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Briefing on Solar Feed-in Tariff Review

About this document

This document provides background information and suggested points that could be made for people wishing to make a submission to the current Tasmanian Solar Feed-in Tariff Review.

Submissions are due by 6 August 2018 and should be in writing and sent to: Solar Feed-in Tariff Review, GPO Box 536, Hobart 7001, or emailed to solarfeedinreview@stategrowth.tas.gov.au

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Context

Over 32,000 Tasmanian households and businesses have solar PV on their roof. Of these 19,200 (who ordered their solar system before 30 August 2013) receive a fixed rate of 28.3 c/kWh (cents per kilowatt hour) for energy they feed back into the electricity grid. This fixed rate, known as the Legacy feed-in tariff (FiT), will end on 31 December 2018.

Households and business who installed solar PV after 30 August 2013 are paid a FiT rate determined by the Office of the Tasmanian Economic Regulator (OTTER). This rate is adjusted each financial year and is currently set at 8.5 c/kWh for 2018-2019.

Prior to the last state election all three major parties committed to reviewing the FiT rate. The Liberal Party's "Tasmania First Energy Policy" stated:

"While many Tasmanians want the opportunity to take control of their energy needs, currently two Feed-in Tariff rates operate in Tasmania. Some customers were grandfathered at 28.28 cents/kwh until December 2018, while others receive only 8.9 cents/kwh. We know that for those on the higher rate the sudden cliff that Labor introduced 5 years ago is a concern whilst those on the lower tariff obviously want a better deal.

A re-elected Hodgman majority Liberal Government will review and reshape the solar Feed-in Tariff. The new arrangements which result from the review will be implemented by 1 January 2019.

The review which will be conducted during the next 6 months will aim to determine a Feed-in Tariff that will suitably reward those that have installed solar and look to incentivise further installation of solar in Tasmania. This will assist Tasmania in diversifying its renewable energy generation and help deliver our target for Tasmania to be 100 per cent self sufficient by 2022."

The Solar Feed-in Tariff Review was announced on 7 July and submissions are due by 6 August. A brief consultation paper and the terms of reference are available at https://www.stategrowth.tas.gov.au/energy_and_resources/energy/solar_feed-in_tariff_review

The ongoing process by which OTTER reviews the FiT is determined by legislation and OTTER's next review of the basis for determining the FiT is due to begin later this year. The relationship between the two processes is not clear but any mechanisms resulting from the current Review will set a new rate from 1 January 2019 which will apply to all solar owner (existing and new), presumably replacing or supplementing the current 8.5c rate. The current Review's consultation paper says that the OTTER review later this year "will also be informed by the results of the Solar FiT Review". It is not clear which process will set the FiT rate from 1 July 2019, but whatever happens the results from the current Review will be important.

Summary of main arguments

Components of a fair feed-in tariff

A fair feed-in tariff should take into account:

- a wholesale price that reflects the total benefit to Tasmania, not just the saving to Aurora
- the fact that locally generated and used energy does not make use of, and should not pay for, the transmission network

- avoided losses from transmitting electricity over long distances
- savings from less demands placed on the distribution network
- the reduced greenhouse gas emissions resulting from solar's role in reducing imports from Victoria
- the health benefits from reducing import of fossil fuel based electricity.

Note: TREA will include a proposed value range in c/kWh taking these factor into account in our submission to the Review. If you wish to include this value in your submission, please check our website at www.tasrenew.org.au on Monday 6 August before lodging your submission.

Equitable access to solar

Access to the benefits of solar PV should be made available to tenants, pensioners and low income households through schemes such as NILS, Darebin Solar Savers, and SunTenants, as well as installing solar on public housing in Tasmania.

Alternative FiT arrangements

In addition to a fair flat rate feed-in tariff, the government should facilitate additional payments to solar owners where solar can contribute additional value to the electricity network. This includes a time varying FiT and network support payments.

Additional measures to encourage solar

A range of additional measures should be facilitated by the state government to provide incentives for further installation of solar PV in Tasmania including fixing the current metering software problem and speeding up the provision of smart meters.

