



**Save Solar Tasmania
and
Alternative Technology
Association**



Feed-in tariffs for Tasmania

A joint submission in response to “Feed-in Tariffs: Transition to Full Retail Competition – Issues Paper”

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1 Overview

Summary

The Australian electricity industry faces many challenges in adapting to changed circumstances, and consumers often bear the brunt through higher energy bills. The current approach taken in Tasmania is focussed mainly on the issue of retail competition, and ignores the state's enormous potential for leading the way in distributed and renewable energy generation. With this mindset, solar PV is seen as a problem rather than as a valuable part of a wider transition to affordable, sustainable energy.

The Issues Paper released by Treasury and the Government as part of their review of feed-in tariff arrangements has consistently overstated the cost of the current scheme, in an apparent attempt to create division between today's solar owners and other consumers by claiming that there is inequity and high cost to consumers without solar. The Issues Paper ignores or misunderstands the workings of the energy market, and belittles the material contributions that the domestic solar PV industry makes to Tasmania.

In this Submission we outline the inaccuracies and omissions in the Issues Paper and summarise the many benefits of continuing to support an active solar industry in Tasmania.

On our estimate, the total cost of continuing the current 1:1 feed-in tariff for consumers with solar installed before the end of 2013 is, at most, \$5.28m in 2013-14. This is less than 0.4% of Aurora's turnover of over \$1,400m per year. When considering the broader market benefits of distributed solar energy, the actual net cost to other consumers is considerably lower still.

As well as setting a fair return for future solar owners, the 12,500 households who have already installed solar PV, and those with plans to do so in 2013 before the current feed-in tariff ends, need to be given a fair deal. They have invested millions of dollars of their own money with the reasonable expectation that feed-in tariff arrangements would be in place for some time. In other states, premium feed-in tariffs have been contractually locked in for up to 20 years from the installation of their systems.

We urge the government to ensure that the broader benefits of distributed renewable energy generation are taken into account both through the determination of a future feed-in tariff and through other complementary measures.

Recommendations

- The Terms of Reference for a Tasmanian Economic Regulator (TER) determination of future FiT, in keeping with the National Electricity Law, needs to be framed consistently with the National Electricity Objective and therefore be based on "the long term interests of consumers with regard to price" rather than the current focus on "the net financial benefit to retailers".
- Proposed amendments to the Terms of Reference for a Tasmanian Economic Regulator determination of future FiT are at Appendix 1.
- There are sound public policy reasons for supporting the development of small and medium scale renewable energy in addition to the direct financial benefit to electricity consumers. The government needs to implement measures complementary to the FiT to encourage this development.
- We support the proposed provision of the current 1:1 tariff for existing installation being locked in for three years until 31 December 2016 as a minimum requirement.

- Further, this should be extended to five years from the date of individual connection for those who connected in 2012 or 2013.
- These arrangements should apply for all consumers who pay a deposit for a PV system before 31 December 2013.
- Transition arrangements are needed to prevent the solar installation businesses being unduly impacted when installations grind to a halt after 31 December.
- From 2014, the fair and reasonable feed-in tariff should apply to projects of up to 100 kW capacity to support commercial, community and on-farm projects who are otherwise unable to sell energy for a reasonable price on the energy market due to the many barriers to entry for such systems. As there is no net cost to other consumers for a fair and reasonable FiT there is absolutely no impact on other consumers in raising the FiT eligibility to 100 kW.
- The implementation of a metering solution needs to be resolved so that all solar PV owners are able to use the electricity they generate to offset concurrent consumption on all tariffs, not just tariff 31. In keeping with the National Electricity Rules, this will require government to direct Aurora to use specific metering solutions. Low- or no-cost solutions are available to fix this problem. Importantly, fixing the metering problem for existing customers will materially reduce the cost of the FiT during the three year transitional period as existing consumers will effectively be sending less energy to the grid.

Background

At the moment, Tasmania has a feed-in-tariff (FiT) arrangement that credits the full retail price (27.785c/kWh) for electricity fed back into the grid from small (<10 kW) renewable energy generators. This is most commonly used by household rooftop solar photovoltaic (PV) installations but also applies to commercial premises and other technologies such as small hydro installations on farms. This is a relatively informal arrangement offered by Aurora, the state-owned energy retailer.

The Tasmanian Government is currently implementing reforms to the electricity industry which will result in the retail activities of Aurora being disaggregated from their network operations and the customers sold to two private retailers.

Following extensive public pressure the Government has released an Issues Paper on FiT arrangements and called for comment by 7 June 2013. New arrangements, including legislation, need to be put in place before 31 December to ensure that new retailers are required to offer a reasonable FiT to households that have, or intend to install, solar PV (as well as other renewable generation).

2 Discussion of issues

The need for stability for consumers and the solar PV industry

Domestic scale solar PV has had a rocky path nationally with constant changes to state and federal policies resulting in a boom and bust cycle that is not conducive to acceptable installation quality or stable industry growth and development. Uncertainty about future FiT arrangement for Tasmania has already seriously curtailed the solar PV installation business, with many installers reporting cancelled orders.

A clear government announcement is needed now about the eligibility of systems installed or ordered before 31 December 2013 so that consumers know where they stand and the industry can continue to operate successfully in this transition period.

Some form of tapered withdrawal of the existing 1:1 tariff also needs to operate after 31 December if the FiT rate is significantly lowered in order to prevent the solar installation industry grinding to a halt after that date.

Governments in other Australian states have provided certainty for consumers prior to reducing feed-in tariffs by locking in contracts of up to 20 years from the date of installation. As the Tasmanian government has previously lacked a policy on feed-in tariffs, the only reference point that many consumers with solar today have for the duration of the feed-in tariff is Aurora's five year agreement for grid connection.

It is not reasonable to expect consumers to be aware that this connection agreement is different from an agreement to buy energy for five years. Further, some consumers would have reasonably assumed, in the absence of government policy, that the 1:1 tariff would be available indefinitely.

