SUSTAINABILITY OF ENERGY SUPPLY AND RESOURCES IN NSW

Name: Mr Stephen Bows

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Peer-to-Peer Trading Opportunities

Summary

Individual energy 'prosumers' (producers and consumers) currently have no ability to trade our energy surplus to other members of our community. Will the NSW State Government consider supporting the Decentralised Energy Exchange (deX), as the ACT and VIC governments have already done, and provide advice to individuals as to how they might access it?

Background

I am a resident of North Manly, NSW, and I am lucky enough to own a house with a large, unshaded corrugated metal roof. It is a two-storey house in an area where most houses are single storey, and it is situated on the brow of a hill. All of these factors have made it the perfect property to install solar panels – indeed this is one of the reasons that I bought it 3 years ago.

I have installed 10kW of solar panels (31 x 320W), along with 2 x 10kWh batteries which are installed next to the inverters on the side of the house. My inverter provides me with information about my consumption and production data, which I cross-check against my smart meter to ensure that it is accurate (it is).

Solar Production Data

In 2018, I produced **13MWh** of electricity, and consumed **15.65MWh**. This is a net consumption of **2.65MWh.**

However, despite my investment in 20kWh of battery storage, I have been unable to entirely prevent export to and import from the grid. I **exported 2.6MWh** during 2018 (when my batteries were full), and **imported 5.25MWh** (when my batteries were empty), which nets to the 2.65MWh noted above.

A similar story is unfolding for 2019. In the eight months of the year so far, I have produced **9.41MWh**, and consumed **10.47MWh.** A net consumption of **1.06MWh**, which masks an export of **1.98MWh** to the grid, and hence an actual consumption figure of **3.04MWh.**

Inefficiencies of Grid Export/Import

I receive around $0.10 per kWh as my feed-in tariff, whereas I pay between $0.18 and $0.40 per kWh to import electricity back again. I understand why this is – there is a transmission loss rate of around 8-15% (from the limited research I have done) between power plant and consumer, which I presume is doubled if the same electricity is then drawn back again by the consumer.

I also understand (although I am no expert) that transformer infrastructure is not particularly well designed to take large loads of electricity flowing back from the consumer, as opposed to towards the consumer.

And then of course, the retailer needs to make money after all of these losses. That's fine, we live in a market economy.

Peer-to-Peer (P2P) Trading

My neighbours on either side do not have the same ability to install panels on their houses. One has a South-facing roof, the other has tiles which make mounting panels difficult. Rather than sending my 2.6MWh (2018) and 1.98MWh (2019) to the grid, I would really like to be able to supply this 7-8kWh per day to my neighbours to help reduce their energy bills.

As far as I can discover, P2P trading is not legally possible in NSW. There is the tantalising prospect of the Decentralised Energy Exchange (deX), funded by ARENA and others, which promises to create a digital marketplace, using blockchain, for the sort of energy I am producing. This seems to be supported by the ACT and VIC state governments, but I can't see any mention of it being available in NSW. Similar projects are well advanced in Denmark and Germany, so I doubt there are any major technological challenges that haven't already been addressed.

Other Opportunities

If P2P and decentralised energy trading was legally possible, and accessible by the ordinary 'prosumer' such as myself, it would be possible to embrace a whole range of other opportunities for community-based energy models, leveraging a central property with a large roof space to supply the surrounding community, such as:

- Schools – where the panels might be owned by a consortium of parents, and can be used to supply neighbouring properties to the school during holidays.
- Industrial estates – where the panels might be owned by members of the surrounding community, and could be used to power both industrial and residential properties

I have been personally involved in examples of both sorts of schemes, and I know that it is not the economics of the scheme that is the problem, but rather the legal and other bureaucratic hurdles placed in the way.

Recommendations

Australia is blessed with an abundance of solar, wind and other renewable resources, and has a large number of community-minded entrepreneurial thinkers.

Rather than spending millions of dollars on centralised energy assets, which are inefficient transmitters of energy to such a large country as Australia, should we not see what help we can give to 'prosumers' in establishing local community-based micro-grids?

Supporting the Decentralised Energy Exchange (deX) and making it available for use by ordinary individuals would be a great start.

It seems a perfect example of government delivering more value to taxpayers by doing less – but by being smarter and more strategic.