Questions posed in the consultation paper

The Consultation Paper suggests that submissions could address the following:

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?
2. Would those changes be likely to result in any other indirect or unintended impacts (beneficial or otherwise)?
3. What contribution does rooftop solar generation make to Tasmania's energy security?
4. What are the social and environmental benefits and costs of rooftop solar generation? What is the value of these benefits and costs?
5. Do the community benefits of incentivising further solar installations outweigh the costs of providing those incentives?
6. Are there alternative mechanisms (other than changes to Feed-in Tariffs) that could be used to incentivise and reward the installation of rooftop solar generation?
7. Is there potential for rooftop solar systems, smart metering and battery storage systems to help manage or limit peak demand?
8. Are the opportunities to benefit from rooftop solar available equitably across the community?

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

Factors in setting a fair FiT

Feed-in tariffs are set at the state level, but all state regulators use a similar basis of considering the impact of various factors in setting a rate. Here we comment on the factors typically considered (although in many cases these are rejected by regulators):

Wholesale electricity price

The current OTTER FiT rate is based on the wholesale price of energy set by the Treasurer¹. This was set by the government and kept low to minimise regulated retail electricity prices. The value of exported household energy in Tasmania should be the value to the state, not the saving to Aurora. Increased local generation reduces the energy we import from Victoria and increases the amount we can export over Basslink. This should be the basis of the wholesale prices used to calculate a fair FiT.

Transmission costs

Aurora passes on to consumers charges for the use of the transmission network irrespective of whether the energy is sourced via the transmission networks or locally from solar PV. Customers pay for a service that is not provided — use of the transmission network for the proportion of their energy that comes from distributed generation. Transmission charges should only apply to the electricity actually carried on the transmission network. These savings should be shared with solar owners.

Distribution network savings

There are at least two ways in which distributed generation makes less use of the distribution network and reduces its costs. Exported energy from solar PV is typically used close to the point of export and therefore makes significantly less use of the ‘poles and wires’. Also a significant proportion of the cost of the distribution network is the transformers which convert higher voltages down to 230V. Solar inverters have this capability built in and export power at 230V.

Reduced CO₂ emissions

Each kWh of solar PV that displaces imported coal fired electricity from Victoria creates a reduction in CO₂ emissions that is worth a minimum of 2.4c to 3.1c using current carbon pricing estimates. Carbon pricing that met the global objective of keeping global warming well below 2°C would translate to a much higher value.

The Victorian single rate FiT for 2018-2019 is 9.9c/kWh² and this includes an allowance of 2.5c/kWh for the “avoided social cost of carbon”. A similar allowance should be applied to the Tasmanian FiT since any increased solar generation in Tasmania reduces imports of mainly coal fired Victorian electricity.

Health benefits

The best available Australian research suggests that each kWh of solar PV that displaces coal fired electricity contributes 1.3c in reduced health costs³. The health impacts of coal fired electricity are felt mainly on the mainland but this should not absolve Tasmania from the moral obligation to reduce these impacts when they arise from generating electricity imported into Tasmania.

This benefit is not currently reflected in any Australian FiTs but recent Victorian legislation makes provision for future FiTs to include a component based on the “avoided human health costs attributable to a reduction in air pollution”.

Non-monetary benefits of solar in Tasmania

Solar PV has many additional advantages to Tasmania that cannot be readily translated to a c/kWh value for energy fed into the grid:

Contribution to 100% renewable electricity: household PV contributes to Tasmania becoming the first Australian state to reach 100% renewable electricity (and one of the few in the world).

Private capital investment: Households and businesses invest their own money to make savings on their electricity use and to contribute to a sustainable energy system. Part of the energy generated is exported to the grid and used by other consumers. This replaces energy which would otherwise require capital investment by Hydro Tasmania or other generators.

Energy security: Distributed PV contributes to diversity of supply and makes Tasmania's electricity system less dependent on rainfall, or single points of failure such as Basslink. Solar contributes most to our energy supply in summer when our rainfall is lower.

Direct jobs: The Tasmanian solar industry employs the equivalent of around 400 full time people. These highly skilled jobs are located throughout the state. Many more jobs would be created with a more ambitious goal for solar.

Industry development: Beyond the direct jobs in solar installation, building Tasmania's capacity in emerging technologies such as battery storage, smart grids and demand management will create the jobs of the future as the world moves to a decentralised and decarbonised energy system.

Price stability: Renewable energy technologies have high capital costs, but very low and predictable running costs. This contributes to long term price stability compared with the fossil fuel based alternatives, either coal fired power from Victoria or gas fired power from the Tamar Valley Power Station.