Hence, the availability of the 1:1 feed-in tariff should be provided for five years from the date of connection, and these arrangements should apply to all consumers who pay a deposit for a PV system before 31 December 2013.

Cross subsidy issues

The most persistent, and in many cases ill-informed, arguments around FiTs concern the belief that solar PV owner are always heavily and unsustainably cross subsidised by other consumers. This is sometime presented as a cross-subsidy from those who don't have PV to solar PV owners and at other times as a subsidy from the poor to the wealthy. While it is true that premium schemes in some other states (particularly Qld and NSW) have incurred significant costs that have impacted other consumers, these are very different situations to Tasmania, as they involve premium FiTs at higher than retail tariffs which are locked in by contract for in some cases 20 years. Tasmania has never had such a premium (above retail) tariff, and such long contracts are not being considered here.

The term 'middle class welfare' is often used glibly in reference to solar incentives. The reality is that solar power tends to have least penetration in very low and very high-income demographics, but a number of other, more significant, factors come into play.

We have compared the uptake of solar PV in Tasmania with household income at the local government area (LGA) level using figures supplied by Aurora and the ABS statistics on household income (ABS 2012) – see Appendix 2. As can be seen in Figure 1, there is no significant correlation between income and the uptake of solar PV, if anything the trend line is slightly downwards (ie wealthier areas are slightly less likely to install solar PV).

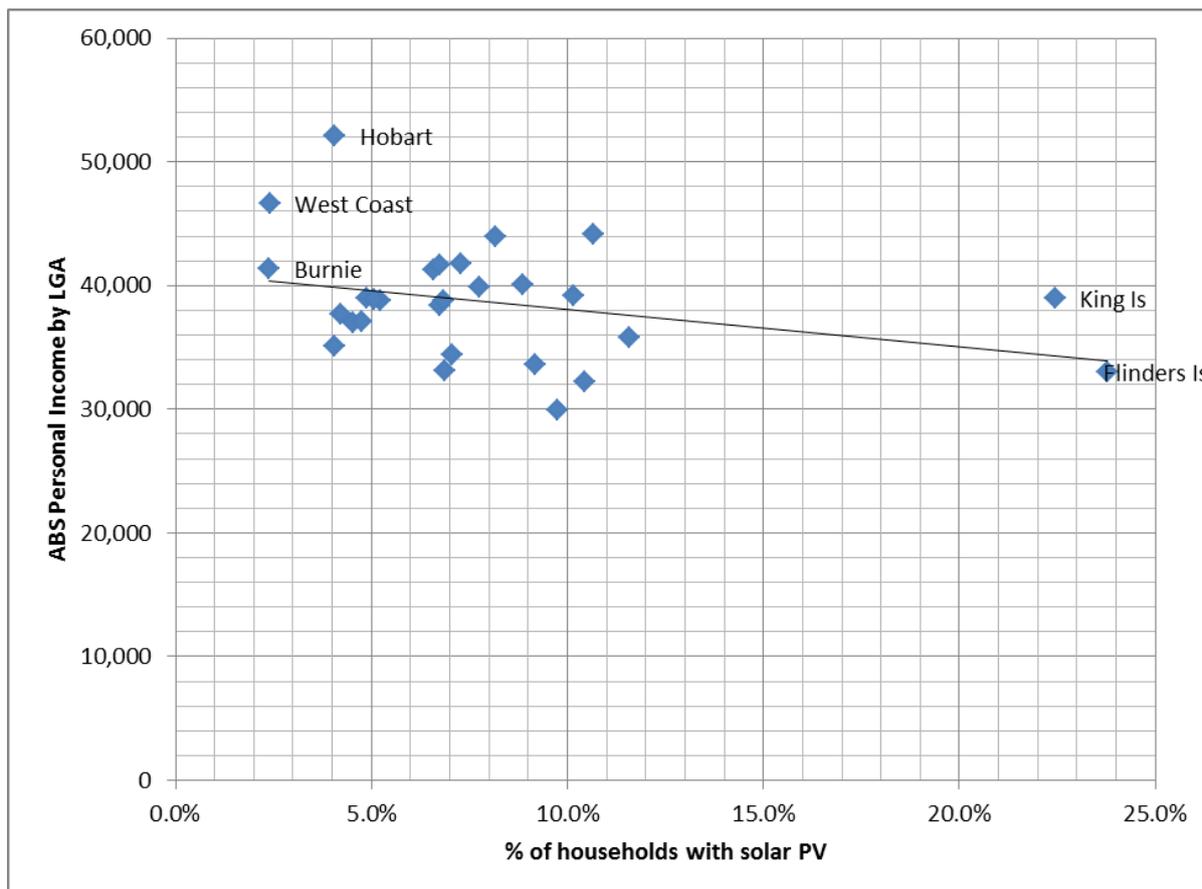


Figure 1: Percentage of Tasmanian household with solar PV by income at LGA level

This Tasmanian analysis confirms national figures with similar findings conducted by the REC Agents Association: “A broad range of communities have accessed solar under the RET scheme and the ... figures explode the myth that the RET is supporting metropolitan middle class welfare” (quoted in Parkinson 2012).

In view of this evidence it is incumbent on those who make the argument to the contrary to provide evidence to support their assertion.

Many pensioners, retirees and other low income households in Tasmania have invested in solar with the deliberate purpose of making their electricity bills more affordable, and receiving a reasonable payback. These lower income households will be disadvantaged by a reduction in the feed-in tariff.

Allocation of network costs

The ‘cross subsidy’ argument sometimes take the form that because solar PV owners are generating more of their own electricity, they are not ‘pulling their weight’ because they contribute less to network costs and that this puts up costs for others.

It is true that a large proportion of network costs are fixed and that these costs are currently mainly recouped through network charges based on consumption. Problems are starting to emerge with this approach as a result of reduced consumption of electricity. There are a number of factors behind this reduction, including reduced economic activity, implementation of energy efficiency measures, reduction in consumption in response to price rises, as well as the contribution of distributed generation such as solar PV.

