



MHC’s bold idea on solar premium feed-in tariff reform gaining traction in Queensland

By Ryan Wavish and Lars Karlbom

Emerging Issue: Following our article in the last edition of QSI on **bold ideas to overcome the barriers to storage**, MHC was delighted to see reports in Queensland’s Sunday Mail on April 17th, 2016 that the Queensland Government was considering a voluntary battery buy out scheme where the 238,000 customers on 44c/kWh premium feed-in tariffs would receive a rebate on installing a battery storage system in return for agreeing to cancel the Solar Bonus Scheme early. Energy Minister, Mark Bailey, stated: “If the policy setting is right, there will be benefits for consumers and for the networks.”

To keep the momentum rolling on this idea, we have provided more details below on our analysis of this policy option, including the policy impacts in the Queensland and South Australian markets.

Background

Premium feed-in-tariffs (PFiT) have been a very effective way of incentivising the uptake of solar PV in Australia, with approximately 700,000 customers across the country benefiting from the scheme to date, which translates to almost 50% of residential customers with solar PV customers.

Figure 1 shows annual solar PV uptake in each state with key FiT changes also highlighted, which clearly shows the effect PFiT have had on investments.

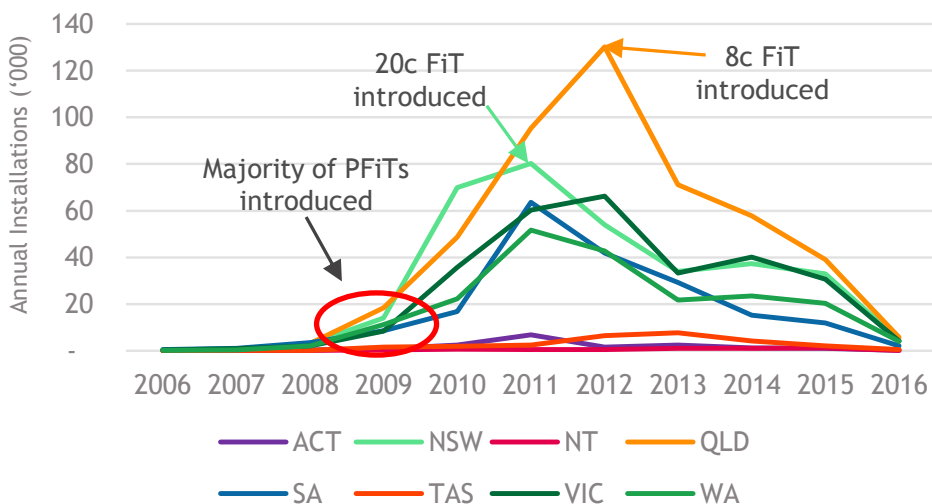


Figure 1: Solar PV uptake and FiTs

Additionally, many of these tariffs do not expire until 2028 or later, providing the customer with a long-term, guaranteed revenue stream.