Energy literacy: Installation of solar PV gives homeowner a strong interest and motivation to better understand and manage their energy consumption. This will be an important driver of the uptake of new technologies such as local storage, demand management and integration of electric vehicle charging which ultimately can lead to a more flexible and economical electricity system.

Sharing the benefits of solar equitably

The state government provides concessions to assist low income customers with the cost of electricity. Support for energy efficiency measures and the installation of solar PV is a way of providing longer term and more sustainable assistance for low income customers.

The state government should support low income customers to be able to invest in solar PV and energy efficiency through increased funding for the NILS scheme (see below).

The state government should facilitate schemes that support access to solar PV for renters and low income households. For example:

- **Darebin Solar Savers:** This scheme run by Darebin Council in Melbourne has put solar panels on over 500 households. Solar is installed on houses by the council and the cost is repaid via council rates payments. Repayments are less than the savings from solar so there is no upfront cost to owners and ongoing savings. Priority is given to pensioners and low income households.
- **SunTenants:** is a private organisation that assists landlords and tenants to access and share the benefits of solar.

No interest loans

The current TEELS and NILS schemes⁴ provide no interest loans for various energy efficiency measures and installation of solar PV. The NILS scheme is currently closed to new applications as a result of lack of government funding. A guarantee of continuation of the TEELS scheme and increased funding for the NILS scheme (which specifically assists low income Tasmanians) would assist the take up of solar PV and energy efficiency measures.

Alternative FiT arrangements

The immediate value of energy fed back into the grid from solar PV is strongly dependent on both time and location:

- Wholesale energy prices in the National Electricity Market (NEM) are set every 30 minutes. Energy fed into the grid is of most value when wholesale prices are high.
- Much of the network costs that make up around 40% of the retail cost of electricity result from building a network that can meet peak demand. Energy fed into the grid that reliably reduces peak demand can significantly reduce the need for network investment.
- In some locations the local distribution network is at close to capacity. Locally exported energy can delay or avoid expensive upgrades to wires and transformers.

Time of export FiT

Solar owners in Victoria and regional Queensland have the option of choosing a FiT that varies according to the time of the day and the regulator in NSW has recommended a similar (but more complicated) arrangement⁵. Time varying FiTs have a number of potential advantages:

- they better reflect the way the wholesale value of energy varies over time
- they encourage solar owners to feed excess energy back into the grid when it is most useful in reducing peak demand
- they provide an additional value stream for solar owners considering investing in batteries.

Time varying FiTs are more complicated, and to make the most use of them solar owners need to have batteries and/or energy management systems in their home. For these reasons they should be offered on an opt-in basis and a flat rate FiT should be available as the default.

Network support payments

Locally generated solar electricity stored in batteries can provide additional value at times when the local distribution network is close to capacity. This is the basis of the very successful TasNetworks trial on Bruny Island. Customers with batteries are paid a premium of around \$1/kWh to feed energy back into the grid when demand is high via an arrangement known as network support payments.

This arrangement should be available to customers in other locations where the local distribution network is sometimes at close to capacity. This would provide an additional incentive for customers to install solar PV with batteries. With sufficient battery capacity in those locations, expensive network upgrades can be delayed or avoided, reducing network costs for all customers in future.

Aggregation of distributed energy resources

The value of distributed energy resources (solar PV, batteries, electric vehicle charging and energy management systems in houses) is greater if they can be coordinated to deliver reliable services to the electricity network. A recent in principle [announcement by the AEMC](#) to support moves to allow

“energy users to participate directly in the wholesale electricity market” will facilitate this participation⁶.

The state government should support rule changes which allow organisations to offer these aggregation services without having to work through an energy retailer.

Additional measures to encourage solar

The Review explicitly aims to identify ways to “incentivise further installation of solar”. The FiT rate is only one factor that households and businesses will take into account in deciding whether to install solar.

Additional measures that the state government could take to facilitate the take up of solar include:

Fix the metering anomaly

Most solar owners in Tasmania who are not on the legacy FiT are not receiving the full value of the energy they generate because of a problem with their meter software. Solar has to be connected to either the tariff 31 (light and power) or tariff 41 (heating and hot water) circuit. Most people connect it to the tariff 31 circuit. If they are generating solar and using electricity on the tariff 41 circuit at the same time **solar owners are charged 9.1c for using their own electricity**⁷. A software solution is available to fix this but both Aurora and TasNetworks have declined to implement this.

