in present arrangements including conflicts or tensions in Hydro Tasmania's energy security (water management) and commercial roles.

There were suggestions that Hydro Tasmania had placed a desire to maximise its revenues during the carbon price period and following this a desire to generate LGC's from above "Baseline" dispatch of Hydro generation, above the need for prudent water management.

Its approach to the TVPS, which can play an important role in energy security, was also called into question, especially in its attempted sale of the CCGT communicated in its media release of 12th August 2015,[24] just seven weeks before "hitting the brakes" and going to zero export to Victoria on 8th October 2015.

We intend to further examine energy security issues in our Final Report, especially in light of the Final Report of the TEST, which has recently been released.

[22] TSBC (2016) "*Tasmanian Energy Security Taskforce Response to Consultation Paper Tasmanian Small Business Council*" 16 September.
[23] Goanna Energy Consulting Pty Ltd (2016) "Tasmanian Energy Security Taskforce, Energy Crisis Market Impact Study, Energy Crisis, or Risk Management Crisis?" 16 September.
[24] Hydro Tas (2015) "*Changes to operation of Tamar Valley Power Station*", 12 August Media release.

2.3 KEY POINTS

Key points to emerge from this Chapter include:

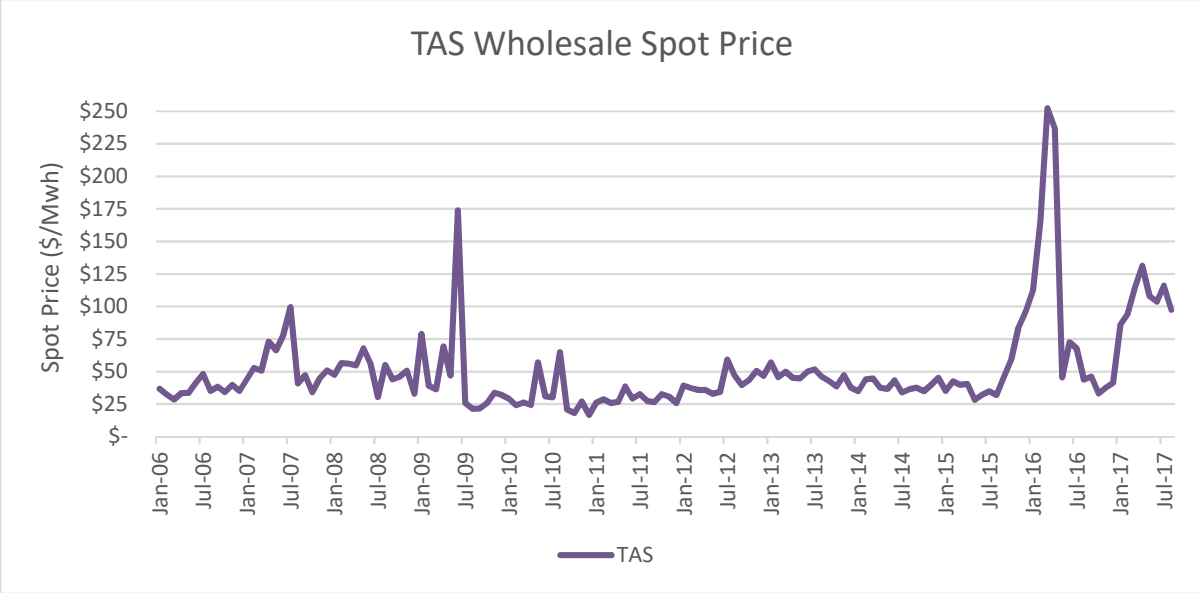
- The Tasmanian wholesale electricity market is different to the rest of the NEM. It is a far more concentrated and regulated market with competition all but absent.
- Electricity generation in Tasmania is highly concentrated in the hands of Hydro Tasmania, which owns or controls 96 per cent of capacity, making it by far-and-away the most concentrated wholesale market in the NEM.
- The Expert Panel described Hydro Tasmania as having latent market power, and found that this was sufficient to deter new entry into Tasmania, especially by the larger mainland retailers, who are critical to introducing retail competition into Tasmania.
- Wholesale electricity market shortcomings have essentially left the Tasmanian wholesale and retail electricity markets devoid of both competition and any prospects of competition emerging due to a lack of any interest from larger inter-state retailers. This has placed FRC in a strictly 'Clayton's choice' framework of no material choice for small business.
- Consequently, small businesses have no access to competitive pricing and miss out on the benefits of competition enjoyed by their peers elsewhere in the NEM, including price discounting, albeit in an imperfect setting which restricts some of the benefits.
- There are some positive aspects to wholesale market regulation in Tasmania, however, it has failed to deliver its main objective for small business of encouraging retail competition and therefore must be judged a failure.
- Moving beyond the current regulatory approach to the Tasmanian wholesale market is critical to improving the opportunities for competition in the Tasmanian electricity market (wholesale and retail).
- The option of either selling the 'gentraders' to potential new entrants or of going a step further and separating and selling Hydro Tasmania's physical and trading functions as three separate businesses is the approach most likely to stimulate new entry. However, as discussed in the following Chapter, current wholesale price pressures in the NEM (including Tasmania) and their damaging impact on retail prices make the immediate environment for competitive reform difficult.
- Nevertheless, in the longer term structural reform of Tasmania's wholesale electricity market is still likely to bring the biggest and most sustainable gains to small business.
- Energy security is important to Tasmanian small businesses given their heavy reliance on electricity but the current wholesale market structure in Tasmania could pose a threat to energy security as evidenced by the threats that emerged in the latter half of 2015 and first half of 2016, which has raised some important questions about Hydro Tasmania's role.

3 Tasmanian Wholesale Electricity Prices

3.1 Description of Wholesale Electricity Prices

The Tasmania wholesale electricity price is characterised by the numerous influences detailed in the previous chapter. The principal influence being Hydro Tasmania's latent market power, which has historically allowed them to heavily impact spot prices and influence Basslink flows to maximise arbitrage opportunities. The resultant unpredictable and volatile behaviour of the Tasmanian wholesale electricity market can be seen in Figure 4 below where repeatedly over the past decade there have been dramatic and short-term price fluctuations.

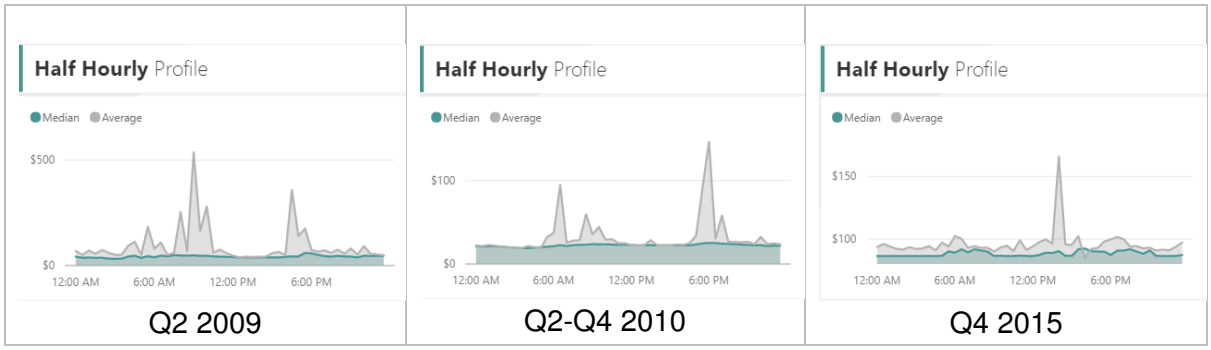
Figure 4: Tasmanian Wholesale Spot Price 2006-2017



Source: SavvyPlus Consulting BI

This unpredictable nature of the Tasmanian wholesale market was evident in instances of particularly volatile periods during 2009, 2010 and 2015, where very sudden surges in the wholesale spot price were observed. The particularly volatile and singular nature of these events can be seen in the deviation of the average half hourly spot price from the median price for that period. Figure 5 shows examples of the significant volatility for a few of the quarters in the history of the spot prices.

Figure 5: Tasmania Half Hourly Wholesale Price Profile: 2009, 2010 and 2015.



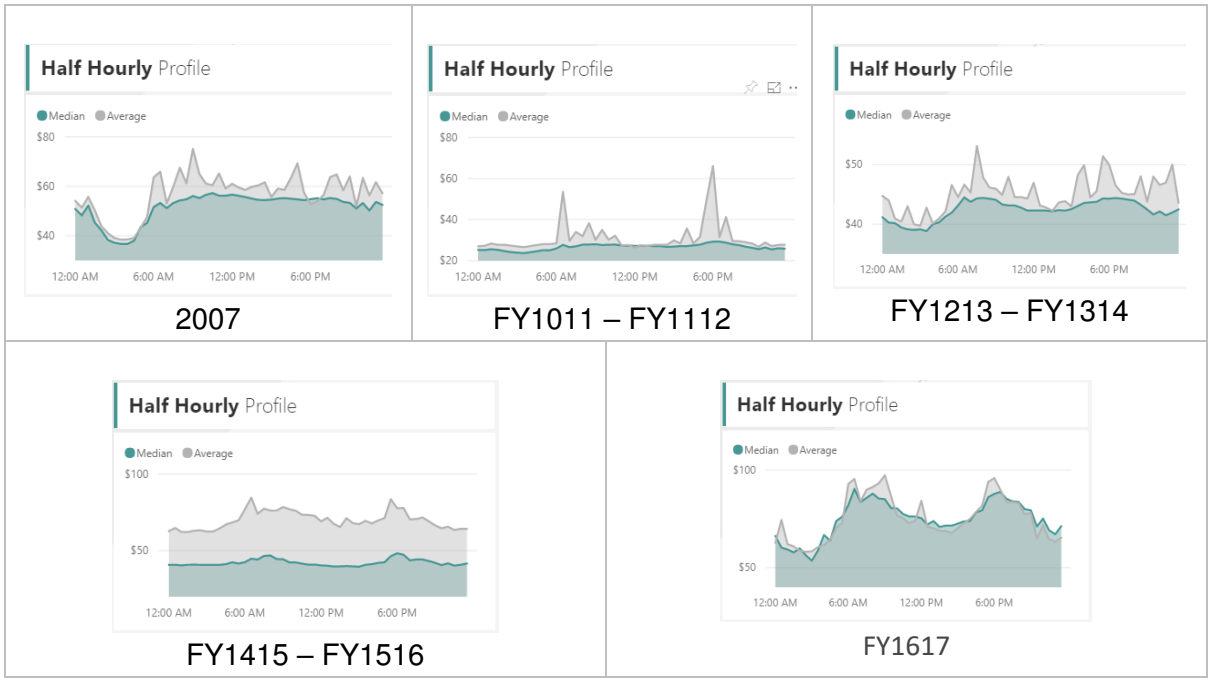
Source: SavvyPlus Consulting BI

More sustained price increases can be seen during periods of uncertainty surrounding future supply and pricing, as was the case in 2007/08 where drought conditions brought Hydro Tasmania's water storage levels to low levels. In the first half of 2007, drought conditions were experienced across the NEM, so there was a sustained price elevation to the underlying price, caused by the closure of water-cooled base load generators in Queensland, and the fear of lack of water for other water-cooled coal-fired plants, plus Snowy Hydro being concerned about water reserves. After 1 July 2007, strategic behaviour of key generation players changed and the drought conditions eased, leading to a softening of the spot price by year end.

In July 2012, the Carbon Tax was introduced and remained in place until it was repealed in July 2014. During the Carbon Tax period, the spot price experienced an upward shift in the underlying price which remained in place for the carbon impacted period.

More recently over the past year, we have seen a similar steady rise in the spot price following the announcement of recent closures, including significantly the Hazelwood plant, the substantial reduction in energy imports across the Basslink, increased utilisation of more expensive gas-fired generation, a revaluation of the gas price and other factors that are looked at more closely later in this chapter.

Figure 6: Tasmania Half Hourly Wholesale Price Profile: 2007/08, 2012-14, 2017.