This is a significant challenge for the electricity industry generally and is sometime referred to as the death spiral – consumption goes down as cost go up, which in turn encourages less consumption and

more conservation and local generation, further raising costs (see for example Nelder 2013, Parkinson 2013). However solar PV is only one small part of this much bigger problem., Network businesses need to develop new business models to survive when demand is not increasing.

It is inaccurate and disingenuous to selectively blame the problem on solar PV. It is no more accurate to accuse solar PV owners of being subsidised because they buy less electricity than to say that people who put in insulation or buy energy efficient appliances are being subsidised by those who don't.

It is worth noting that a hypothetical Tasmanian solar PV owner who bought **no** electricity from the network would still be paying \$430 per year to be connected to the network¹. Tasmanian fixed supply charges are generally higher than in other states - and most Tasmanians incur multiple fixed charges because of their connection to more than one tariff (Electricity Industry Panel 2011).

More network costs being recovered through fixed supply charges means the real, material, cross subsidy between consumers in Tasmania is not towards solar PV, but from low consumption homes to high consumption homes, and particularly those with appliances that add to peak load, such as heat pumps.

In relation to the network costs to support peak loads, the Energy White Paper (Australian Government 2012, p.xiv) notes that *"It is estimated that the installation of a 2 kilowatt reverse-cycle air conditioner [known as a heat pump in Tasmania] can cost a consumer around \$1500, but imposes costs on the energy system of up to \$7000 when adding to peak demand—costs that are spread across all customers."*

While we generally support the pursuit of removing cross subsidies in the electricity system², we note that to do so is highly challenging, and the Issues Paper seems selectively to demonise solar PV when other, far more substantial, 'cross subsidies' are ignored.

Upper limit on size of systems eligible for the FiT

Given that the overall intention of the revised FiT is that generators are paid the value of the energy they generate there is no impact on other consumers and hence there is no inherent reason why there should be a cap on the size of systems. If there is to be an upper limit, Tasmania should use the 100 kW limit on the size of systems eligible for the FiT as is done in the new Victorian FiT.

It is important to distinguish two separate issues relating to system size

1. the size of the system with an automatic right to connect to the network with a deemed connection agreement, and
2. the size of the system that is eligible for the FiT.

The Government's Issues Paper seems to conflate these issues.

There are **potentially** problems if larger distributed generators are connected to the distribution network which might require upgrades to the distribution system, but these are often overstated. There should be a "deemed grid connection agreement" under the National Electricity Rules for systems up to 10 kW. For systems over 10 kW it is reasonable that there be a right for the network business to require a negotiated sharing of upgrade costs **if there is reasonable expectation that it would cause additional network costs**. However this is not a reason to limit the FiT for connected systems to 10 kW.

¹ Combined fixed charges for tariff 31 and tariff 41 totalling \$1.18/day.

² For example Appendix B of the Issues Paper proposes as a specific requirement for the TER determination that "feed-in tariffs should not result in any cross-subsidies between customers or customer classes".

Benefits of larger scale distributed and embedded generation

Tasmania has great potential for distributed renewable energy projects at scales in between the household and industrial scale wind and hydro projects. This potential exists across a range of technologies, including solar PV, mini-hydro, wind, biomass and tidal power, and across a range of business models including commercial, municipal, on-farm and community owned.

The benefits of policy support for these projects include:

- **Regional development:** many of these projects will be located in rural areas. On-farm projects can reduce energy costs and provide valuable additional revenue – and the benefits are likely to be shared locally.
- **Industry development:** building on Tasmania’s existing expertise in renewable energy development could create a significant potential for sale of expertise and services to the mainland and overseas.
- **Unlocking sources of capital not available to utility-scale projects.**
- **Utilising energy resources that, while still cost effective, are too small in scale to be viable through conventional utility-scale projects.**
- **Improving the efficiency and robustness of Tasmania’s electricity infrastructure.** By increasing electricity generation closer to the location of use, less energy is lost in transmission, and some technologies may avoid or defer the need for expensive upgrades to the transmission and distribution networks.

At the moment these projects are not covered by the existing feed-in tariff as they are greater than 10 kW and are required to negotiate individual power purchase agreements with Aurora (in future, with new retailers). As argued above, any revised FiT should be applicable to project up to 100 kW. As there is no net cost to other consumers for a fair and reasonable FiT there is absolutely no impact on other consumers in raising the FiT eligibility to 100 kW.

Given the substantial community benefit of such projects a policy framework for encouragement of these projects should be put in place before the proposed energy market reforms are implemented.

3 Problems with the Issues Paper

The Issues Paper has a number of deficiencies:

- The Paper presents a false argument that the only economic benefits of solar PV are avoided purchase of wholesale power and some avoided distribution losses. It ignores the benefits in job creation, public engagement and diversification of electricity supply. It only mentions in passing the role of solar PV in putting downward pressure on wholesale electricity prices.
- There is no wider vision of the role of renewable energy for the future development of Tasmania.
- It proposes that the FiT continue to only be offered for connections below 10 kW. There is no support for community, farm, small business and commercial renewable energy installations.
- The paper implies that with a 1:1 feed-in tariff transfer money from the poor to the wealthy but no evidence is presented to substantiate this.
- The presented examples (p.23) assume that solar electricity offsets electricity used for heating (tariff 41). This is not the case given the way solar PV is currently installed in Tasmania and as a result the paper understates the amount owners would be worse off with a lower FiT.

- The paper claims that the cost of the current scheme would be “almost \$10m” in 2013-14. Despite repeated requests, no justification has been provided for this figure. Using Aurora data our estimate is \$5.28m.

Metering anomaly

The implementation of a metering solution needs to be resolved so that all solar PV owners are able to use the electricity they generate to offset concurrent consumption on all tariffs, not just tariff 31.

Importantly, fixing the metering problem for existing solar customers will materially reduce the cost of the FiT for other consumers/taxpayers during the three year transitional period, as PV owners will effectively, for billing purposes, be using more energy onsite and sending less energy to the grid.

