

ISSUE 1718

“In Support of Progress”

# Newsletter

Date: 14 July 2017

## Energy – the BIG issue

### Energy

The energy market is extremely complex, and it is almost impossible to get any meaningful overall view and data as to what exactly is happening. In that regard I am deeply indebted to Marc White of Goanna Energy Consulting, who beyond all others has been able to lift some of the fog surrounding this topic.

In the presentation below, which follows from the comments made in the previous newsletter, it is noted that every state has a different set of circumstances to deal with, in some way helped, and in other ways hindered by the physical interconnection of the network and by the financial operations of the national energy market, or NEM.

Our power bill is made up from four different key operating components, being generation, high voltage transmission from the generators to the substation, distribution ie the poles and wires we see in the streets, and finally the retailer, who sells us the power. Additionally, there are now mandatory renewable energy charges

#### THE GENERATOR

Large-scale turbine generation is driven by steam (thermal stations) or water (hydro-electric stations). Smaller-scale turbines are driven by wind.

In Tasmania, the major supplier of power is Hydro Tasmania, using hydro power stations, a backup gas-fired generator (the Tamar Valley Power Station, and the BassLink cable, over which it exports and imports power. The decision to import or export is driven by price signals in both the Tasmanian and Victorian market. These power operations provide the inertia, spinning reserve or “grunt” that any system needs to provide stability. It's equivalent to water and the water pressure in your water pipe at home.

The Hydro also owns two windfarms, at Woolnorth and at Musselroe, which provide around 10 percent of power into the grid annually, supported by the “grunt” of the other hydro stations. Other wind power suppliers are now seeking to enter the market, and like Musselroe and Woolnoth, will be relying on the “grunt” of Hydro's generators to sync in with the grid.

Elsewhere in Australia, the supply of electricity has traditionally been from coal-fired generators (76%), with an increasing supply of gas-fired generation (12%) over the last 20 years or so. Coal has been a cheap and reliable source of power, but in recent times, for purely political reasons associated with emissions concerns, it has become problematic, and those power stations are being phased out, even though there is no need to and there is no replacement to their operation.

The development of new technology HELE (high energy low emission) plant has reduced the level of emissions by half, but still suffers in the political agenda from being coal –dependent. And that is a shame!

Gas, which is plentiful throughout Australia, has a more lucrative market overseas, and, plentiful as it might be, the price of gas supply has climbed markedly on the Australian East Coast from \$4/GJ to \$10/GJ and beyond, in line with import parity pricing. Recently the Prime Minister invited the gas producers to be more cognizant of domestic needs. Best of luck with that one, PM!!!

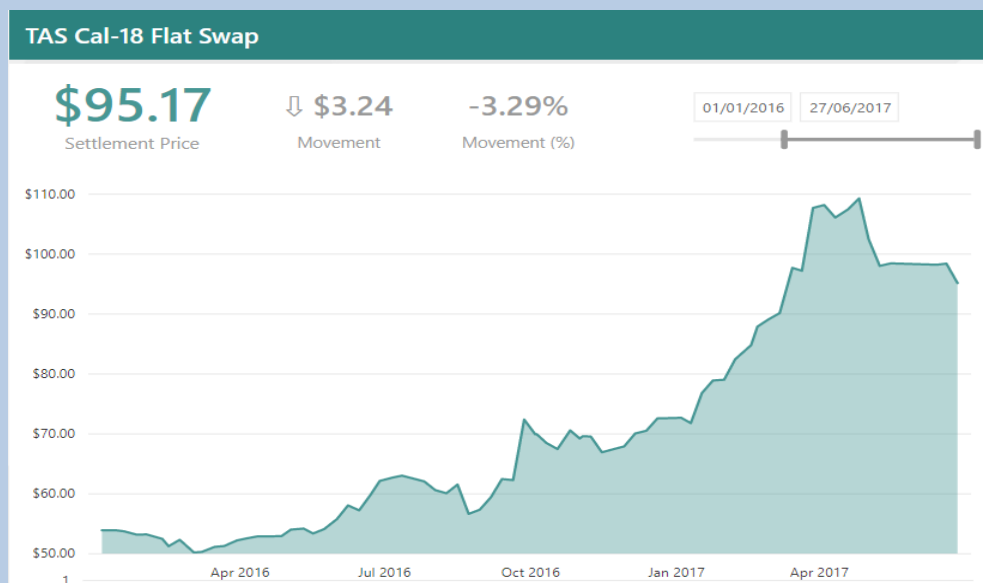
South Australia has led the charge down the renewables pathway, is now very reliant on wind power, and has little in the way of backup other than through interconnectors into Victoria. South Australia now has the most expensive electricity in the country.