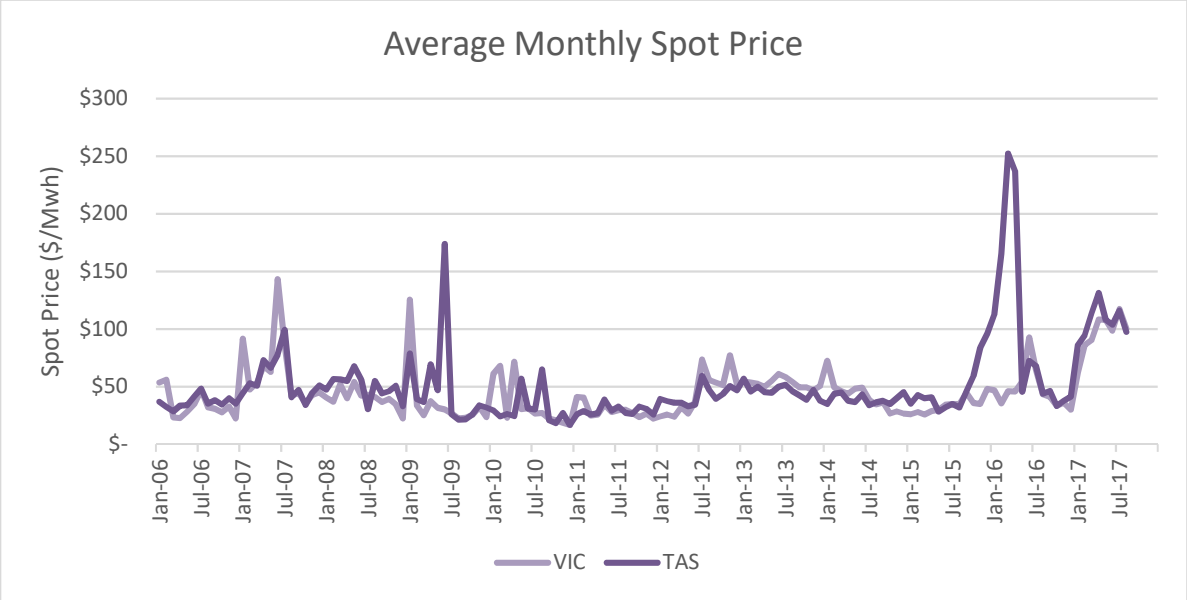


Source: SavvyPlus Consulting BI

3.2 Historical Prices and Trends - Tasmania and the NEM

Typically, the general trend of the Tasmania wholesale spot price follows that of the rest of the NEM and in particular its closest neighbour, Victoria. The spot prices differ between the two regions either due to line losses across the Basslink, or when Basslink flow is constrained in either direction, and the local generation sets the spot price unfettered by competition from the constrained region. The trace of the spot price of Tasmania and Victoria is shown below in Figure 7.

Figure 7: Tasmanian and Victorian Average Monthly Spot Prices



Source: SavvyPlus Consulting BI

As shown in Table 2, the statistical correlation between Tasmania and Victoria spot prices when the two regions are connected is 63 per cent (excluding the period of the Basslink failure). This correlation is lower than the correlation between other neighbouring regions in the NEM. Looking at the other regions it is not surprising that they all show a stronger correlation with regions with a shared interconnector.

Table 2: Statistical Correlation of NEM Regions January 2006 to July 2017

	TAS	VIC	SA	NSW	QLD
TAS	100%	63%	43%	47%	43%
VIC	63%	100%	65%	71%	53%
SA	43%	65%	100%	51%	44%
NSW	47%	71%	51%	100%	72%
QLD	43%	53%	44%	72%	100%

Source: SavvyPlus Consulting BI

For 2017 the panorama has changed with the spot price in the southern States of South Australia, Victoria and Tasmania breaking away from the northern states, which can be seen by the stronger correlation between Tasmania and Victoria, and negative correlation between both Tasmania and Victoria with the two most northern states (see Table 3).

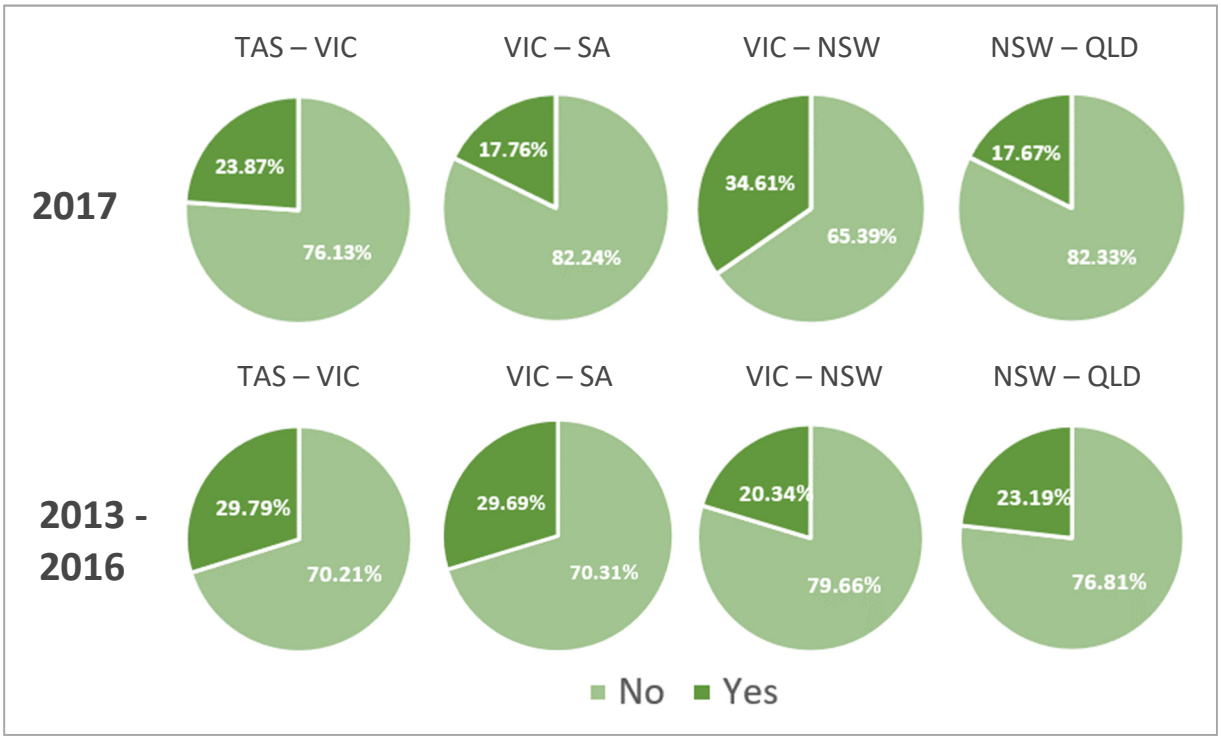
Table 3: Statistical Correlation of NEM Regions Jan-17 to Jul-17

	TAS	VIC	SA	NSW	QLD
TAS	100%	73%	11%	-15%	-55%
VIC	73%	100%	12%	-11%	-71%
SA	11%	12%	100%	90%	49%
NSW	-15%	-11%	90%	100%	69%
QLD	-55%	-71%	49%	69%	100%

Source: SavvyPlus Consulting BI

The pie charts in Figure 8 below represent the percentage of time that interconnectors were constrained. The significant increase in times the Vic-NSW interconnector was constrained in 2017 supports the evidence above that the southern States are breaking away from the northern States more often due to the market changes including Hazelwood's closure. At the same time the interconnectors linking Victoria with South Australia, and Tasmanian and Victoria have been constrained less. In a similar fashion, the NSW-Qld interconnector has been constrained less in 2017 than in previous years.

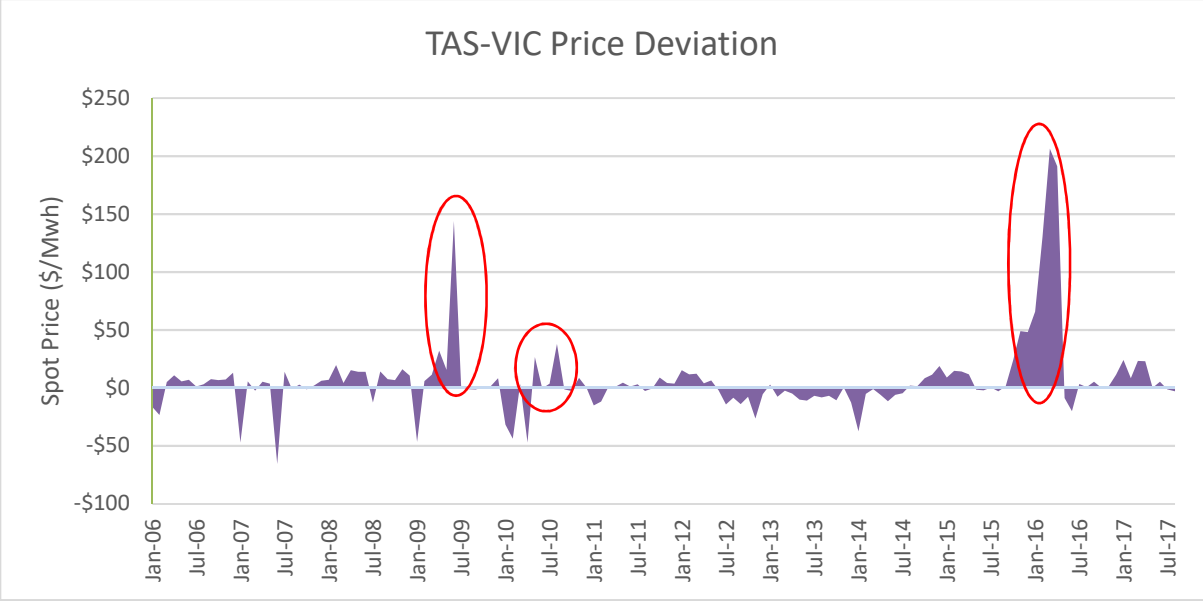
Figure 8: Time Interconnector the Interconnectors were constrained



Source: SavvyPlus Consulting BI

Instances where the Tasmanian Spot Price has deviated sharply from the Victorian Spot Price can be seen in Figure 9 below displaying the deviation between the two Regional spot prices.

Figure 9: Relative Difference between TAS and VIC Spot Prices



Source: SavvyPlus Consulting BI

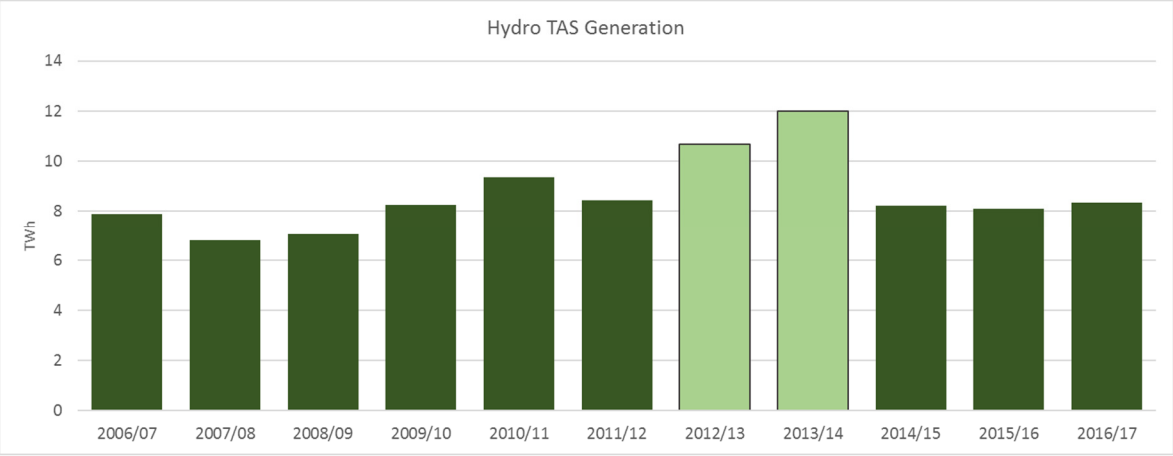
The factors affecting price variation are numerous, but as the AER acknowledges in its response to the Electricity Supply Industry Expert Panel's paper reviewing the Tasmania Electricity Sector[25], Hydro Tasmania's opportune reduction in non-scheduled generation during periods of high demand, with a cutback in the amount of low-priced generation capacity offered and an ensuing dispatch of high-priced generation, has contributed to such periods of high spot prices. In the same paper, the AER points out that there are numerous examples of where Hydro Tasmania has offered higher prices during the outages experience by its competitors, as was the case in the Tamar Valley outages of May 2010[26].

The most recent and significant of these events was prior to the Basslink failing in late December 2015, and then during the interconnector outage which ended in June 2016. In the case of the period before the Basslink failure, Hydro Tas water storage levels had been depleted significantly to barely above the revised minimum target storage level of 25 per cent. The low storage level of December 2015 was the result of:

1. two years of exporting a record amount of energy across Basslink to the higher priced Victorian Region during the Carbon Tax years without sufficient recovery time; and
2. in our view, poorly managed water storage management in the period late April 2015 to September 2015, which was subject to a separate study undertaken by Goanna Energy for the Tasmanian Energy Security Taskforce in September 2016[27], which concluded that the risk management practices of Hydro Tasmania were questionable.

Figure 10 below shows the annual generation of Hydro Tasmania grouped by financial year, with the Carbon Tax years marked, which demonstrates the increased energy generated from hydro stations.