In a number of places (eg p.9, examples on p.23) the Issues Paper states or implies that the metering and financial settlement for solar energy is structured in a manner reflecting that some or all of the energy from the solar array is used onsite both for heating (tariff 41³) and light and power (tariff 31).

ATA have extensive metering expertise and, after discussions with Aurora, we can confirm that the assumption of the Issues Paper is incorrect for solar PV systems currently installed in Tasmania due to the way meters are configured.

In summary, the problem is that export of solar electricity is only measured through the light and power meter so some electricity is being exported through one meter at the same time it is being imported through the other. This is not a problem with the current 1:1 tariff, but means that if the FiT rate drops below the tariff 41 rate of 16.757c the retailer would charge the solar PV owner the full retail price for some energy they have generated and used concurrently in their own premises.

We have previously raised this issue with the Electricity Reform Project. The Electricity Reform Project responded by producing a Supplementary Paper (ERP 2013d) which contains 12 different examples of export scenarios but fails to acknowledge the problem described above.

In discussion with Aurora we have been able to identify that solutions are available for different customer installations that can in most cases be implemented at little or no cost. Aurora have lodged an enquiry with their meter vendor to better understand how the potential fix can be implemented for existing and future meters.

We intend to provide a supplementary submission with more detail on the fix for the metering anomaly, however as we are reliant on information from the meter vendor this will not occur before submissions to the Issues Paper are due. In the meantime we request that the Electricity Reform Project acknowledge this issue and commit to resolving it.

While straight forward solutions are available, in keeping with the National Electricity Rules, implementing the fix will require government to direct Aurora to use specific metering solutions.

Calculation of amount of electricity exported to the grid

The Issues Paper uses Aurora’s assumption that only 30% of the electricity generated by solar PV in households is exported to the grid. The ratio of electricity exported will vary widely depending mainly on:

- the size of the system – bigger systems will export more of the electricity generated

³ Technically Aurora currently has a tariff 41 (hot water) and tariff 42 (hot water and heating) however both tariffs are at the same rate (16.757 c/kWh).

- the pattern of use in the household – when people are at home during the day they are more likely to use the electricity they generate.

Measurement by individual householders with solar PV and analysis⁴ of the figures presented by Aurora suggest that the Aurora assumptions are inaccurate. In reality, on average at least 50% of the electricity generated by Tasmanian household PV systems is exported to the grid at the time it is generated. However most household would reimport at least this much electricity at different times of the day, and very few customer would actually generate more energy than they use over the course of a year.

Using the lower export figure of 30% rather than the more realistic 50+% means that the examples in the Issues Paper understate how much worse off householders will be with a lower FiT.

It is important that accurate information is used to inform the proposed setting of a revised FiT by the TER, and this key information provided in the Issues Paper is demonstrably inaccurate.

Cost of the current FiT

Both the Issues Paper and Minister Bryan Green have used a figure of \$10m as the cost of the current FiT scheme in 2013-14. The Issues Paper says “Aurora estimates that the cost of the scheme could potentially rise to almost \$10 million in 2013-14”. We have asked Aurora, the Minister’s office and the Electricity Reform Project for the source and basis of this figure but no one is accepting responsibility as the source of the figure or the basis on which it is calculated. Using Aurora’s figures (Appendix 4) on the anticipated number and size of solar installation and valuing the electricity exported to the grid at a very minimal 8c/kWh, we calculated the net cost of the current FiT at \$5.28m in 2013-14 (see Appendix 3). This is a very small cost in the overall Aurora turnover of over \$1,400m per year, and the real cost would be even lower once some of the other benefits of the solar industry are taken into account.

This is symptomatic of a consistent pattern in the Issues Paper of overstating the costs and problems of current FiT arrangement and understating the benefits.

4 Benefits of support for domestic PV and other small renewable energy

Job creation

Jobs created in installing rooftop solar are direct, local and of the type needed in the Tasmanian economy in light of the loss of jobs in other construction and industrial areas. The jobs are created in small, local businesses of the type Tasmania needs to encourage. Other forms of energy generation have relatively low job intensity.

Diversifying the energy base

The government cites “long-term safe, secure and reliable supplies” of electricity as one of the objectives of its reforms, but the proposed changes do nothing to diversify the sources of electricity which is a key aspect of secure and reliable supply. Encouraging household solar PV as well as commercial and community small renewable energy sources is an important part of developing a smarter, more efficient and more robust energy system.

Impact in reducing energy costs

Energy from solar PV is falsely characterised by opponents as adding to wholesale energy costs, when in fact the uptake of solar PV is demonstrably acting to reduce wholesale energy prices across

⁴ This analysis will be the subject of a separate submission by Steve Watson.

Australia (Sandiford 2012). This occurs through the ‘merit order effect’. Because solar electricity exported during the daytime reduces the demand for the most expensive peak power, it has the effect of reducing overall wholesale prices.

Household solar PV makes the energy system more efficient because electricity is generated at, or close to, the point of consumption. This completely avoids losses in the transmission network and substantially reduces losses in the distribution network.

The Alternative Technology Association (ATA 2012) documents the extent of vertical integration in the electricity industry – most retailers, including all the biggest retailers also own generating assets. Retailers are therefore not motivated to purchase power from households. Research conducted by ATA demonstrates that in NSW, where there is no legislated FiT, retailers typically offer FiTs that are below the actual value of the solar generation to retailers, if they offer FiTs at all. Currently, only 6 of 14 retailers even offer a FiT under NSW’s voluntary arrangement.

Economic benefit to the state

Hydro Tasmania earns revenue from export of power to the mainland. This revenue has increased recently as a result of higher wholesale prices due to the carbon tax (which does not have to be paid on Tasmania’s renewable energy). Local energy generation and conservation frees up energy that would otherwise be used in Tasmania. This means that solar energy directly adds value to the ‘battery’ of our water storages, allowing more energy to be exported at times of maximum prices on the mainland.

