



The Sustainable Engineering Society

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FUTURE ENERGY MARKET CONSIDERATIONS

Graham Davies - November 2013

There has been much debate in the electricity industry around renewable energy targets (RET), a price on Carbon, 'free loading' on the grid by regulators and the large 'gentailers' (generators and retailers).

It was reported by a large gentailer that Australia had "already nearly met" its LRET which is 41 TWh. With generation in 2012 at around 29 TWh the gap is closing and achieving the RET is possible, however the rate of new installations is slowing, and comments such as 'nearly there', or that the RET of 2020 be pushed backward are not acceptable.

A number of corporations have also referred to the home PV installations as 'free loading or free-riding' off the grid. Although it appears that the argument has some validity, it is possibly more a case of gentailers looking to deflect attention from the fossil fuel industry and its associated externalities (costs such as emissions, rehabilitation, dumping which are not accounted for in the price), or that they are feeling expansion pressures because electricity demand has dropped.

According to the CEC, "The growth in peak demand – those few times a year when demand for electricity is the highest (usually the hottest days in summer) – is a major factor that has driven up energy costs. The Australian Energy Market Commission estimated in 2012 that 25 per cent of retail electricity prices were derived from peak demand events that made up less than 40 hours per year". Peak demand relative to average is highest in SA, which also has the highest penetration of Solar PV. Given that the bulk of costs are attributed to the network which has to cater for peak demand, PV in fact helps to reduce this peak, particularly if smart metering and energy storage is added to the grid, and thus would in turn save on new and upgraded network infrastructure costs. A carefully managed and balanced distributed generation would significantly reduce the costs associated with 'poles and wires'.

There are additional factors to consider such as who is using electricity at the time of peak demand. We live in a world of supply/demand, yet in this instance it is considered too complicated to pass on the real costs. The spot price in the NEM ranges from -100c/kWh (and lower) to \$1250/kWh, whereas the consumer typically pays between 30 to 35c. This disconnect does not penalise people using power at peak times, and if this was known and understood and the user paid at least some proportion of the high peak cost, then the peaks would drop. In this respect, users of reverse cycle airconditioning (which is the major cause of peak demand) could be construed as 'free-loaders'.

However by far the biggest issue is that externalities such as GHG emissions, health costs associated with pollution, total rehabilitation of the land, fauna, flora and water table (in the case of CSG) are largely off the balance sheet. These costs will ultimately be borne by all of us, if the large generators do not pay the costs. The current price on carbon does not fully reflect the true cost which is estimated to be between \$40/t to \$120/t. Gentailers have suggested that a price of \$40-\$60 is needed to decarbonise the economy. Based on this, it appears that it is the generators that are 'free loading'.

The SCER, AER, and AEMC are in the process of reforming the current NEM. SENG would be keen to see they take a systems approach, have a clear objective, gather the relevant facts, produce detailed costs of the electricity price makeup, consider future demands and trends, carefully analyse all factors including a risk assessment of anthropogenic

climate and its associated costs, before making a deliberation. Comments around free loading and delayed RETs are not helpful in mitigating against the risks of anthropogenic climate change.

In addition, SENG would like to see increased support for all renewable energy and particularly that energy storage be promoted as this is essential to enabling greater penetration of most renewables. In addition to this, electric transport should also be promoted in a further move to displace fossil fuels.

It is only when an holistic approach is taken that a meaningful set of regulations can be developed. We hope that the politicians and regulators have the wisdom to realise the magnitude of the decisions they face and have the foresight to make the right decisions for a sustainable and desirable future.

We live on a finite sized planet with an increasing population, increasing consumption and increasing waste generation driven by the desire for endless economic growth. Anthropogenic climate change is just one negative symptom of our unsustainable society. The physical laws of nature will simply not let this continue indefinitely and the energy market needs to take appropriate action now.