Figure 10: Hydro Tasmania Annual Generation 2006/07 to 2016/17



Source: SavvyPlus Consulting BI

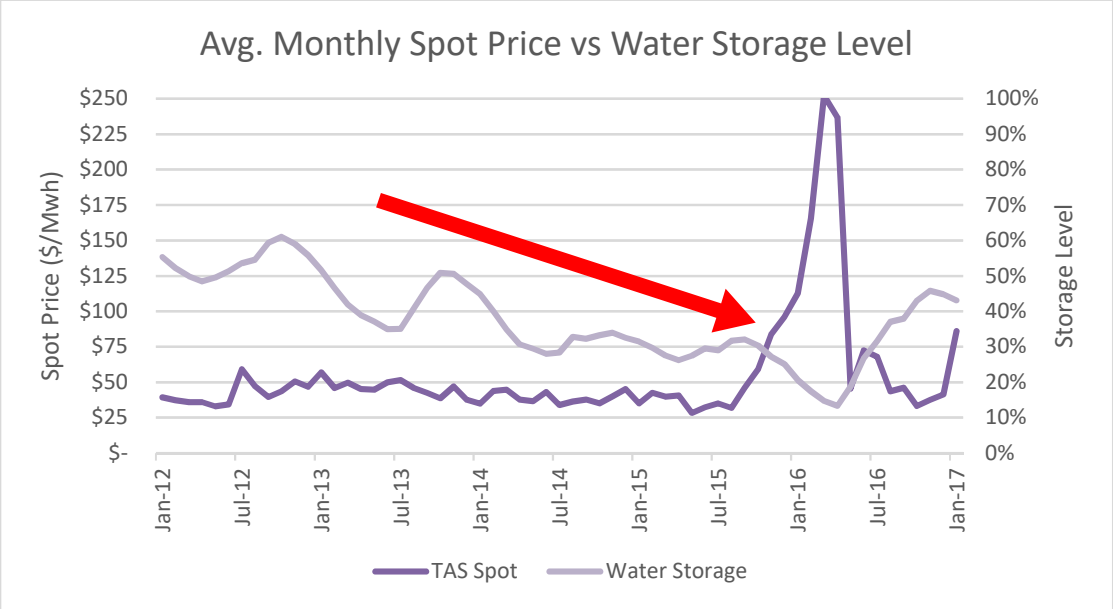
[25] AER, *Response to Electricity Supply Industry Expert Panel's Issues Paper*, 15 August 2011.

[26] Tamar Valley was managed by Aurora Energy at this time through a fully owned subsidiary company "AETV Power". On 1 June 2013, the State Government transferred the ownership of the power station from Aurora Energy to Hydro Tasmania.

[27] See TEST Energy Crisis Market Impact Study, Goanna Energy, 16 September 2016

Figure 11 shows the monthly spot prices and the corresponding water storage levels.

Figure 11: Tasmanian Average Monthly Spot Price vs Hydro Tasmania water storage levels

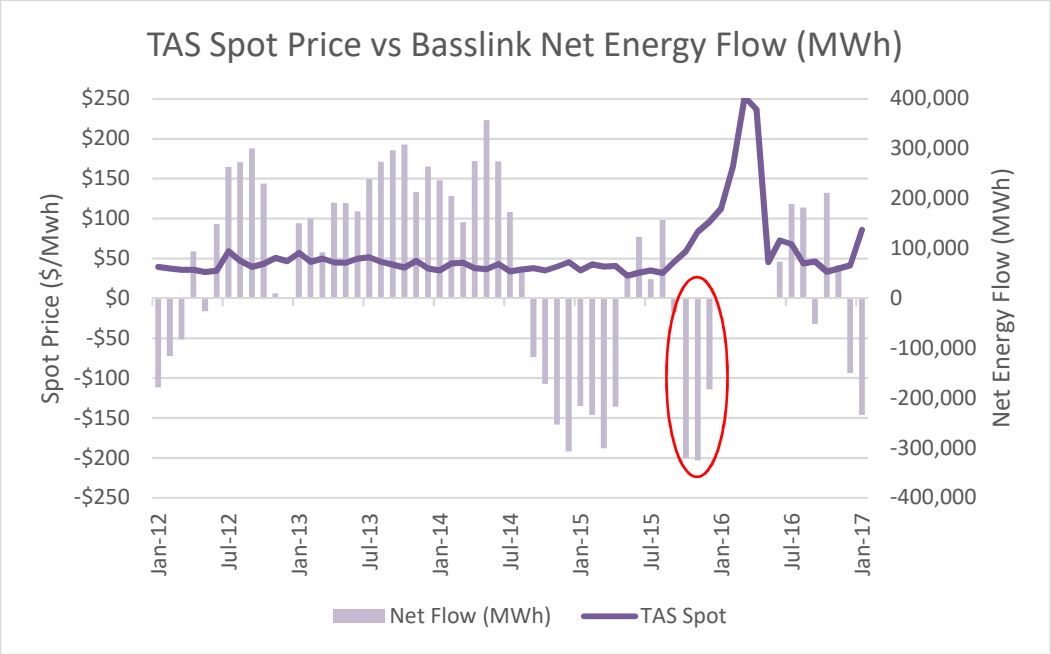


Source: SavvyPlus Consulting BI

Leading up to the failure of the Basslink connector, Hydro Tas was already relying heavily on energy imported from Victoria (see Figure 12) because of the record low spring inflows.[28] By the time Basslink was restored in June 2016, water storage had reach a low of 12.8 per cent in April 2016 with spot prices reaching a record high the month before.

[28] "In Spring last year [2015] Tasmania experienced the lowest rainfall in over 100 years of recorded history. History proves that the spring dry was worse than a one in 100 year event. The inflows to the Hydro Dams during spring were also the lowest in Hydro's records. In fact, the inflows were not just the lowest on record, they were less than half the previous record low in the last 30 years of Hydro records", Ministerial Statement on Energy Security, Matthew Groom, Minister for Energy, 8 March 2016

Figure 12: Tasmanian Spot Price vs Basslink Net Flow from Tasmania to Victoria.

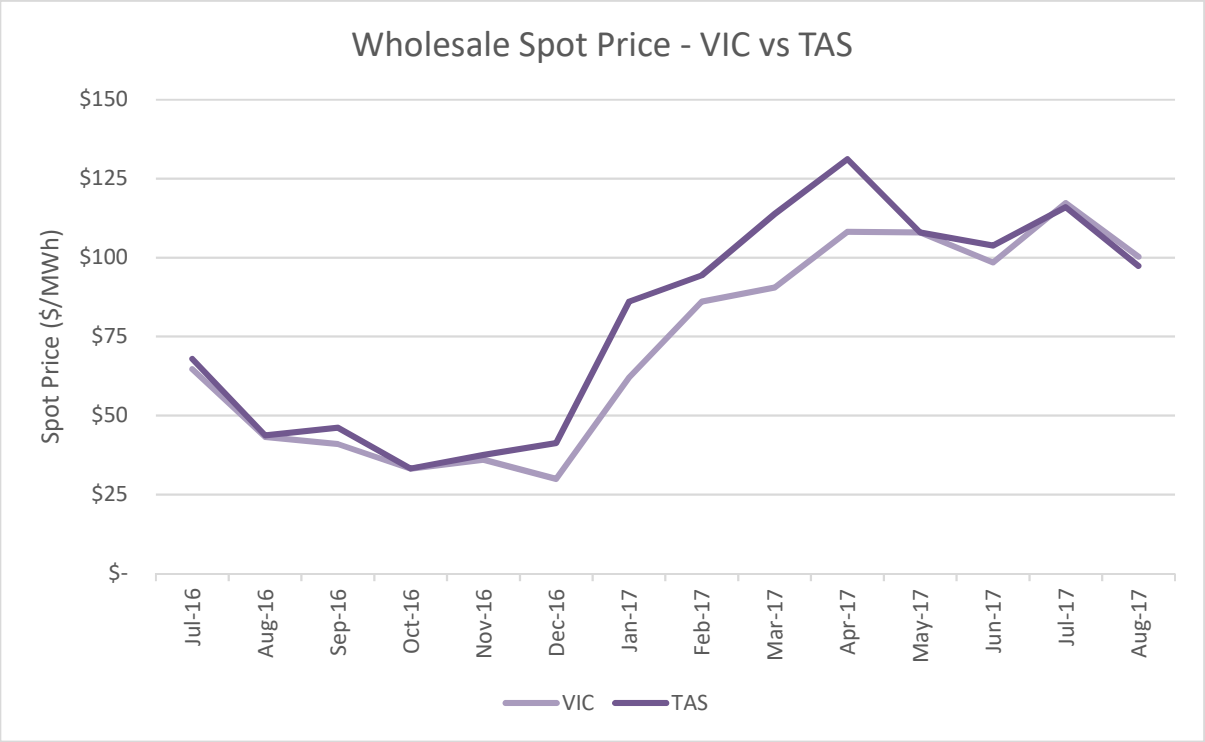


Source: SavvyPlus Consulting BI

3.3 Recent Prices

Since early this year, wholesale spot prices have risen sharply throughout the NEM due to a range of factors explored in this section. Figure 13 below traces the monthly average spot prices for Tasmania and Victoria since Basslink's restoration.

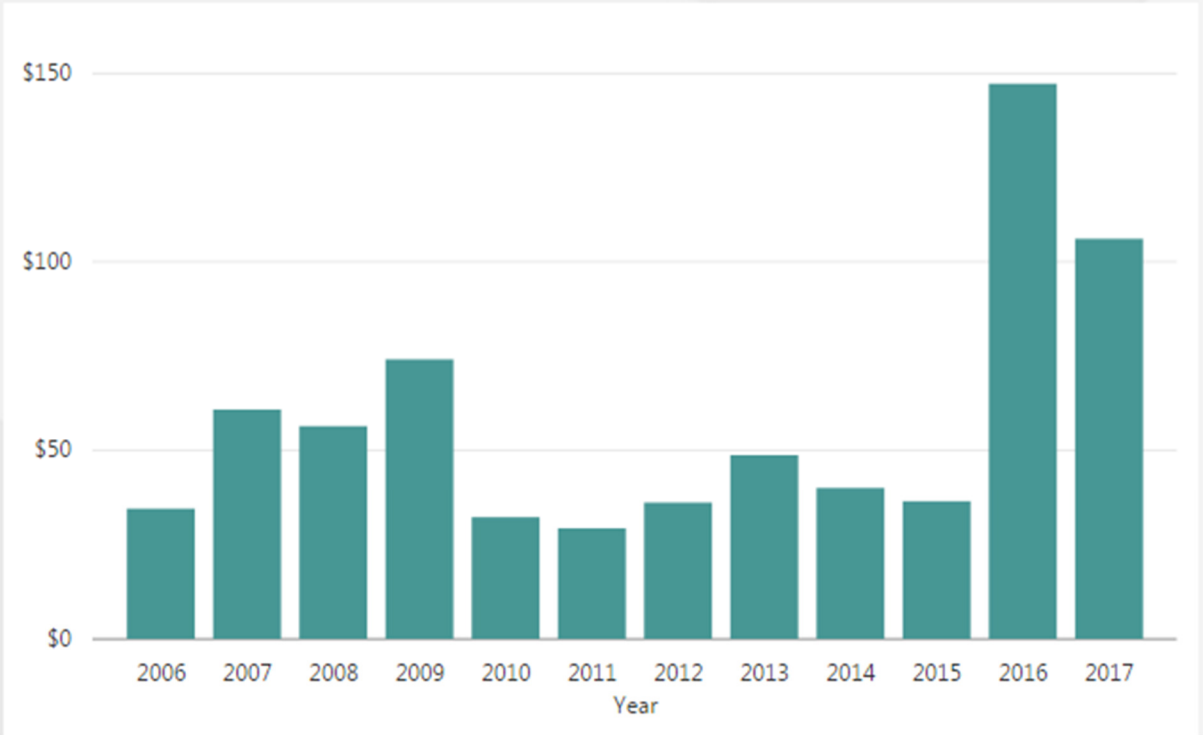
Figure 13: Recent Tasmanian and Victorian Electricity Spot Prices



Source: SavvyPlus Consulting BI

Figure 14 below shows the average spot prices since Tasmania joined the NEM over the 1 January to 30 June period. Except for when Basslink was out-of-service from late December 2015 to May 2016, the average price in 2017 has been the highest on record in Tasmania.

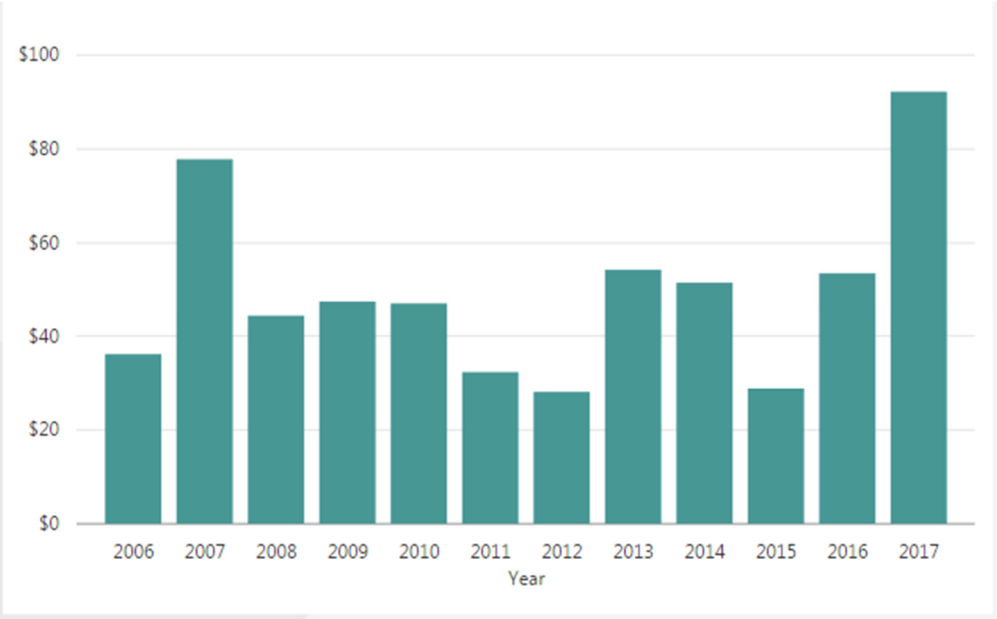
Figure 14: TAS Spot Average price for Q1 and Q2 since 2006



Source: SavvyPlus Consulting BI

Repeating the analysis for Victoria (see Figure 15), 2017 has been the highest average spot price for this January to June period since Tasmania joined the NEM; and indeed, was the highest on record.