This economic benefit is directly proportionate to the amount of energy generated by solar, and is passed on to the people of Tasmania as the owners of Hydro Tasmania. Accurate calculation of the wholesale value of electricity fed into the grid by solar PV needs to take into account this benefit. For this reason, it is appropriate to consider the value not only of wholesale energy sold into Tasmania but also that sold into Victoria, including during high price periods.

Maximising the brand benefits of clean Tasmanian electricity

The Market and Regulatory Framework Position Paper (ERP 2013a) states that one of the government’s objectives is to “Maximise the value of Tasmania’s low carbon advantage and the brand benefits of clean Tasmanian electricity”, however the only proposed mechanism for this is the continuation of the operations on the mainland of Momentum, the retailing arm of Hydro Tasmania. This is an extremely limited approach compared with the detailed strategy developed by the Tasmanian Renewable Energy Industry Development Board (TREIDB, 2011) and submitted to the state government in 2011. Within an overarching vision that Tasmania should be a net exporter of renewable energy, the TREIDB suggested practical strategies for facilitating both utility scale development and distributed and embedded generation by private and community-based projects. It also made recommendations on facilitating the introduction of electric vehicles in Tasmania which would improve energy security, reduce carbon emissions and further enhance Tasmania’s ‘clean green’ image.

Community empowerment

Installing solar on their homes is arguably the most powerful, visible way that ordinary Tasmanian citizens can demonstrate their participation in Tasmania’s response to climate change and contribute to Tasmania’s unique position in delivering most, if not all, of its power by renewable energy.

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6 Appendices

Appendix 1: Proposed revised principles for TER determination of feed-in tariff

Proposed **additions** and ~~deletions~~ to the Principles in Attachment B of the Issues Paper

Fair and Reasonable Feed-in Tariff Determination – Principles

1. The Regulator is to determine a fair and reasonable **minimum** per-kWh rate to be paid to small customers with small-scale distributed generation systems of less than **100kW** ~~40kW~~ for the net electricity that these customers export to the network (i.e. a ‘feed-in tariff’) in a fully contestable market. Small customers are defined as customers located on mainland Tasmania (including Bruny Island) who use less than 150MWh of electricity per year.

2. In making a feed-in tariff determination, the Regulator must have regard to the fair and reasonable value ~~to retailers of the electricity fed into the network~~ of energy fed into the energy system by eligible customers by quantifying the net financial benefits ~~to retailers of this electricity~~.

3. The Regulator should consider the net financial benefits to retailers of exported electricity with respect to retailers’ controllable costs, including (but not limited to):

- the price that the retailer pays for wholesale electricity;
- the costs a retailer incurs in running its retail business; **and**
- **how these financial benefits or avoided costs change over time (e.g. due to electricity prices rises).**

4. The Regulator **should** ~~may~~ also consider any broader, indirect costs or benefits of distributed generation to the electricity market (e.g. impact on wholesale **trading opportunities and** prices), as well as any impact on the transmission and distribution networks (either **net** costs or benefits). Where such externalities are identified and **can be** quantified, the Regulator should consider how these are best captured and attributed in relevant accounts (eg Aurora, Hydro etc). **Factors the Regulator should take into account include** (but are not limited to):

- the impact on lowering wholesale prices via the merit order effect
- the economic value to Tasmania of being able to export additional power to the mainland
- the reduction in transmission losses as a result of energy being generated at or very close to the point of consumption
- financial benefits of distributed generation that accrue to all electricity retailers collectively (in a competitive market) and not solely to the electricity retailer of the distributed generator
- any potential for distributed generation to enable deferral or avoidance of additional investment in distribution infrastructure

5. In making a **minimum regulated** feed-in tariff determination, the Regulator must have regard to:

- **The National Electricity Objective that the electricity market should operate for the long term interests of consumers of electricity with respect to price, quality, safety, reliability, and security of supply of electricity;**
- The 2012 COAG National Principles for Feed-in Tariff Arrangements;

- ~~The principle that feed-in tariffs should not result in any cross-subsidies between customers or customer classes; and any disproportionate burden on other energy consumers~~ *
- Relevant approaches and methodologies for determining fair and reasonable feed-in tariffs in other jurisdictions.
- Where a feed-in tariff policy determination incorporates non-monetary values or government policy (eg carbon abatement) that would impinge unfairly or unreasonably on the retailer, a mechanism for fiscal transfer to take into account that component of feed-in costs.

6. The Regulator must:

- Prepare and publish a Draft Report and Draft Determination, which is to be made available for public comment;
- Include in the Draft Report, the assumptions and calculations underlying any assessment of costs and benefits;
- Publish notices in daily newspapers generally circulating in Tasmania that the Draft Report and Draft Determination are available for public comment;
- Provide no less than six weeks for interested parties to make submissions on the Draft Report and Draft Determination;
- Take into account submissions received in preparing its Final Determination;
- Prepare and publish a Final Report and Final Determination as soon as possible before the end of the 2013 calendar year; and
- Review the feed-in tariff settings each year, taking into account changes at the wholesale and retail level and other external and internal factors that may impact on the financial benefits or avoided costs to relevant parties.

* This is consistent with the 2012 COAG principles that FiT payments “do not impose a disproportionate burden on other energy consumers”. Total avoidance of cross subsidies “between customers or customer classes”, thought laudable, is an unachievable policy objective and entirely inconsistent with current approaches to energy pricing in Tasmania and the rest of Australia.

