Unit 3, 448 Oceana Drive
Howrah TAS 7018

31 July 2018

The Chairperson
Solar Feed-in Tariff Review Committee
Department of State Growth
GPO Box 536
Hobart TAS 7001
Email solarfeedinreview@stategrowth.tas.gov.au

Dear Sir/Madam

I wish to make a submission in relation to the Solar Feed-in Tariff review.

The review paper criteria have been addressed below:

1. *What changes could be made to current Feed-in Tariff arrangements (for example, a different Feed-in Tariff rate structure) to provide incentive to install rooftop solar generation and appropriately reward consumers that have already installed rooftop solar generation*?

   The Feed in Tariff (FiT) rate is a payment to the owner of the qualifying solar generation system (qsgs) who generates energy from a qsgs.

   The current transitional FiT rate of 28.283 cents per kilo watt hour (kWh) or 8.541 cents per kWh for regulatory FiT rate are not in alignment with current tariff rates charged to the normal consumer for energy consumed and do not reflect the actual costs of generation and distribution.

   The current Aurora Energy tariff rates are as follows:

Tariff		31	41
Aurora Energy Total Cost		0.259	0.16819
		Calculation	
Generation	36.80%	=0.095312	=0.061894
Renewable Energy Certificate	5.60%	=0.014504	=0.009419
Market Charges	0.40%	=0.001036	=0.000673
Network Charges	43%	=0.11137	=0.072322
Metering	2.40%	=0.006216	=0.004037
Retail	11.80%	=0.030562	=0.019846

   When energy is transmitted on the TasNetworks network from qsgs it is assumed that it is consumed by customers closest to the qsgs. Based on this

assumption the customer receiving energy from the qsgs is charged 100% of the tariff. The energy consumed is in close proximity to the generation source and when it is distributed from the qsgs in most cases will be consumed as tariff 31 or tariff 41. At present it is impossible to identify whether the energy consumed from the qsgs is consumed under tariff 31 or 41.

The regulated rate of 8.541 cents per kWh is not an incentive for anyone to install qsgs and it appears that TasNetworks is profiting from this arrangement as customers who consume tariff 31 energy from a qsgs are charged 100% of the tariff eg 25.9 cents per kWh.

The customer receiving the energy from qsgs are not using the transmission assets (3,500 kms of transmission lines and 7,700 support structures)[1]. In addition the high voltage distribution lines (15,000 kms)[1], are not used. There would be minimal use of 15,000 kms$_1$ of low voltage lines and 230,000 poles[1]. The transmission loss factor should not be included in the FiT as there would be no loss of energy to where the qsgs energy is consumed as the transmission lines would not be used. The distribution network would be minimally used and the distibution loss factor should not be included in the FiT.

TasNetworks provided 11.675 million[1] reimbursements to Aurora Energy in 2016-17 for qsgs customers for the difference between the legacy transitional feed-in-tariff rate paid to the customer and the standard feed-in-tariff rate. The reimbursements are paid to retailers under section 44I of the Electricity Supply Industry Act 1995[1]

I believe that a FiT should reflect the approximate true cost of energy generated and distributed which would eliminate the need for excessive amounts to be reimbursed to the retailer (Aurora Energy).

Seasonal climatic conditions affect the use of tariffs and to even out their impact I propose the following formula:
Where Tariff 31 and Tariff 41 are consumed at a dwelling -
(Tariff 31 Generation Charge + Tariff 41 Generation Charge + Tariff 31Network Charge + Tariff 41 Network Charge) divided by 2, multiplied by the Transmission loss factor.
Example - =sum(((.095312+.0618932+.11137+.0723217)/2)*1.0353)
(The Transmission Loss factor in the above example is for a dwelling in 7112 post code area.)

Having a fairer FiT across the board would incentivise consumers and reward customer equitably.

[1] Source – TasNetworks Annual Report 2016-17

2. *Would those changes be likely to result in any other indirect or unintended impacts (beneficial or otherwise)?*

   Having a FiT that reflected the approx. true cost of energy should be cost neutral as the network provider would be reimbursing the retailer for the energy already charged to the dwelling with the qsgs.

3. *What contribution does rooftop solar generation make to Tasmania's energy security?*

   The TasNetworks 2016-17 Annual Report identified that:-

   - 96.4 Megawatt of solar generation capacity was connected to 27,600 locations in Tasmania; and
   - Power delivered on the transmission network was 11,119 Gigawatt Hour.

   The annual solar generation is calculated to represent approx. 0.867% of the electricity generation or 349 kWh per location.
   The 2016 Australian Bureau of Statistics Census listed 241,744 private dwellings of which 197,575 were occupied. Based on Pareto's theory where 80% of occupied dwellings hypothetically installed solar, and assuming that each dwelling generated 349 kWh per annum it would represent 552.06 Megawatts or 4.965% of total generation. ((197,575*80%)*349).

   Assuming that each occupied location had a battery installed, say 5 kWh where approx. 3.5 kWh of battery was used on a daily basis there would be an additional .553 Megawatts and when added to the solar generation it would represent a saving of 552.6 Megawatts or .4970% of total usage.

   Solar installations by themselves only provide a minimal contribution to Tasmania's energy security, however when combine with battery storage there would be an element of self-sufficiency during an energy crisis.

4. *What are the social and environmental benefits and costs of rooftop solar generation? What is the value of these benefits and costs?*

   The interconnector between Tasmania and the mainland and the Gas fired power station at Bell Bay are the only source of non-renewable energy to the Tasmanian Grid. By not sourcing energy from the interconnector or Bell Bay would provide environmental benefits as there would not be a reliance on energy produced by coal or gas fired power stations. Obviously increased solar generation would reduce this reliance. Other factors affecting this non reliance would be Hydro Tasmania's policy to give preference to Tasmania consumers rather than provide energy to mainland users at an increased cost.

Social benefits would be the perception of self-sufficiency and non-reliance on other states to provide energy.

5. *Do the community benefits of incentives further solar installations outweigh the costs of providing those incentives?*

   At present the Government provides interest free loans to consumers for the purchase of solar installations. This type of incentive does not negatively impact the community to the extent that "only rich people can afford solar". This incentive is available to all consumers and does not favour the rich and it would be more acceptable to the community to provide this incentive.
   In Item 1 above I propose that the FiT incentive should be close to cost neutral so again the impact on the community to negative feedback from non-solar users is diminished.

6. *Are the alternative mechanisms (other than changes to Feed-in Tariffs) that could be used to incentivise and reward the installation of rooftop solar generation?*

   Provision of rebates to house owners to purchase battery storage units and solar rooftop generation systems would be an alternative.

7. *Is there potential for roof top systems, smart metering and battery storage systems to help manage or limit peak demand?*

   Yes, I agree there is potential for roof top systems, smart metering and battery storage systems to help manage or limit peak demand?

   Community education in electricity use would also be a help. The purchase of energy efficient appliance e.g. (Inverter air conditioning units, washing machines with high star electricity ratings etc.)

8. *Are the opportunities to benefit from roof top solar available equitably across the community?*

   Yes, I agree that there are opportunities to benefit from roof top solar available equitably across the community. The Government interest free scheme is testament to the opportunity.

   To encourage households to install these systems there should be equitable FiT rates fixed.

9. *Any other matters that the person or group submitting would like to raise for consideration?*

   Not Applicable

I would be happy to discuss the details above in person if there is a requirement to do so.

Kind Regards

Graham Armstrong