Figure 15: Victorian Spot Average Price Q1 and Q2 since 2006

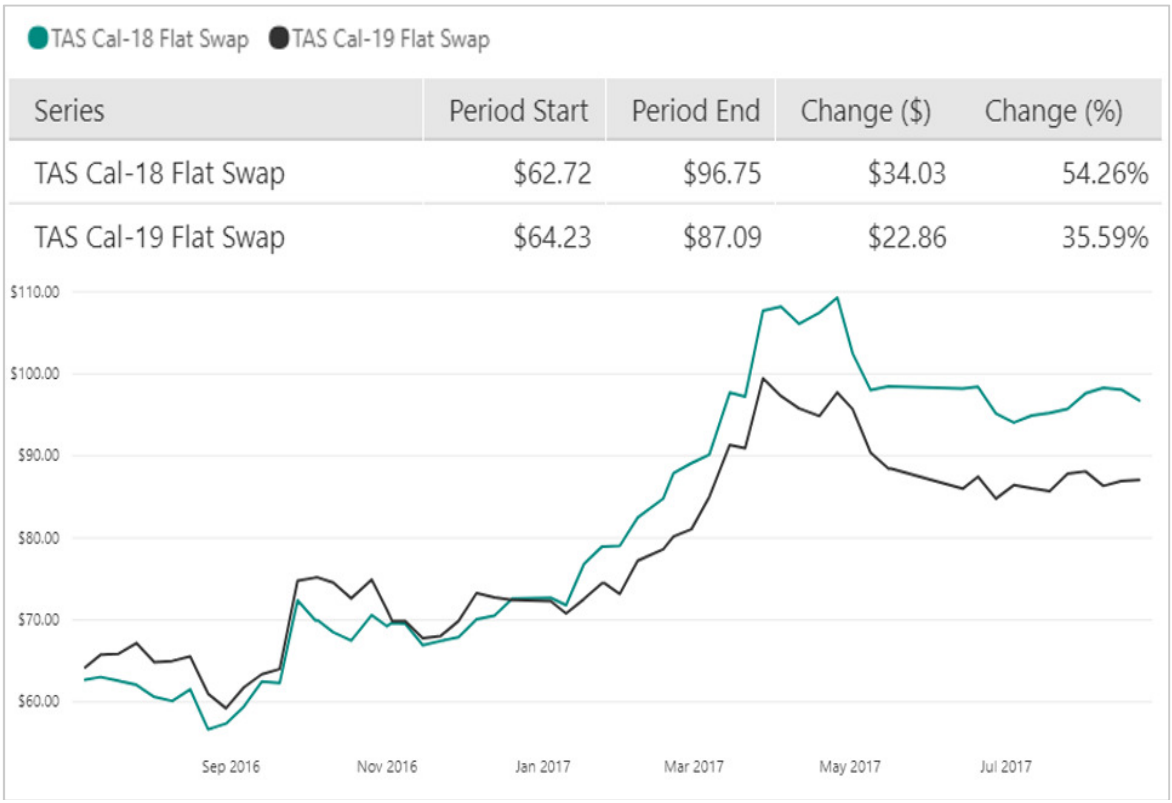


Source: SavvyPlus Consulting BI

3.4 Forward Market Prices

Wholesale forward prices in Tasmania for the calendar year 2018 (Cal-18) increased significantly from 2016 levels and reached a high of around $109/MWh in April 2017. Whilst they have fallen somewhat since then, they remain historically high at around $96/MWh. The forward price for Cal-19 Flat Swaps remains similarly at a high level, albeit slightly lower at $87/MWh.

Figure 16: Wholesale forward prices – Tasmania



Series	Period Start	Period End	Change ($)	Change (%)
TAS Cal-18 Flat Swap	$62.72	$96.75	$34.03	54.26%
TAS Cal-19 Flat Swap	$64.23	$87.09	$22.86	35.59%

Source: SavvyPlus Consulting BI

Wholesale forward prices in Victoria are comparable, although higher for Cal-18 (see Figure 17). However, Victorian forward prices for Cal-19 did not peak as high as Tasmania and have a softer outlook at $84/MWh.

Figure 17: Wholesale Forward Prices – Victoria

Series	Period St...	Period ...	Change (...	Change (%)
VIC Cal-18 Flat Swap	$49.91	$105.00	$55.09	110.38%
VIC Cal-19 Flat Swap	$47.19	$84.00	$36.81	78.00%

Source: SavvyPlus Consulting BI

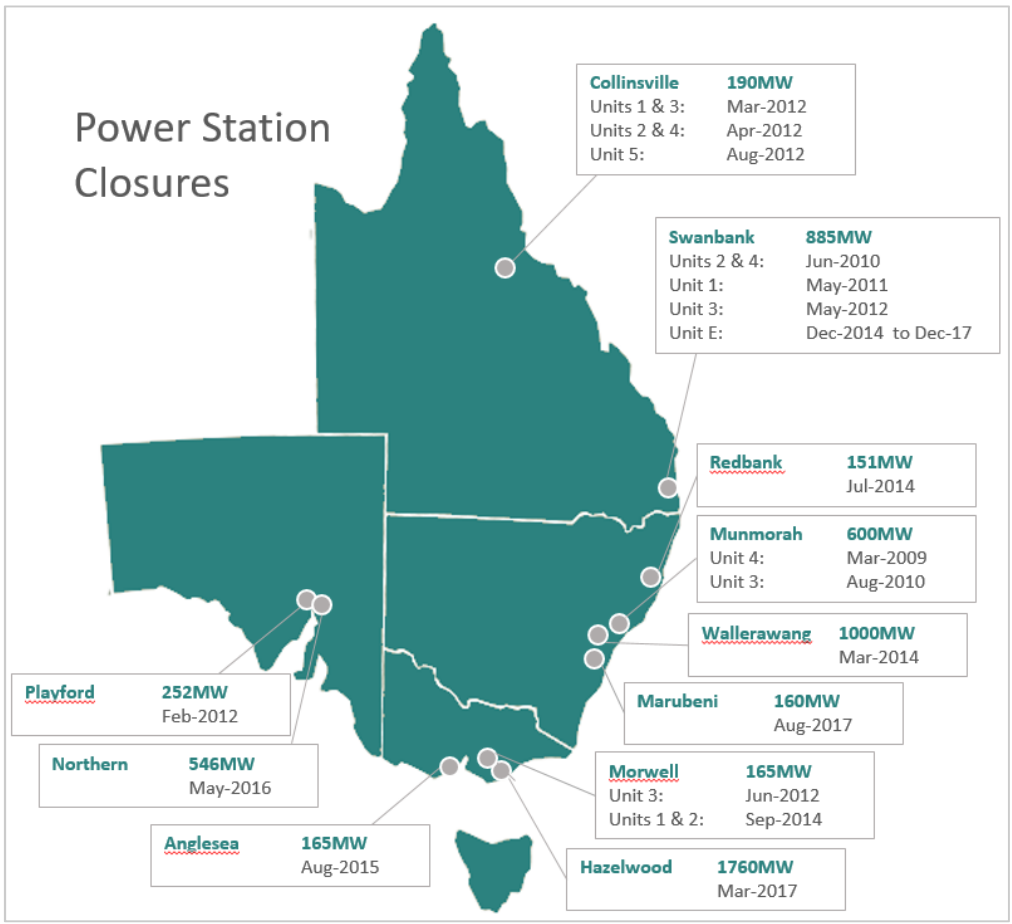
3.5 Causes of the Record 2017 Spot Prices

In our view, the main causes for the elevation of the spot prices has been a range of factors which are discussed in the following sections. Some of these factors are common across the NEM, which reflects that Tasmanian prices are a function of local factors, as well as national ones.

3.5.1 Baseload Closures

One of the principal contributors to the rise in wholesale electricity prices across the NEM has been the many coal and gas-fired plant closures, with almost 6,000 MW closed down in the last decade. The associated price rises were particularly felt by Victoria and Tasmania following the announcement of the closure of the Hazelwood power station in November 2016, but which was speculated back as early as late September 2016, and was closed during the last week of March 2017. Figure 18 shows a map of NEM power station closures.

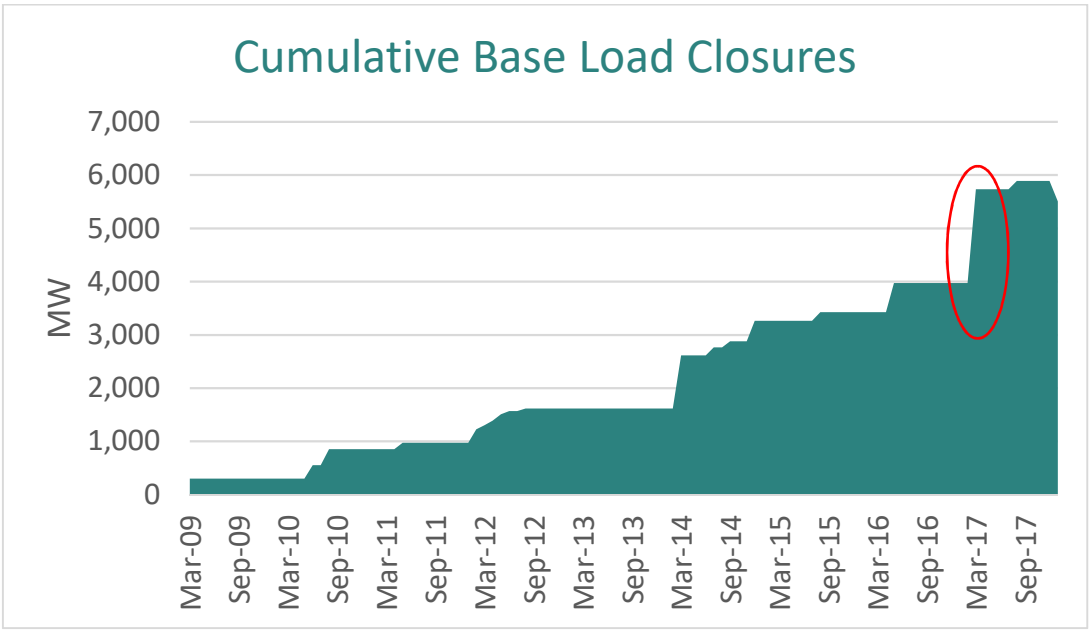
Figure 18: Map of NEM power station closures



Source: SavvyPlus Consulting BI

The significance of the Hazelwood power station closure can be appreciated in the flowing graph showing the accumulated base load closures across the NEM (see area circles in Figure 19).

Figure 19: Cumulative Base Load Closures across the NEM

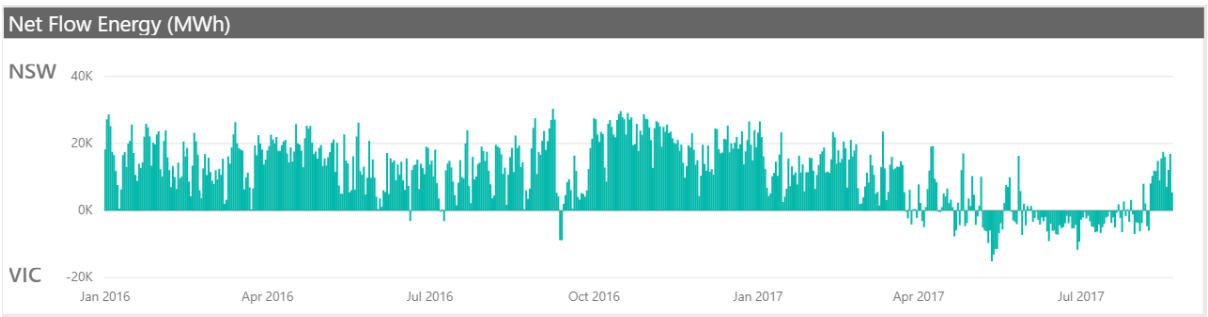


Source: SavvyPlus Consulting BI

3.5.2 Interconnectors Flows

With the closure of Hazelwood Power Station, the energy flows between the regions have been impacted. Up until the closure of Hazelwood in March 2017, Victoria has been a net exporter of energy to NSW, but from that point forward the VIC-NSW interconnector has imported energy into Victoria far more frequently (see Figure 20).