Appendix 2: Household income and solar installation rate by LGA

Source data for figure 1

LGA (Aurora)	Total Solar Units	Population	No of dwellings	Solar Units as % of Dwellings	Income (ABS)	LGA (ABS)
Break O'Day	267	6514	2,555	10.5%	32,267	Break O'Day (M)
Brighton	380	16358	4,899	7.8%	39,925	Brighton (M)
Burnie	182	19892	7,584	2.4%	41,334	Burnie (C)
Central Coast	420	21747	8,030	5.2%	38,747	Central Coast (M)
Circular Head	137	8263	3,024	4.5%	36,992	Circular Head (M)
Clarence	1,559	52935	19,100	8.2%	43,982	Clarence (C)
Devonport	465	25551	9,517	4.9%	39,014	Devonport (C)
Dorset	190	7355	2,764	6.9%	33,098	Dorset (M)
Flinders	93	900	391	23.8%	33,043	Flinders (M)
George Town	228	6892	2,572	8.9%	40,051	George Town (M)
Glamorgan/Spring Bay	159	4507	1,733	9.2%	33,661	Glamorgan/Spring Bay (M)
Glenorchy	1,213	44716	17,993	6.7%	38,375	Glenorchy (C)
Hobart	814	50078	19,980	4.1%	52,115	Hobart (C)
Huon Valley	599	15372	5,176	11.6%	35,804	Huon Valley (M)
Kentish	145	6286	2,053	7.1%	34,377	Kentish (M)
King Island	152	1683	677	22.5%	38,950	King Island (M)
Kingborough	1,227	34171	11,511	10.7%	44,137	Kingborough (M)
Latrobe	219	10020	3,324	6.6%	41,233	Latrobe (M)
Launceston	1,709	65826	25,284	6.8%	41,677	Launceston (C)
Meander Valley	358	19694	7,039	5.1%	38,855	Meander Valley (M)
New Norfolk/Central Highlands	213	12440	4,494	4.7%	37,120	Central Highlands (M)
Northern Midlands	314	12654	4,599	6.8%	38,815	Northern Midlands (M)
Sorell	476	13407	4,689	10.2%	39,195	Sorell (M)
Southern Midlands	86	6146	2,119	4.1%	35,150	Southern Midlands (M)
Tasman	92	2413	945	9.7%	29,974	Tasman (M)
Waratah/Wynyard	220	14096	5,215	4.2%	37,649	Waratah/Wynyard (M)
West Coast	52	5251	2,161	2.4%	46,606	West Coast (M)
West Tamar	563	22476	7,735	7.3%	41,784	West Tamar (M)
TOTAL	12,532	507643	187,163	6.7%		
						Unmatched
					61,479	Unknown Tas
					36,799	Derwent Valley (M)

Sources

Aurora "Solar Installations Data.docx" 10 May 2013

6524.0.55.002 - ABS Estimates of Personal Income for Small Areas, Time Series, 2009-10

Appendix 3: Email 21 May 2013 “problems with FiT issues paper”

From: Jack Gilding, Save Solar Tasmania [mailto:tasmania@solarcitizens.org.au]
Sent: Tuesday, 21 May 2013 4:35 PM
To: Electricity.Reform@treasury.tas.gov.au
Subject: problems with FiT issues paper
Importance: High

To Electricity Reform Project

I am writing to seek clarification on several problems we have identified with the Feed-in Tariffs Issues Paper. As public comment on this needs to be submitted in less than three weeks we would appreciate your urgent clarification of these matters so that we can communicate to our supporters in time for them to make submissions based on corrected information.

Metering arrangements

The examples on page 23 make the assumption that electricity generated on-site can reduce the purchase of tariff 41 electricity. Our understanding is that on advice from Aurora, solar systems are always connected to the tariff 31 meter and there is therefore no offsetting of power imported on tariff 41 meter, even if it is at exactly the same time as power is being exported. Can you please confirm this. If our understanding is correct, the examples in the Issues Paper are wrong and as a result the loss from changing to a 7c/kWh would be much greater.

I understand Steve Watson, who identified this problem, has done a more detailed explanation and will write to you shortly on this.

Assumptions on export ratio

We would like to know on what basis the assumption of 30% export, 70% own consumption is made. Several people have suggested that this is unrealistic and that export percentage could in fact be considerably higher, especially as the average capacity of installed systems increases. Again this will substantially increase the cost to owners of moving to a lower FiT.

Claims on the cost of the FiT

We do not understand the basis of the claims (p.12) that the likely cost of the NMBS is \$3.5m in 2012-2013 and “could potentially rise to almost \$10 million in 2013-14”. Both these costs are attributed to Aurora. I presume the authors of the paper are relying on the same Aurora figures as supplied to us by Sean Terry – please see attached “Solar Installations Data.doc”

In Table A on page 3 of this document there is a column headed “Cost of FiT to Aurora”. This is a gross cost and takes no account of the benefit of the feed in electricity. At an absolute minimum, this should be reduced by 8c for the wholesale value of the electricity to Aurora, (although as we will be arguing in our response to the paper, there are many more benefits from household solar PV). Using Aurora’s figure of 58.145 million kWh for 2012-13 and multiplying this by (27.8c-8c) results in a net ‘cost’ of \$3.45m which is comfortably close to the \$3.4-\$3.5m figure in the paper. What we do not understand is the basis of the \$10m figure. Using the same methodology for the estimated 88.961m kWh for 2013-14 results in a net ‘cost’ of \$5.28m, only slightly more than half of the quoted figure of \$10m. It is hard to imagine any set of assumptions that would allow a 186% increase in costs from a 53% increase in electricity generated.

We look forward to your early response to these queries.