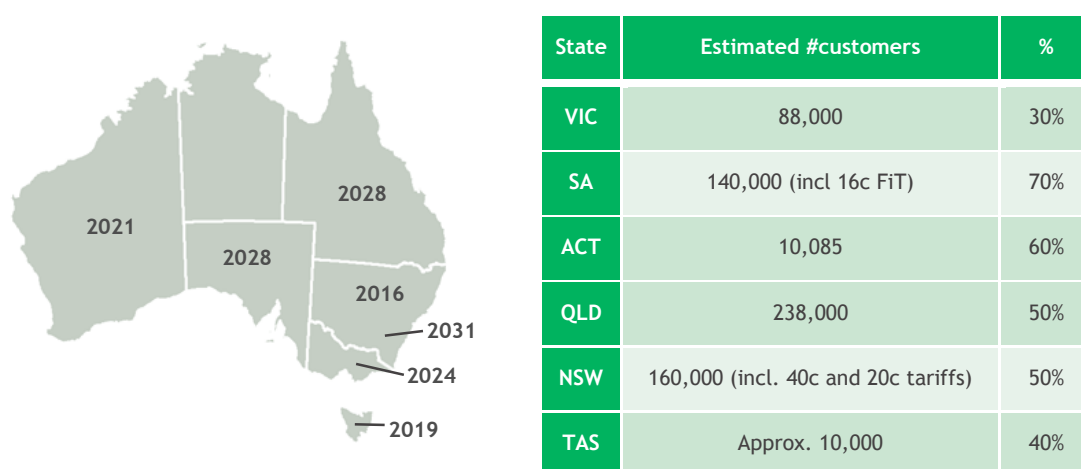


Figure 2: PFiT Expiry and customers (Source: MHC Research)

These PFiT have been a great added incentive to encourage uptake of new technologies and very profitable for enrolled customers, but represent a relatively expensive way to achieve benefits (e.g. emissions reductions), provide limited network support functions and represent a significant future cross-subsidy.

PFiT further provide a disincentive for the uptake of alternative technologies (e.g. storage) in Australia as they create a trade-off for the customer between charging their storage system and exporting to the grid to earn a revenue.

This effectively removes a large segment of potential customers interested in storage solutions from the market. As many of the customers on PFiT were the ‘early adopters’ of solar PV, it is not unreasonable to assume they would also be interested in new storage technologies were it not for the barrier of forsaking PFiT revenue.

The question is: is there a better way to utilise the future cash flow of PFiT that will provide benefits to a wider set of stakeholders?

Restructuring PFiT to offer a storage incentive

Providing an option to restructure the existing PFiT subsidy to a payment which contributes to the financing of a storage solution could produce something of a win-win, as storage has the additional benefit of enabling reduced network expenditure (by reducing the technical impacts of solar PV and peak demand), hence potentially putting downward pressure on electricity prices. This subsidy could be structured as a contribution towards the upfront storage investment, as an annuity payment or tariff discount.

The graph in Figure 3 represents an example customer with a 3kW solar PV system. It shows the indicative breakeven upfront cost of a storage system under different tariff structures and, with and without a FiT payout (upfront payment). It again highlights the

significant disincentive provided by current PFITs as well as the importance of more cost-reflective tariffs in incentivising storage uptake.

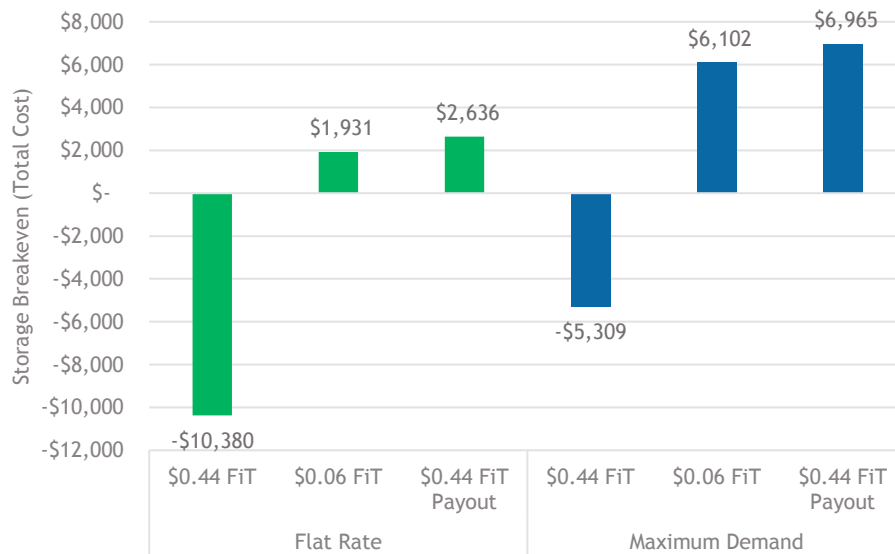


Figure 3: Storage break-even under different tariffs and PFIT payout (Queensland) (Source: MHC Analysis)

In addition to providing more incentive for the uptake of storage, restructuring the PFIT also has the potential to remove the apparent cross-subsidisation under the current scheme.