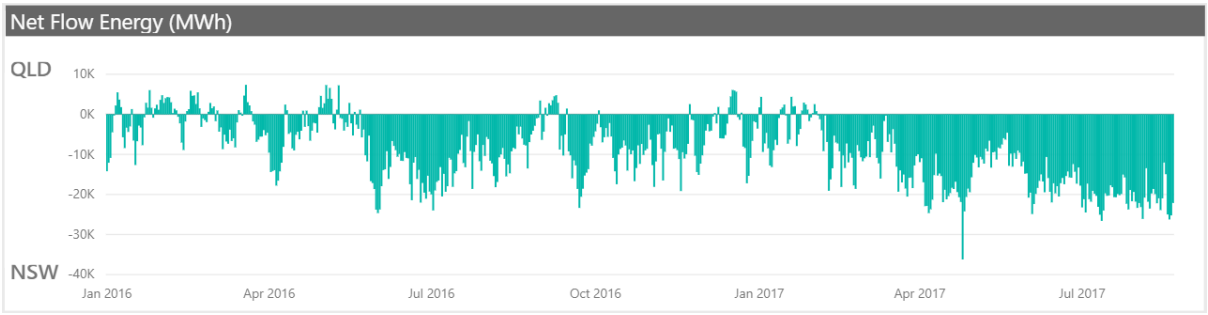
Figure 20: VIC-NSW Interconnector Net Energy Flow



Source: SavvyPlus Consulting BI

Consequentially, the net flow from QLD to NSW has increased to compensate for the reduction in energy imported to NSW from Victoria (see Figure 21). It is likely that the situation might be exacerbated by 2022 when NSW shuts down the Liddell power station, losing 2,000MW of capacity.

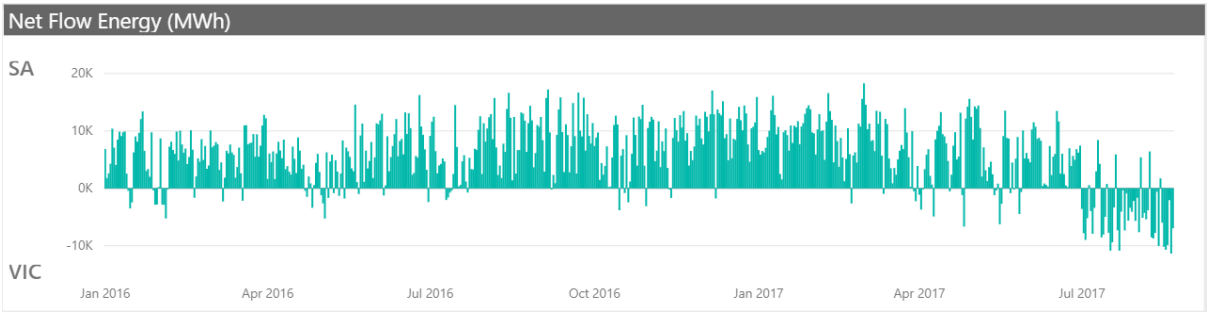
Figure 21: NSW-QLD Interconnector Net Energy Flow



Source: SavvyPlus Consulting BI

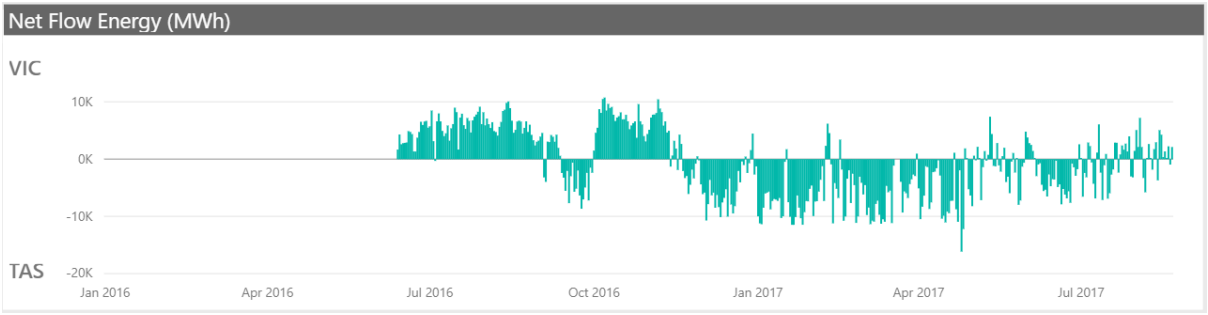
From Figure 22 and Figure 23 below it can be seen that there was a reduction in the net energy flow from Victoria to South Australia following the closure of the Hazelwood power station. More recently, in the last two months Victoria has been a net importer of energy from South Australia, as a result of the constraining of the VIC-NSW and VIC-TAS interconnectors, and significant wind generation in South Australia.

Figure 22: VIC-SA Interconnector Net Energy Flow



Source: SavvyPlus Consulting BI

Figure 23: TAS-VIC Interconnector Net Energy Flow

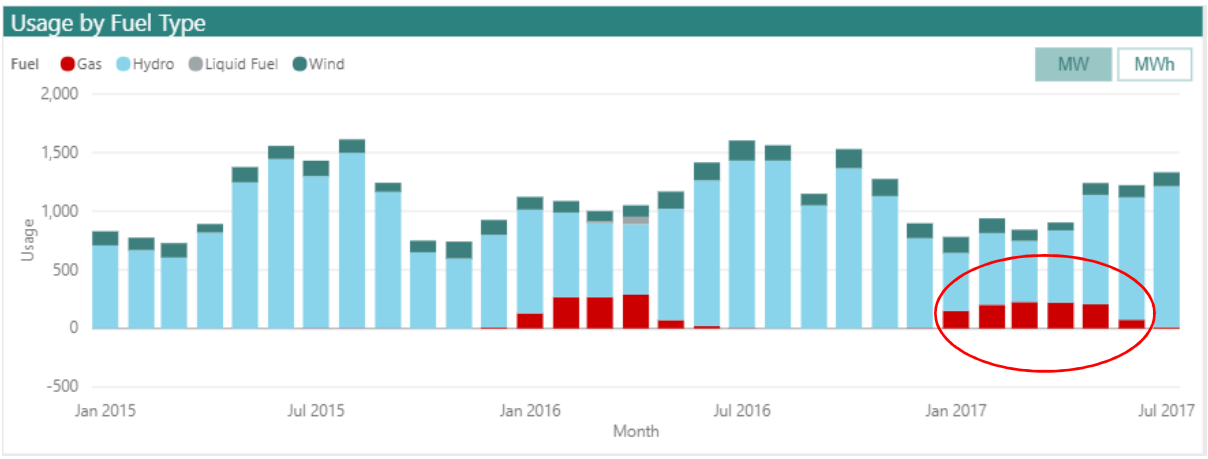


Source: SavvyPlus Consulting BI

3.5.3 Strategic Behaviour of Generators

From the January 2017, Hydro Tasmania re-priced their hydro generation which was substituted by more expensive gas generation. This trend turned around in May, which has contributed to a softening of the relative electricity spot prices. This can be seen in Figure 24.

Figure 24: Tasmanian Energy Generation by Fuel Type

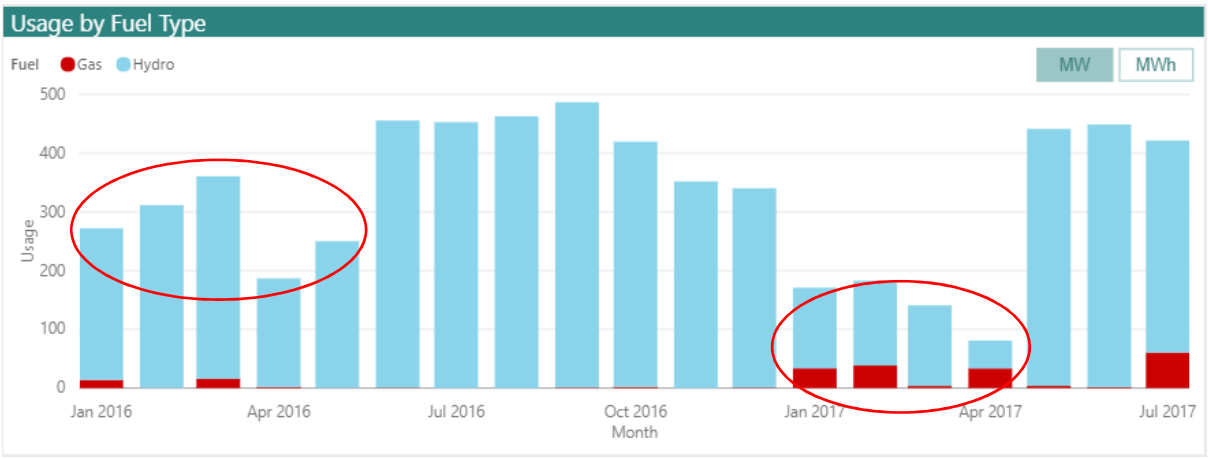


Source: SavvyPlus Consulting BI

Snowy Hydro's Victorian generation followed a similar profile with a reduction in generation and the firing-up of gas generation over the January to April period (see Figure 25). The tap was turned back on at Snowy Hydro in May this year.

We are of the belief that during the second half of 2016, both Hydro Tas and Snowy Hydro ran hard in order to generate above the baseline energy levels required to earn Large Generation Certificates (LGCs). The sudden change in behaviour effective on 1 January 2017 reflects the commencement of a new LGC year when it is unlikely that both parties would have sufficient water reserves to run two consecutive LGC earning years.

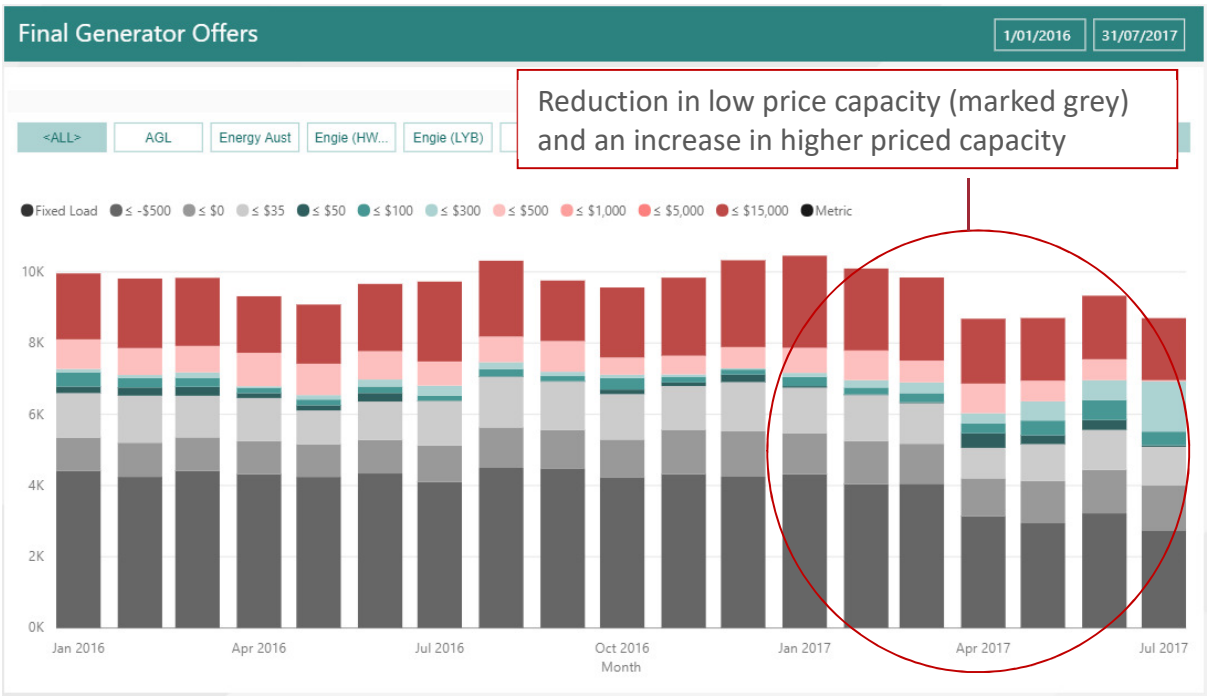
Figure 25: Snowy Hydro Energy Generation by Fuel Type



Source: SavvyPlus Consulting BI

Recently, generators in Victoria and Tasmania have reduced low-priced capacity and replaced it with more expensive offers, making a significant impact on the spot price. Since the closure of the Hazelwood power station, Victoria has seen a substantial reduction in offers below $35/MWh and a corresponding increase in offers between $35-$350/MWh (see Figure 26).