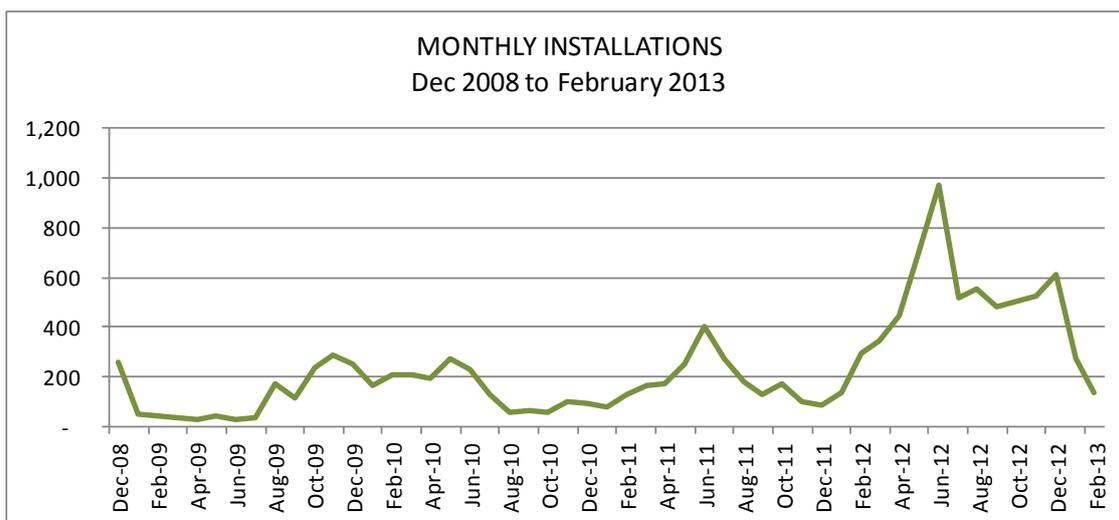
Appendix 4: Aurora document “Solar Installations Data.docx” 10 May 2013

FORECAST REVENUE IMPACT OF THE CURRENT FEED IN TARIFF SCHEME

BACKGROUND

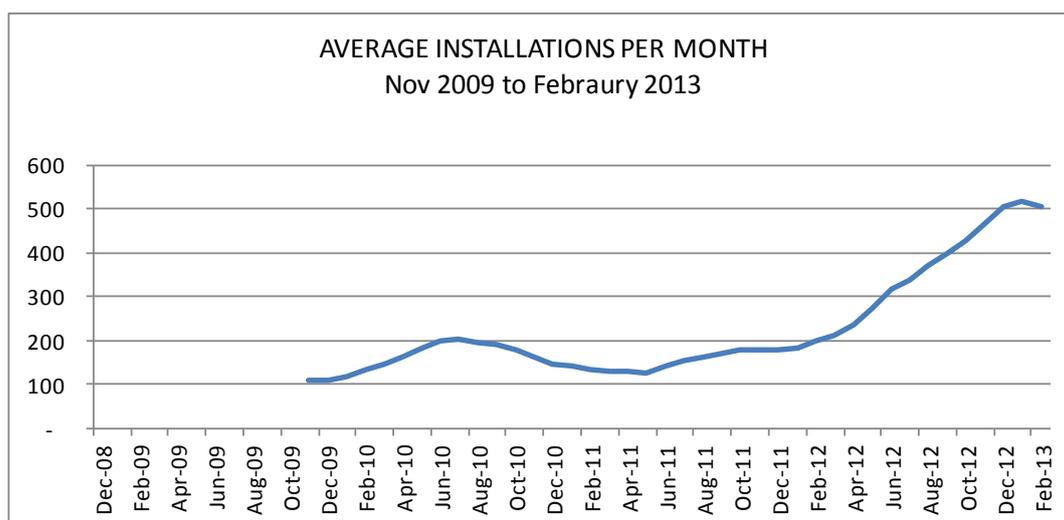
Aurora currently pays a voluntary Feed in Tariff of 25.3 cents (GST exclusive) per kwh (Tariff 110) to owners of approved solar power systems. Available data¹ indicates that there are currently 12,500 systems that are in receipt of the Feed in Tariff or that have registered to create renewable energy certificates. Average monthly installations/registrations of the systems are shown in Chart 1 below, which peaked at almost 1000 in June 2012, but have since showed signs of slowing down.

Chart 1:



This is further demonstrated in Chart 2 that shows the 12-monthly moving average of installations/registrations.

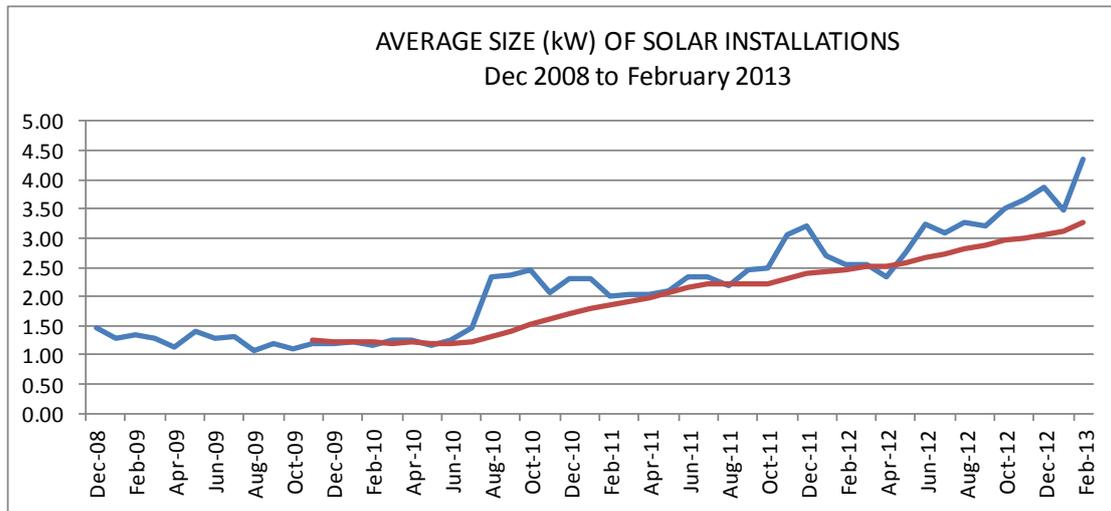
Chart 2:



¹ Data from December 2008 to January 2013 is from Aurora Energy Business. This has been supplemented with data from the Office of the Clean Energy Regulator for the period January 2012 to February 2013. The addition of the OCER data for that period takes the total installations to 12,532 as at the end of February 2013. This may still underestimate the number of potential systems, as there may be applications coming through that have not been registered.

In addition to the increase in the number of installations over the last few years, there has also been an increase in the average size of the solar unit installed. This is shown in Chart 3 below, where the red line is a 12-month moving average of the solar unit size.