For example, in South Australia (SA), PFITs equal to at least \$0.44/kWh for exported electricity were introduced in 2008. The scheme was wound up in 2011, but by then approximately 70,000 customers with an installed capacity of about 200 MW had signed up.

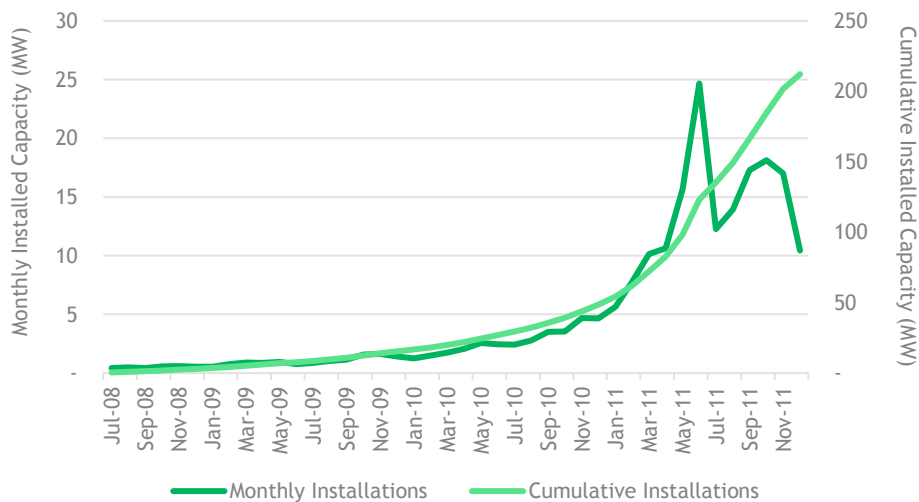


Figure 4: Solar PV Uptake SA Eligible for PFIT (Source: APVI)

These customers are set to receive revenue from the PFIT until 2024, which represents a significant cross-subsidy from remaining SA customers, who fund the scheme. Initial

analysis undertaken by MHC indicates that these payments could equal approximately \$649 million over the 16/17 - 27/28 period.⁽¹⁾

		% of Electricity Exported				
		30%	40%	50%	60%	70%
Panel Degradation	0.5%	\$416	\$554	\$693	\$831	\$970
	0.8%	\$403	\$537	\$671	\$805	\$939
	1.0%	\$390	\$519	\$649	\$779	\$909
	1.3%	\$376	\$502	\$627	\$753	\$878
	1.5%	\$363	\$485	\$606	\$727	\$848

Table 1: PFiT Value Sensitivity Analysis (\$ Million, Nominal) (South Australia) (Source: MHC Analysis)

Assuming 50% of the future PFiT obligation is paid out as a storage subsidy and the rest of the PFiT is cancelled, this could represent an annual bill saving for non-PFiT customers of approximately \$35 per customer.⁽²⁾

This represents an initial estimate and there are a number of factors that would impact the economics and structure of the proposed FiT payout, including:

- Solar PV system size and capacity factor
- Solar export to self-consumption ratio
- Payout timing
- Assumed percentage of the buyout
- Location (and associated solar resource)
- System degradation and O&M.

These are all sensitivities that would need to be further considered when developing a PFiT payout, as the economics of the payout would be expected to differ from customer to customer. Developing an online tool for customers to use their own data to estimate the benefits from a PFiT payout to them would be an appropriate first step.

Further refinements could be made by working with network providers to capture the benefits storage could deliver to the network, which could then be incorporated to provide the customer with a more attractive PFiT payout.

⁽¹⁾ Based on a capacity factor of 0.15, assumed exports of 50% of electricity generated and a 1% annual panel degradation (nominal value not adjusted for inflation)

⁽²⁾ Based on 850,00 SA electricity customers, 70,000 PFiT customers 'opting in' to the offer, and a storage subsidy equivalent to 50% of the future PFiT obligation

This analysis suggests restructuring PFiTs is a relatively low-risk approach to remove an existing cross-subsidy and provide an additional incentive for an emerging technology that can provide wider benefits to the system, and should be carefully considered by policy makers.