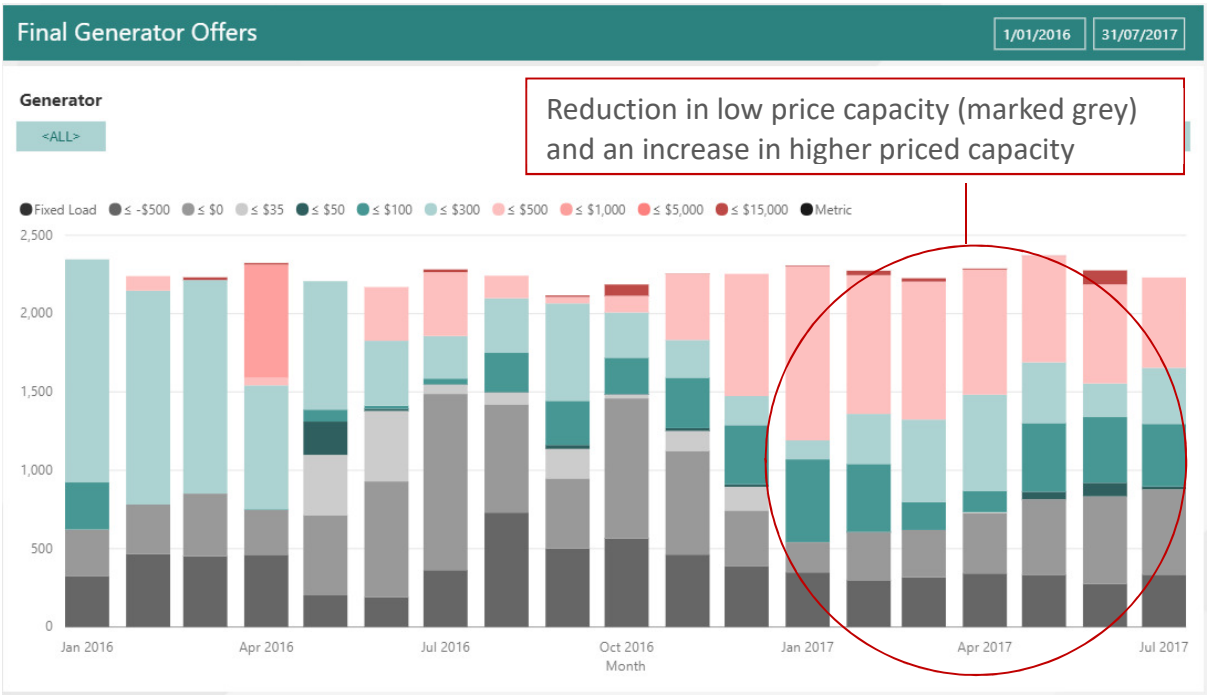
Figure 26: Distribution of Generation Offers, Victoria



Source: SavvyPlus Consulting BI

Tasmania saw an even more noteworthy reduction in offers below $35/MWh, and an increase in offers particularly over $500/MWh (see Figure 27).

Figure 27: Distribution of Generation Offers for Tasmania

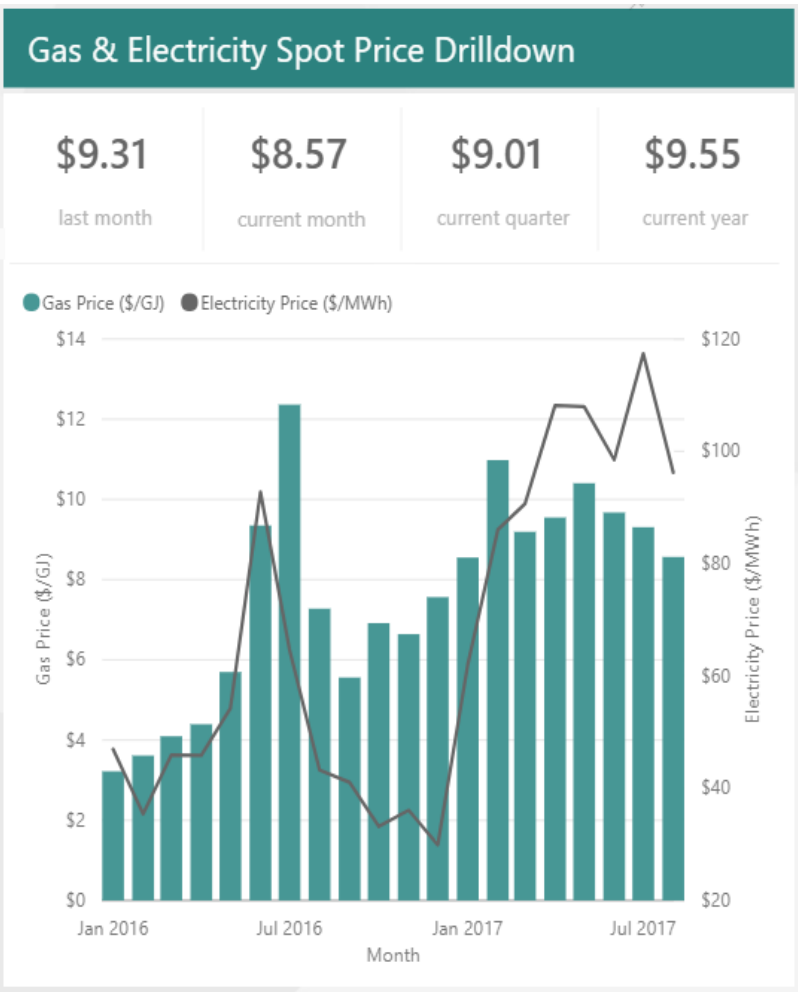


Source: SavvyPlus Consulting BI

3.5.4 Re-Valuation of Natural Gas Prices

The greater reliance on gas generation has aligned with a revaluation of the gas market on the east coast of Australia due to the connectivity with the global gas market via the LNG processing facilities at Gladstone in Queensland. In Victoria spot gas prices have risen from $3.22/GJ in Jan-17 to $9.31/GJ in Jul-17 (see Figure 28). The change in value has led to gas-fired generation making offers at higher prices than previous years.

Figure 28: Victorian Gas Spot Price

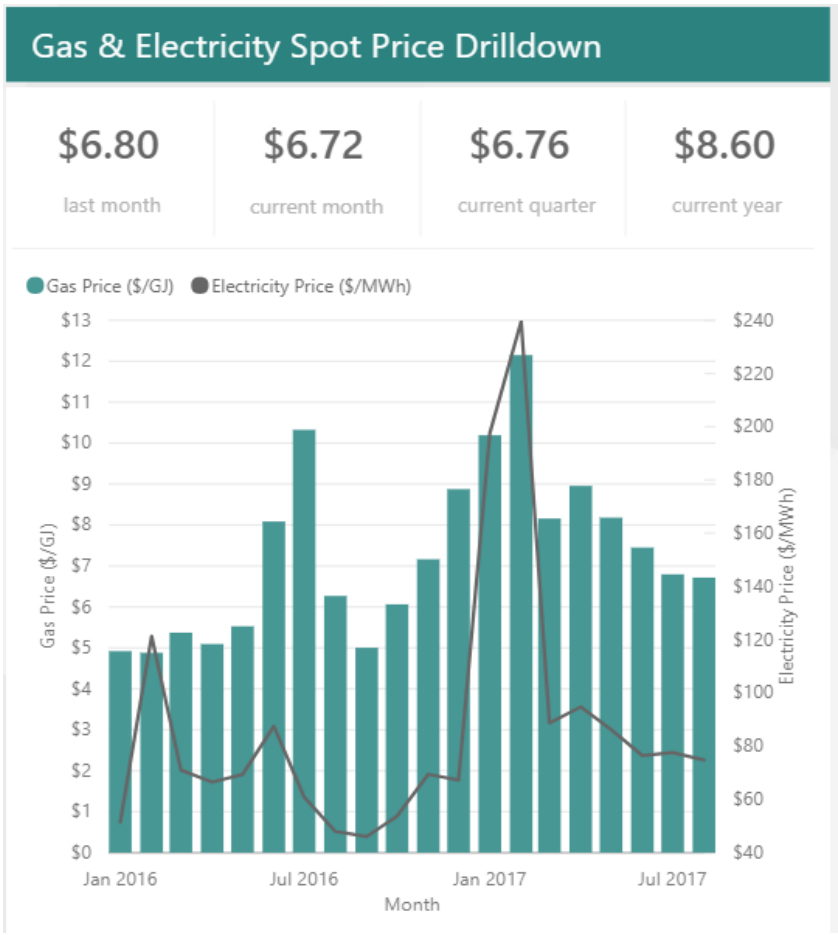


Source: SavvyPlus Consulting BI

Queensland gas prices peaked at over $12/GJ in February 2017 after Origin increased the output from its APLNG project at Gladstone after announcing late last year that it plans to sell its LNG operation. They reported an 8 per cent rise on the previous quarter and a 47 per cent increase on the same quarter last year.

Since then gas prices have continued to soften to just below $7/GJ (see Figure 29) and look to continue the downward trend as reports emerge of coal seam gas being detected in the NSW and Victorian markets for the first time in years, following completion of LNG Plant Proving.

Figure 29: BNE Gas Spot Prices



Source: SavvyPlus Consulting BI

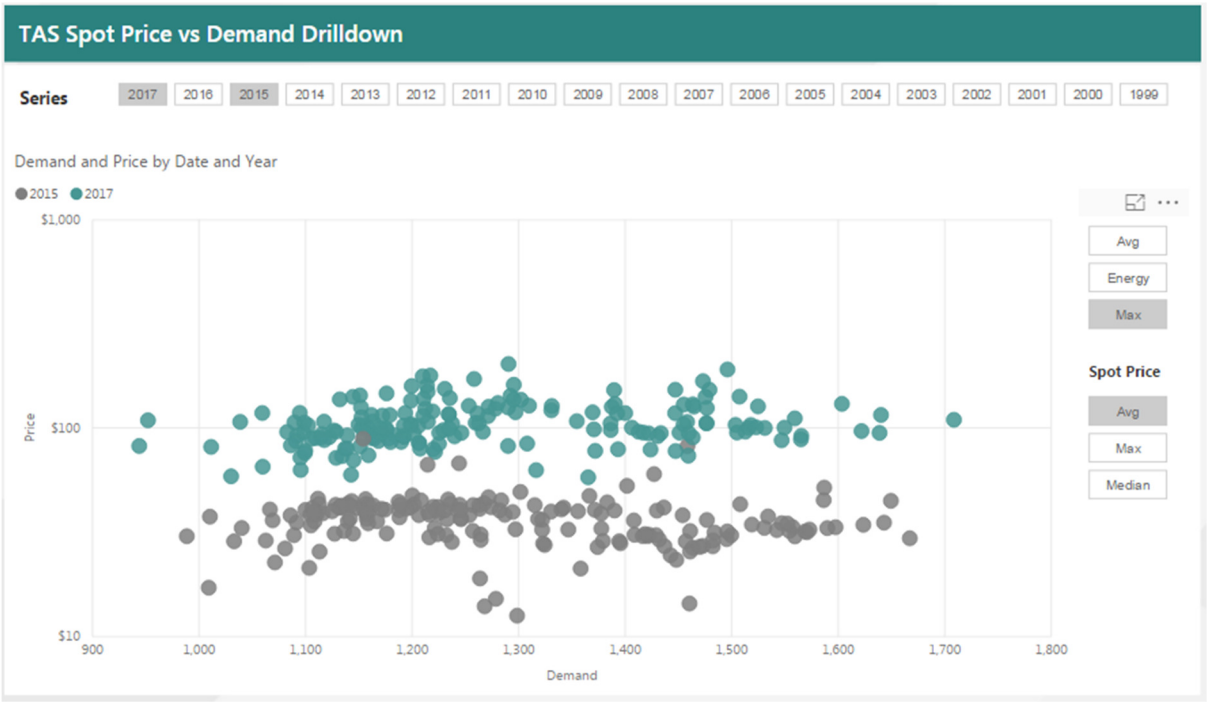
3.5.5 Demand

Demand increases in Qld, NSW and SA during January and February 2017 were a contributor to high spot prices, although this trend has not continued.

For Tasmania, the daily maximum demand for 2017 and 2015 were compared by plotting the daily maximum demand and daily energy against the log of the spot price to determine trends more easily. Basslink was not operational during the first half of 2016, hence it was omitted from the analysis.

As shown in Figure 30, there was a single day (27 June 2017) when the maximum demand exceeded other days, but otherwise no notable maximum demand growth was evident to explain an elevation of spot prices. For the same demand, much higher prices were evident in 2017.

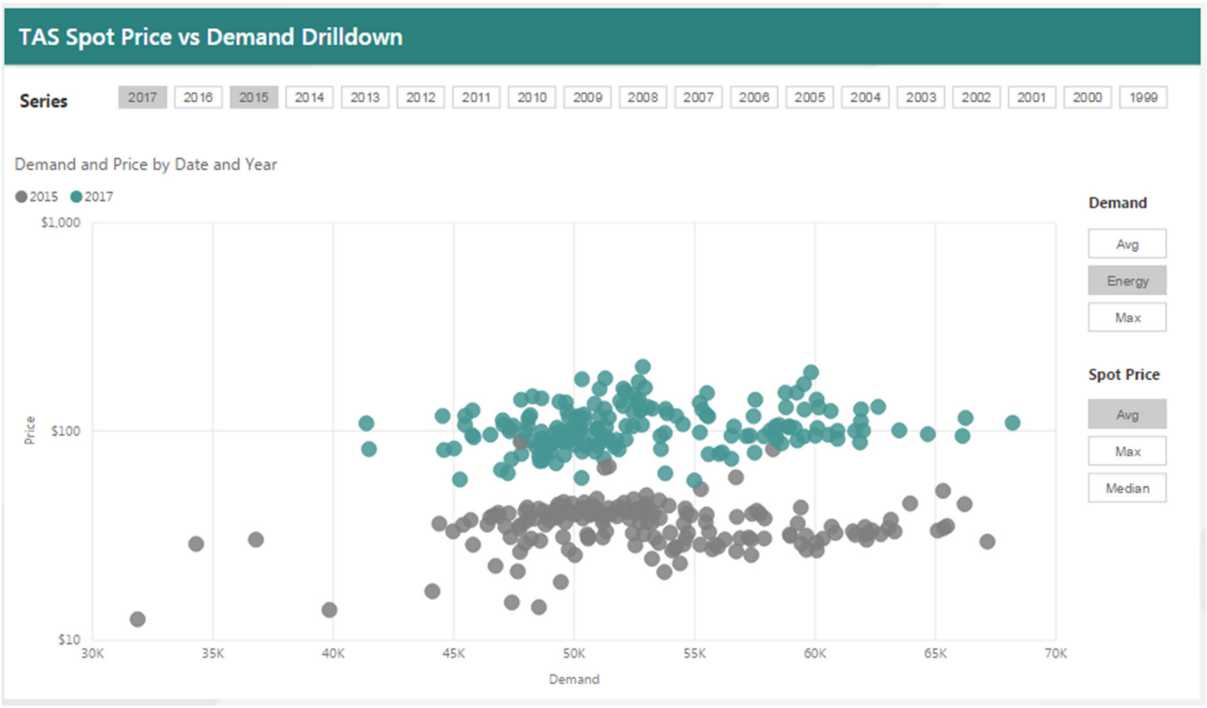
Figure 30: Tasmanian Daily Maximum Demand (2017 versus 2015)



Source: SavvyPlus Consulting BI

The daily energy is compared in Figure 31 and shows that the very low usage levels in 2015 are not matched in 2017. Otherwise there does not appear to be a shift in daily energy but rather a sustained elevation of prices.