Chart 3:

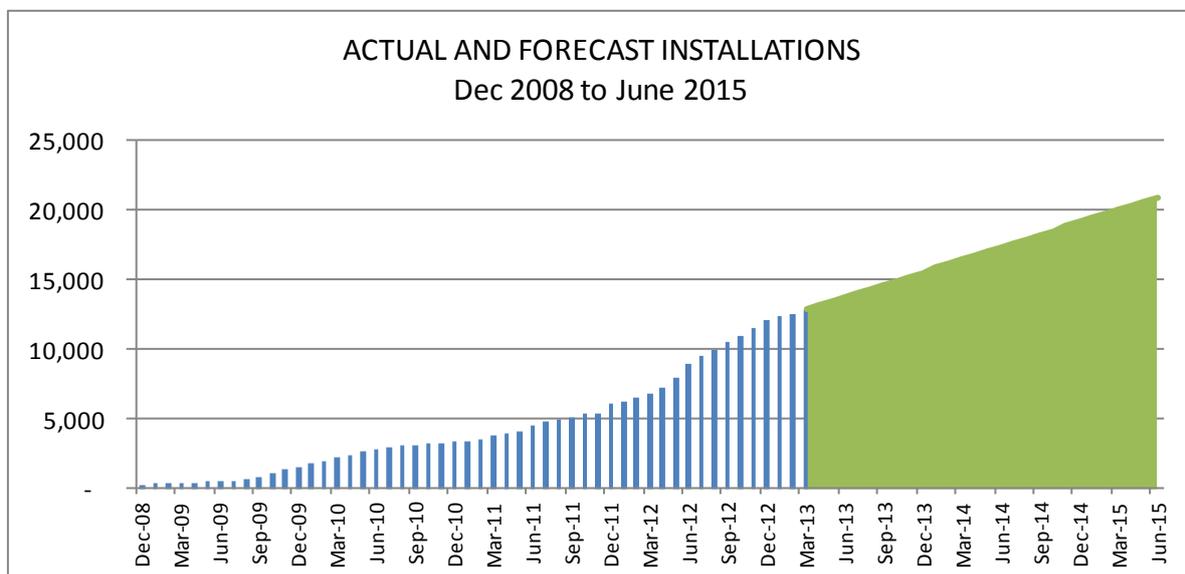


FORECAST INSTALLATIONS FOR THE PERIOD 2012-13 TO 2014-15

To set the bounds for the forecast number of installations, a mid-range estimate has been estimated that assumes a continuation of the PV installations at a rate of 300 per month. This is in the average of the current peak rate and the lower rate that was evident from earlier periods until March 2012.

Chart 4 illustrates this forecast compared to actual installations for earlier periods. The BLUE columns are the actual number up to February 2013, and the GREEN shaded area is the 300 per month growth forecast out to June 2015.

Chart 4:



CONTINUING COST OF THE FIT SCHEME

Aurora is impacted by the Feed in Tariff scheme from a two-fold perspective. Firstly, it incurs a cost in paying the tariff to the solar unit owner, and, secondly, a loss of revenue due to solar customers offsetting their consumption. The calculation of the cost of the tariff payment itself is assumed to be 30% of the total generated cost, with the remaining 70% being the cost of the lost revenue through offset consumption to Aurora.

Table A indicates the cost to Aurora for 2011-12 (actual) and 2012-13 to 2014-15 (estimated). In each case, the average installations used for the calculations are the average of the period, rather than the 'point in time' number. **These calculations include GST.**

The average size of the PV installation is the average from December 2008 (earliest available) to the latest date in the period being considered representing the average capacity in the system (based on 300 per month after February 2013).

Table A

Period	Average Installations	Average size	kWh generated (million)	Credit back rate	Cost of FiT to Aurora	Reduced revenue due to offset consumption	TOTAL COST (\$M)
2011-12	6528	1.60	22.112	\$ 0.252	\$1.671	\$3.899	\$5.570
2012-13	11890	2.31	58.145	\$ 0.278	\$4.849	\$11.315	\$16.164
2013-14	15680	2.68	88.961	\$ 0.278	\$7.419	\$17.312	\$24.731
2014-15	19280	2.93	119.590	\$ 0.278	\$9.968	\$23.260	\$33.228

These estimates should be considered as indicative only as they are based on assumptions which may be subject to change.

Table B below allocates the solar units to Local Government Areas (LGAs), and compares the number of units in each LGA with population and the number of dwellings in each LGA².

Table B:

LOCAL GOVERNMENT AREA	TOTAL SOLAR UNITS	POPULATION	Solar Units as % of population	No of dwellings	Solar Units as % of Dwellings
Flinders	93	900	10.3%	391	23.8%
King Island	152	1683	9.0%	677	22.5%
Huon Valley	599	15372	3.9%	5,176	11.6%
Kingborough	1,227	34171	3.6%	11,511	10.7%
Break O'Day	267	6514	4.1%	2,555	10.5%
Sorell	476	13407	3.6%	4,689	10.2%
Tasman	92	2413	3.8%	945	9.7%
Glamorgan/Spring Bay	159	4507	3.5%	1,733	9.2%
George Town	228	6892	3.3%	2,572	8.9%
Clarence	1,559	52935	2.9%	19,100	8.2%
Brighton	380	16358	2.3%	4,899	7.8%
West Tamar	563	22476	2.5%	7,735	7.3%
Kentish	145	6286	2.3%	2,053	7.1%
Dorset	190	7355	2.6%	2,764	6.9%
Northern Midlands	314	12654	2.5%	4,599	6.8%
Launceston	1,709	65826	2.6%	25,284	6.8%
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Southern Midlands	86	6146	1.4%	2,119	4.1%
West Coast	52	5251	1.0%	2,161	2.4%
Burnie	182	19892	0.9%	7,584	2.4%
TOTAL	12,532	507643	2.5%	187,163	6.7%

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² Data for these calculations has been sourced from the 2011 Census.