Smart meter roll-out

The value to a customer of solar PV depends partly on how much of the generated electricity you will use yourself (saving around 25c/kWh) and how much is exported at the FiT rate. This in turn depends on how much of your electricity consumption occurs while the sun is shining. Most existing electricity meters do not provide this information. However smart meters do. Having a smart meter and analysing the pattern of your electricity use can inform the value of installing solar, as well as informing other energy and money saving strategies such as changing to a time of use tariff or installing batteries.

As a result of recent national rule changes, Aurora Energy has started the roll-out of communicating smart meters in Tasmania⁸. Due to constraints in the capacity to roll out smart meters, customers who want to voluntarily install smart meters are facing long delays. Action to speed up the roll out of smart meters would assist the take up of solar, as well as facilitating other ways for customers to save on their electricity bills.

Solar on all schools

A state government commitment to install the maximum practical amount of solar PV on all schools has multiple advantages. Schools use most of their energy in the daytime which maximises savings from solar. Reduced electricity bills can free up budget for other educational purposes. If installed as part of an educational program, it can be an effective way of engaging students and increasing their understanding of energy issues.

Network voltage regulation

In some locations high voltage levels in the distribution network result in customers not being allowed to install solar, or being restricted in the amount of energy they are allowed to feed back into the grid⁹. TasNetworks is currently trialling methods to cost effectively control distribution network voltages¹⁰. These measures should be supported and extended.

References and further information

Backroad Connections 2017, *Fair value of distributed generation (feed-in tariff) project*

This project undertook extensive research and advocacy on the setting of FITs and developed a number of relevant resources in including a fact sheet on [transmission charges](#) and a 2016 fact sheet on the determining a [FIT for Tasmania](#).
http://backroad.com.au/?page_id=97

Darebin Solar Savers

<http://www.darebin.vic.gov.au/en/Darebin-Living/Caring-for-the-environment/EnergyClimate>

DSG 2018a, *Solar feed-in tariff Review*, Tasmanian Department of State Growth, 7 Jul 2018
Consultation document for the feed-in tariff review being conducted by the Department of State Growth.

https://www.stategrowth.tas.gov.au/energy_and_resources/energy/solar_feed-in_tariff_review

OTTER 2018, *Regulator publishes its Approval of Standing Offer Prices and Regulated FIT Rate for 2018-19*

<http://www.economicregulator.tas.gov.au/Documents/Media%20Release%2018%201298.pdf>

SunTenants

<https://www.suntenants.com/>

TREA, *State government is keeping solar owners in the dark*, media release 26 Jun 2018

<http://tasrenew.org.au/wp-content/uploads/2018/06/2018-06-26-TREA-FIT-media.pdf>

¹ The WEP Order:

<http://www.economicregulator.tas.gov.au/Documents/18%201149%20%2020180514%20Special%20Gazette.pdf>

² See <https://www.esc.vic.gov.au/electricity-and-gas/electricity-and-gas-tariffs-and-benchmarks/minimum-feed-tariff>

³ See page 46, *The Hidden Costs of Electricity: Externalities of Power Generation in Australia*, Australian Academy of Technological Sciences and Engineering, Mar 2009

<http://www.atse.org.au/content/publications/reports/energy/hidden-costs-electricity.aspx>

⁴ See <https://www.auroraenergy.com.au/teels> and <https://nilstasmania.org.au/>

⁵ See <http://www.ata.org.au/news/time-varying-solar-feed-in-tariffs/>

⁶ For more explanation see <https://reneweconomy.com.au/this-is-huge-rule-changes-to-boost-solar-pv-and-batteries-99826/>

⁷ With current meter software, excess generation on tariff 31 is treated as exports and a FiT of 8.5c is paid, the energy then flows back into the tariff 41 circuit without leaving the building and is charged at 17.6c. For more information see <http://tasrenew.org.au/metering/>

⁸ For more information on smart meter rollout see <https://www.auroraenergy.com.au/metering>

⁹ For more details on voltage problems see <http://tasrenew.org.au/solar/overvoltage/>

¹⁰ see page 46 of the TasNetworks 2018 Annual Planning Report

<https://www.tasnetworks.com.au/our-network/planning-and-development/planning-our-network/>