Figure 31: Tasmania Daily Energy (2017 versus 2015)



Source: SavvyPlus Consulting BI

Performing the same analysis of the daily energy for the other States, the conclusions are:

1. Victorian daily energy has reduced over the last 3 years
2. South Australia daily energy increased on extreme 3 days in February, but otherwise were very similar to previous years
3. NSW daily energy was much higher in 2017 than previous years on 7 occasions in January and February
4. Queensland had a systematic increase in energy consumed in Q1 2017, but less than other years in Q2. It is believed the record Q1 prices have had an impact on the demand for electricity.

3.6 Wholesale Price Outlook

3.6.1 Introduction

Our approach for forecasting is to use a probabilistic approach, as this recognises that the future is uncertain and that there are many factors that can influence the outcome. It is better to develop outlooks that recognise the potential distribution of the uncertainty. Probabilistic modelling provides an expected distribution which then provides an insight into the most likely, but also extreme but plausible outcomes.

3.6.2 Methodology

Historical spot prices from the period of 1 January 2002 to 15 August 2017 were normalised to account for the increase in Market Price Cap (MPC) through the years and also to adjust for the impact of carbon pricing from 1 July 2012 to 17 July -2014. This adjusted spot price trace was then used to derive the statistics needed to develop the Monte Carlo simulations for forecasting spot prices.

Ten thousand simulations were performed at a daily resolution with stochastic variables of flat and peak spot prices, as well as $300/MWh cap payouts. Days were grouped into 3 different day types, working weekdays, Saturdays and Sundays/Public Holidays. The correlations between the variables were based on the historical data set; both for different variables in the same simulation for the same day types, and for the same variable in the same simulation between day types (serial correlation).

The spot price simulations are projected forward and replicated and scaled 3 times so that the average quarter simulated price equals the target average price for each quarter. The targets consisted of the normalised historical quarterly average price outcome, the average spot price for each quarter over the last 12 months, and finally the forward price for each quarter going forward. The forward price is most useful for dealing with unprecedented changes such as the Hazelwood closure and Tasmania Government intervention.

A forward market captures the collective perceived future value which would consider all the potential market changes. A significant factor affecting perceptions is the natural demand-supply balance which will undergo significant change in the next few years. Listed below in Table 4 are those projects which are under construction or have financial commitment.

Table 4: List of Committed Renewable Projects

	Location	Capacity (MW)	Cost (million $)
Commissioned	Ararat Wind Farm, VIC	240	$ 450
Total Commissioned		**240**	**$ 450**
Under Construction	Sapphire Wind Farm, SA	270	$ 588
	Hornsdale Stage 2 Wind, SA	100	$ 800
	Hornsdale Stage 3 Wind, SA	109	
	White Rock - Stage 1 Wind, QLD	175	$ 400
	Mt Emerald Wind Farm, NSW	180	$ 380
	Townsville Sun Metals Solar, QLD	125	$ 155
Total Constructing		**959**	**$ 2,323**
Financial Commitment	Coopers Gap Wind Farm, QLD	453	$ 850
	Riverland Solar, SA	330	$ 950
	Stockyard Hill Wind Farm, VIC	530	$ 900
	Silverton Wind Farm, NSW	200	$ 460
	Yatpool, Iraak, Wemen Solar, VIC	320	$ 500
	Wild Cattle Hill Wind Farm, TAS	144	$ 300
	Granville Harbour Wind Farm, TAS	112	$ 200
	Torrens Island Gas Plant, SA[29]	210	$ 295
	Port Augusta Solar Thermal Plant, SA	150	$ 650
Total Committed		**2,449**	**$ 5,105**
TOTAL		**3,648**	**$ 7,878**

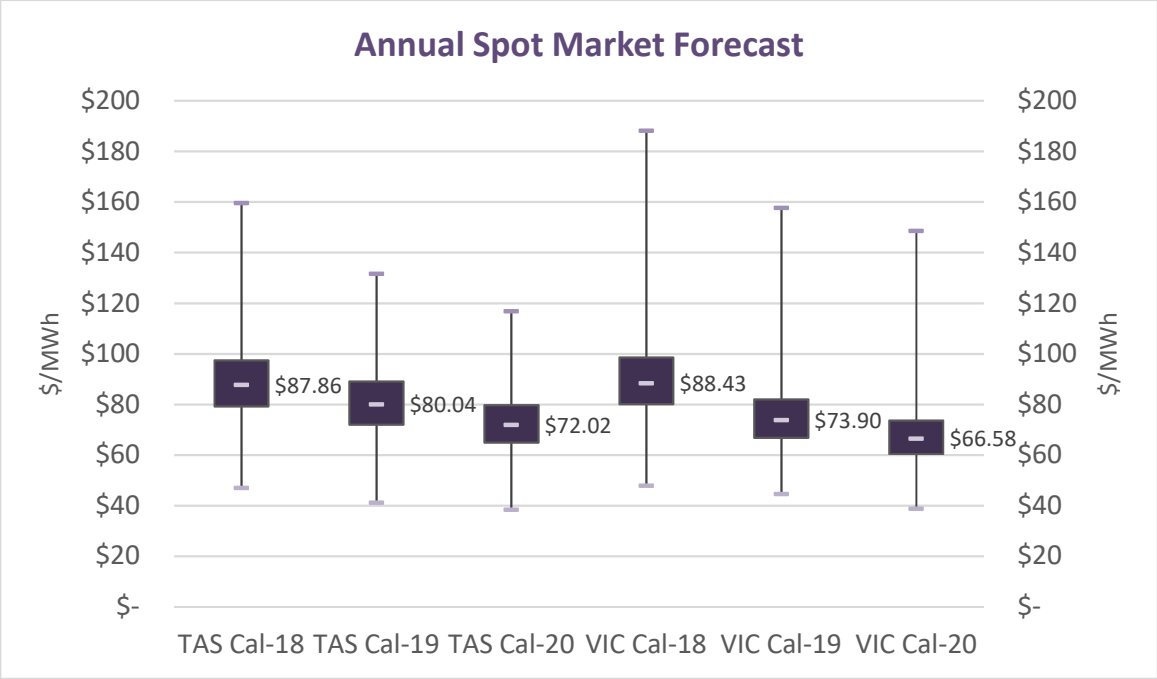
Source: SavvyPlus Consulting BI

The future spot prices obtained from the simulation are represented in the Box-Plot graph below (Figure 32). The graph displays the different series of data in quartiles. The box represents the range between the 25th and 75th percentiles with the median represented by the line in the box. The box therefore represents 50 per cent of the results. The lines extending from the box (whiskers) indicate the upper and lower quartiles.

The forecast for the 2018 Tasmania spot price is for softer prices than 2017 by being around $88/MWh, just slightly below the Victorian price, although the VIC forecast has a much larger tail extending towards $190/MWh. The outlook for Cal-19 and Cal-20 is to soften further due to increase in the supply with Victoria to soften at a faster rate than Tasmanian spot prices. By Cal-19 and Cal-20, Victoria is expected to have a lower average price than Tasmania.

[29] Partially replaces Torrens Island A

Figure 32: TAS and VIC Spot Forecast 2018-20



Source: SavvyPlus Consulting BI

Typically, the 75th percentile of the forecast spot price is a good indicator for the respective forward price. From Figure 33 below we can see significant correlation between the 75th percentile of the forecast prices and the current forward prices. Based on our current view, we would expect Victorian Cal-18 forward prices to more than likely soften further, and for Tasmanian Cal-20 to more than likely strengthen.

Figure 33: Comparison of Current Forward Market Prices with 75th Percentile of Forecasted Spot Prices.

	TAS			VIC		
	Cal-18	Cal-19	Cal-20	Cal-18	Cal-19	Cal-20
Flat Swap	**$ 96.75**	**$ 89.09**	**$ 74.64**	**$ 105.00**	**$ 84.00**	**$ 74.01**
75%	**$ 97.49**	**$ 89.04**	**$ 79.73**	**$ 98.55**	**$ 81.97**	**$ 73.70**
50%	$ 87.86	$ 80.04	$ 72.02	$ 88.43	$ 73.90	$ 66.58

Source: SavvyPlus Consulting BI

3.7 Regulation of Tasmanian Wholesale and Retail Prices

The regulation of wholesale prices in Tasmania is via the requirement that Hydro Tasmania must offer a range of wholesale contract products on standard terms and conditions. This was discussed in Section 2.2.6.

Retail prices for smaller customers (consumption below 150 GWhpa) are set as standing offer prices for Aurora Energy (the regulated offer retailer). Both regulated wholesale contract and retail standing offer prices are determined by the TER.

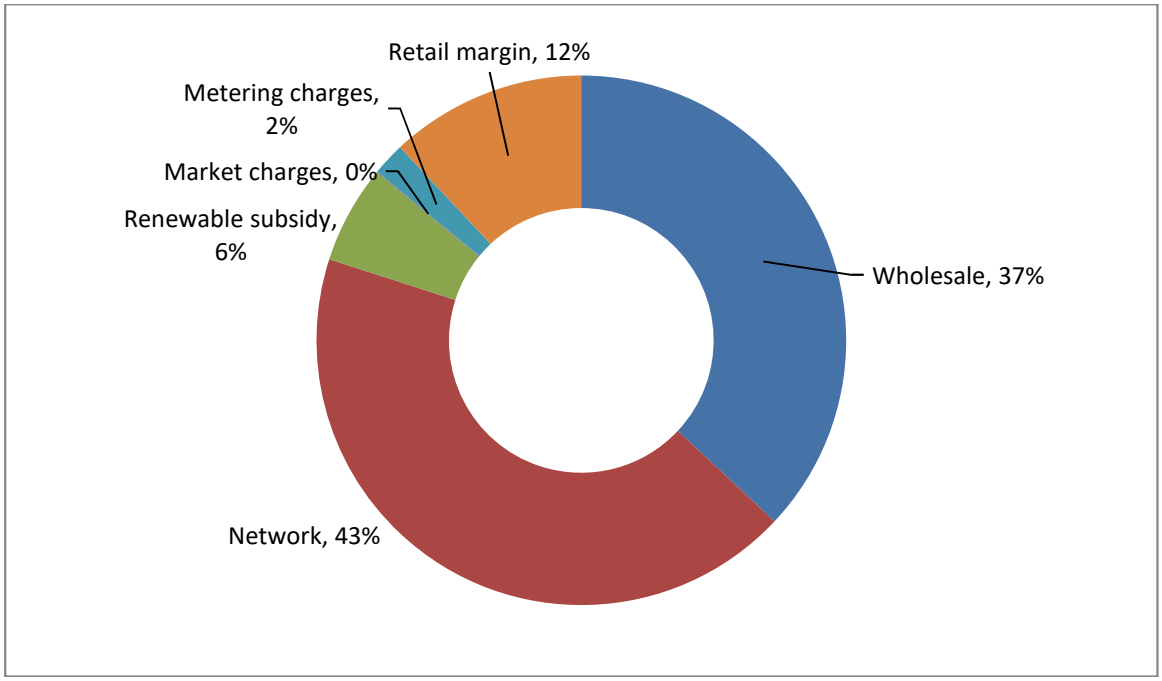
Wholesale prices are an important component of retail standing offer prices. The TER determines the Wholesale Electricity Price (WEP) as a key input to this process and then determines the Wholesale Electricity Cost (WEC) as part of Aurora's Notional Maximum Revenue (NMR) for its annual standing offer prices. Until this year, the WEP has been set with reference to Hydro Tasmania's regulated LFS contract, which is then used along with a load forecast and (distribution and marginal) loss factors to determine the WEC.

Some controversy exists with regard to the TER's use of a point-in-time WEP. Retailers pointed out during the attempted sale of Aurora's retail book that they are unlikely to hedge their exposures by purchasing a single block of contracts at one point in time and that even if a retailer chose to adopt this approach, Hydro Tasmania may not be obligated to contract for such a volume under the volume release mechanism in the Wholesale Contract Regulatory Instrument.