Notwithstanding certain safety and cost concerns, homeowners are also installing solar panels, and some even seek to sell their surplus into the network. Wind and solar suffer from intermittency, and much discussion is presently occurring regarding an efficient and effective battery back-up facility. Although it is recognized that the cost of such home installations is coming down. It will need to as at this stage the payback is over 8 years.

There is still a long way to go before they can provide the "grunt" necessary to keep a power network going. South Australia is now embarking on a massive 100MW battery storage facility in an effort to ease its reliance on other power sources, but the jury is still out regarding the effectiveness of such a facility over any extended period of time

The transfer from reliable coal to more expensive gas and the risk associated with intermittent wind (presently around 5% of overall supply) is complicated by the fact that installed wind generation capacity is only around 30-40% effective at best. In other words, 3 MW of installed capacity will provide around 1 Mw of power.

Wind and solar supply has caused generation prices to soar in mainland states. Tasmania is less reliant on such fluctuating supply, and as such the price should be more stable. However unforeseen events such as a drought and/or a break in the cable can make for a far more volatile generator price.



Added to which is the requirement for a contractual arrangement to be put into place regarding gas supply to the Tamar Valley Power Stations, which does not look likely any time soon. TasInc suffers from this impasse.

### THE TRANSMITTER

Transmission in each state is a monopoly business, and is in the hands of separate companies under the watchful eye of the Australian Energy Regulator. Transmission companies must apply to the regulator for any price increases.

In Tasmania, the manager is TasNetworks, and over the past year the costs have actually fallen. Transmission across state borders is managed by separate interconnectors, who provide the physical asset over which generators buy and sell their product. In Tasmania that company is BassLink, which owns the undersea cable.

### THE DISTRIBUTOR

The distributor, again a monopoly, provides the poles and wires network, which retailers use to get the power to you. Again in Tasmania, that company is TasNetworks, who took over the assets from Aurora Energy. We pay a charge for the provision of that network, irrespective of how often or in what manner. And so we should. Together, the network and distribution charge has fallen over 20%.

### THE RETAILER

Finally there is the retailer, who buys energy from the generator (via the NEM) and Renewable Energy Certificates and sells it to us.

In Tasmania that company is Aurora Energy. Most people in Tasmania are on a regulated tariff, and Aurora needs to have that tariff approved by the Tasmanian Economic Regulator. The government has actually intervened to ensure that any price rise does not exceed 2%. Larger users (those who consume over 150,000 kWh per annum, have to enter into an open market contract with a retailer, and Aurora is but one company competing in this market. Recently, there has been concern expressed that these contracts on renewal have almost doubled in price. They are still generally lower than the regulated price, but the sudden nature of the increase could put many larger users in some financial difficulty, create a competitive disadvantage, and for some it could even mean closure. This should, simply put, not be allowed to happen.

These increases are the direct result of increasing demand in Qld and NSW, the closure of some 5,800MW of coal-fired capacity (eg Hazelwood in Victoria), increases in the cost of natural gas and the uncertainty of supply and price, occasioned by the loss of reliability in the national network and the price of power over Bass Strait.

Government interference and constraints placed on supply options has been a direct cause of this uncertainty. Australia once enjoyed cheap and reliable power – no more. Sub-national (ie State) governments have placed their own peculiar constraints which have only made the task that much harder. Some states have imposed limits on on-shore gas exploration, South Australia has created a renewables target that has led to an extremely unreliable grid, and Victoria has encouraged coal-fired stations to close before their time.

I fear we have sacrificed a sustainable competitive advantage in power production, reliability and price on the altar of some illusionary goal of planetary salvation. Whatever Australia does in the climate change debate to lower emissions will make not one jot of difference to overall world-wide emissions. Thus, all actions made by governments, state and federal, irrespective of the reasons given, should be seen in this light.



We need a national approach to end the chaos. What are the chances?

This newsletter is supported by **Tasman Management Services**