3.8 Impact of Tasmanian Wholesale Prices on Retail Prices for Small Business

Tasmanian wholesale prices have a significant impact on the retail electricity prices of small businesses. As can be seen from Figure 34 below, wholesale costs make up around 37 per cent of the delivered cost of electricity to smaller Tasmanian consumers who are on regulated standing offer tariffs. This includes the vast majority of small businesses.

Figure 34: Components of a Tasmanian electricity bill for smaller customers



Source: Aurora Energy, *Pricing Proposal for Period 2 of the 2016 Standing Offer Price Determination, 1 July 2017 to 30 June 2018*, Figure 1, p. 2.

Moreover, wholesale costs have increased significantly in recent years right across the NEM, including in Tasmania. The reasons for this are principally:

- The retirement of thermal (coal and gas) generation plant (some of it premature), which has seen 6,000 MW of capacity exit the market since 2011/12.
- The dash for renewable energy created by the Renewable Energy Target subsidy, which has flooded the market with new renewable investment and contributed to the exit of thermal plant referred to above. Over the five years to 2017 around 1,800 MW of new wind and solar generation has been added to the market.
- The price and supply pressures in the Eastern Australian gas market, which have impacted the economics of building and operating gas-fired generation. As a consequence, no new gas generation has been built since 2011/12, none is presently committed, and 865 MW has been withdrawn and another 238 MW has been announced as to be withdrawn.

- The uncertainties around the direction of energy and climate policies, which have made it difficult for any potential new thermal projects to secure finance, with none currently committed.

Tasmania has not been immune from these impacts. It is linked to the Victorian wholesale market via the Basslink interconnector and has been more-or-less directly impacted by the closure, in March 2017, of the large (1,600 MW) brown coal-fired Hazelwood Power Station in Victoria. Wholesale contract and spot prices had spiked in anticipation of the closure. Moreover, reductions in capacity, especially in Victoria, have also created commercial opportunities for Hydro Tasmania to benefit from higher prices by exporting across Basslink and within Tasmania through its hydro-electric and wind generation plant.

In terms of regulated standing offers, including those for small business, this would occur through the method of retail price regulation described in Section 3.7, that is, through the use of the regulated LFS Contract to establish the WEP used to calculate Aurora's WEC. Given the large increases in wholesale prices experienced in 2016/17, including in Victoria, this would have resulted in large increases in Tasmanian regulated retail tariffs for 2017/18, including for small business, absent other components of Aurora's NMR. According to the Tasmanian Treasurer:

> *"The Government has been advised that price increases of up to 15 per cent are likely to occur for residential and small business customers on regulated tariffs from 1 July unless action is taken."*[30]

It should be noted, however, that in the past flat wholesale prices in Victoria have helped to keep electricity price increases in Tasmania lower than they otherwise would be. Indeed, the use of the regulated LFS Contract in setting the WEP in Aurora's annual NMR has ensured that flat wholesale prices were passed through to small business customers.

It should also be noted that the 15 per cent price increase referred to by the Treasurer is similar to retail price increases elsewhere in the NEM in 2017/18, which have ranged between 10-20 percent. Nevertheless, increases of this magnitude would have been difficult to Tasmanian small businesses to absorb and may well have placed some of them under financial pressure with flow on economic consequences.

Given recent step wholesale price increases, their flow through into retail prices, the outlook for continued high future wholesale prices, a series of reports highlighting the shortcomings in the NEM retail market and uncertainties around future electricity supply and policy, it is not surprising that high and rising electricity prices are front-of-mind for electricity consumers. Hence, Governments are starting to respond to this situation as well, with the threat of re-regulation a possibility.

In Victoria, a State Government commissioned review of retail prices has recently reported and, responding to recent price increases and concerns about shortcomings in retail competition, has recommended action to place retail electricity pricing under a higher level of regulation and scrutiny than the open market that has hitherto existed in that State.

[30] The Hon. Peter Gutwein, MP, Treasurer, *Electricity Supply Amendment Pricing Bill 2017, Second Reading Speech*, 4 May 2017, p. 2 at http://www.parliament.tas.gov.au/bills/Bills2017/26_of_2017.htm.

3.9 Recent Changes in Tasmanian Government Policy

In response to the significant wholesale price pressures facing Tasmania, the State Government moved in May 2017 to provide small business and residential electricity consumers in Tasmania with relief from the expected retail price increases referred to above.[31] Accordingly, the Government amended the legislation that determines how the TER sets standing offer prices. The amendments allow "the Treasurer to determine an alternative wholesale electricity price if it is deemed that current market based processes will deliver unsustainable increases to regulated tariffs."[32] Henceforth, Hydro Tasmania and Aurora will enter into wholesale contracts at the determined price for the regulated load when this is activated. The Treasurer made clear that the Government "will be targeting an average price increase for 2017-18 of around 2 per cent, consistent with the current Consumer Price Index."[33] He also made clear that these arrangements could continue if future Victorian wholesale price outcomes warrant.

The Treasurer referred to questions that still remain "as to the appropriateness and effectiveness of the current Tasmanian Wholesale Regulatory Framework that seeks to mirror the market movements of the wholesale electricity contract market in the NEM" and announced that the Department of Treasury and Finance would conduct a review of the framework in 2017/18, including consultations with all key stakeholders. It would be beneficial to the longer term interests of small business if this review were as broad as possible so that it also included matters such as the current regulatory approach to wholesale market issues in Tasmania and the future of retail price regulation.

It should be noted that the Ministerially determined WEP in this year's standing offer pricing proposal lodged by Aurora with the TER was $83.79/MWh (8.379 cents/kWh). This compares to $62.092/MWh (6.2092 cents/kWh) for 2016/17 in the 2016 Standing Offer Determination published by the TER, still an increase of 35 per cent. However, significant reductions in distribution charges following an AER review ensured that the annual bills of small businesses on the most common tariff still fell by between 4.1% and 5.7%, depending on their usage profile.[34] Moreover, small business network charges in 2018/19 are forecast to remain relatively flat. If wholesale prices increase further, then the Government would need to intervene again if changes in regulated retail prices are to be kept at CPI levels.[35]

Small business should welcome the Tasmanian Government's decision to amend electricity price regulation so that the full impact of the large increase in wholesale electricity prices is not passed on to them for 2017/18. In taking this step, the Government appears to be acknowledging that it places a significant priority on keeping electricity prices affordable and is responding in a timely way to community angst about rising electricity prices. In our view, this can be seen as an appropriate and legitimate immediate response to the prevailing circumstances facing Tasmanian electricity

[31] At the same time, Hydro Tasmania announced in May 2017 that it had capped wholesale contracts for 2017/18 at the 2018/19 Victorian price, a reduction of about $20/MWh, with potential benefits to market customers who had not yet renegotiated contracts, but not those who had. The Government later announced that it would be providing rebates to those on market contracts who had already renegotiated their deals.

[32] The Hon. Peter Gutwein, MP, Treasurer, *Electricity Supply Amendment Pricing Bill 2017, Second Reading Speech*, 4 May 2017, p. 3 at http://www.parliament.tas.gov.au/bills/Bills2017/26_of_2017.htm.

[33] Ibid.

[34] Aurora Energy, *Pricing Proposal for Period 2 of the 2016 Standing Offer Price Determination, 1 July 2017 to 30 June 2018*, p. 19.

[35] Present indications regarding 2018/19 Victorian and Tasmanian wholesale contract prices are for a level about the same as the current Ministerially determined WEP (see Figure 16 and Figure 17).

consumers, many of which emanate in Victoria and the broader NEM and are matters over which Tasmania has no control but still experiences the impacts of.

Nevertheless, there are broader and longer term implications from the Government's actions that should also be considered by the TSBC and born in mind. These include:

- The Government intervening in a method of determining the WEP that was based on market fundamentals and approaches to retail price regulation adopted in New South Wales, Queensland and the ACT, and ensured that the benefits of a sustained period of flat wholesale prices flowed through into retail tariffs. In the volatile wholesale market it was inevitable that higher wholesale prices would prevail as market conditions changed. It is also quite possible that flat or lower prices could emerge again in future even if this unlikely at present. Appropriate policy and regulatory responses to the problems being experienced by the NEM retail and wholesale markets could change this situation. Indeed, there is some evidence that the market is already factoring in a reduction in uncertainty as early as 2018/19 given the fall in future prices for that year, albeit still at a high level.
- That a close relationship exists between Tasmanian and Victorian wholesale prices and intervention is contrary to this and will not change it.
- A risk of prolonged use of Ministerial Order beyond 2017/18, or the threat of it, if increases in wholesale prices persist or return. Indeed, the Treasurer has already alluded to this as a possibility if the Government believes that wholesale price increases are unacceptably high. This would act as a deterrent to potential new entrants and competition.
- It requires a level of detailed involvement by the Government in retail price regulation beyond the establishment of broad principles and objectives that had hitherto applied and which the Expert Panel warned "raises potential concerns about the actual or perceived level of 'functional' independence that the TER is afforded in making pricing decisions."[36] The Expert Panel went on to stress the importance of complete regulatory independence to the entry of private capital into the Tasmanian market.
- If the Tasmanian Government intends to 'switch' Ministerial Orders on and off as the circumstances suit, it could be perceived as a form of 'forum shopping' based on price outcomes that do not appeal to the Government, further raising the regulatory risks of retailer entry into Tasmania.
- Ministerial wholesale price setting could create a squeeze between wholesale costs and retail prices, which could impact Aurora's financial situation, or alternatively it could squeeze wholesale prices and impact Hydro Tasmania's commercial situation, notwithstanding that the Government says that it has set the wholesale price with reference to Hydro Tasmania's costs (but has not outlined how this was done).
- It can be perceived as interference in Hydro Tasmania's and Aurora's commercial and financial decisions.
- The approach is contrary to the full pass through of higher wholesale prices thus far accepted in other parts of the NEM in the face of similar, or even higher, price increases.
- A future Government may seek to play 'catch up' if wholesale prices fall and this creates an opportunity to claw back some past 'losses' with small consumers being asked to pay higher prices as a result.

[36] Expert Panel, *An Independent Review of the Tasmanian Electricity Supply Industry*, Final Report, vol. 1, p. 64.

- Setting a lower wholesale contract price for the regulated load could open up unintended arbitrage opportunities for other retailers to leverage off and benefit from outside of Tasmania.
- Such interference in the regulatory process raises the risk of a perceived increase in sovereign and regulatory risks by new retailers considering entry to the Tasmanian market, which could further delay retail competition.

The foreshadowed Department of Treasury and Finance review of wholesale regulation will be important in the consideration of all matters to do with future wholesale market regulation in Tasmania, including the Governments price intervention and should consider the costs and benefits, the short and longer term implications and the unintended consequences of intervention.

3.10 Summary of Key Points

Key points to emerge from this Chapter are:

- Wholesale prices are an important component of small business electricity bills as they account for 37 per cent of the regulated small business standing offer price.
- Wholesale prices (2017/18 Flat Swaps) in Tasmania increased significantly from around $40/MWh in mid 2016 to reach a high of around $125/MWh in May 2017. They have abated somewhat since (as have 2018/19 prices) but remain very high.
- Faced with a 15 per cent increase in regulated electricity prices for 2017/18, the Tasmanian Government has recently intervened in the regulatory process to allow it to set the regulated wholesale price by Ministerial Order with the aim of keeping regulated retail price increases for 2017/18 to about the CPI.
- Despite this, the wholesale price in regulated tariffs for 2017/18 still increased by 35 per cent.
- Small business electricity prices for 2017/18 will fall but mainly due to a significant reduction in network charges. If wholesale prices increase again in 2018/19 or beyond, there may be no scope for a reduction in network or other charges to offset these.
- Small business should welcome the impact of the Ministerial intervention in keeping their 2017/18 retail electricity prices to CPI type increases.
- Notwithstanding this, there are broader implications from the intervention that go beyond its immediate impacts on restraining increases in small business electricity prices. These should also be considered by the TSBC in developing its position on Tasmanian retail and wholesale electricity prices, including that intervening may have added to the already considerable barriers to retail competition in the Tasmanian electricity market by increasing sovereign and regulatory risks and may have other unintended consequences.
- The forthcoming Department of Treasury and Finance review of wholesale price setting within Tasmanian retail electricity price regulation announced by the Treasurer is an opportunity for the TSBC to advocate further on wholesale price issues. This review would be especially meaningful to small business if it included consideration of wholesale contract and retail price regulation, as well as broader considerations as to the costs and benefits of wholesale and retail price regulation.
- The competitiveness and performance of the NEM wholesale and retail markets is under intense scrutiny due to extraordinary electricity price pressures and revealed shortcomings

and uncertainties in the operation of these markets. Significant reform is required to overcome these shortcomings and it would be in Tasmania's interests (given its important links to the Victorian market in particular) to support such reform. This would also open up reform opportunities in Tasmania.

- Reliance on a well functioning competitive market rather than Government regulation and intervention is likely to be most beneficial to Tasmania's small business sector in the longer term. This provides the best path to the delivery of sustained price and other market benefits to electricity consumers. However, to achieve this and for Tasmania to advance towards a competitive market requires the NEM to deliver more competitive wholesale and retail electricity markets that Tasmania can leverage off.

Following stakeholder consultation on this Preliminary Report during September, our recommendations will be developed and delivered in the Final Report, due in October 2017.

* * * * *