

The Case for Switching to Gross Feed Tariffs
Using Markets to Set the Contract Price
Submission to Queensland Productivity Commission Forum
John Davidson 19 Nov 2015

SUMMARY:

This submission:

1. Argues that there are potential advantages to be gained by replacing the current **net Feed In Tariff (FIT)** system used for calculating the power bills of buildings with rooftop solar with a system based on **gross FIT**.
2. Also argues that consumers will benefit if the FIT contract price is set by market forces rather than depending on the Productivity Commission or other bodies to set this price.
3. Looks briefly at the benefits of battery storage under a gross FIT system.

A: Advantages of Gross Feed-in Tariffs (FIT's) Vs Net Feed in Tariffs

Switching to the gross FIT described in this submission will:

1. Make the financial benefits of rooftop solar more predictable.
2. Provide a mechanism that pays for the grid without being unfair to low power consumers.
3. Makes it easier for renters and landlords to calculate the benefit to renters of having rooftop solar on a dwelling.
4. Provides more encouragement for householders to reduce power consumption and improve efficiency.
5. Avoids money being wasted on batteries that provide no real benefit to the overall power supply system.
6. Reduces the incentive for householders to go off grid.

B: Using Market-Based Approaches to Set Contract FIT's:

The use of the Productivity Commission to set FIT's suffers from a number of problems:

1. It is a complex process that inevitably yields answers that some people are not happy with.
2. The hearings only happen every few years. Given the rapid drop in the costs of rooftop solar, a fair decision now may become over-generous by the time the next hearing is completed.
3. It depends on the price set to give some control of the uptake of rooftop solar.

(What is proposed here is a reverse-auction/competitive-tendering system that is simple enough to suit individuals who want an FIT contract before installing rooftop solar. **The outcome of this process should be FIT contracts that give a reasonable rate of return to householders** while helping to minimise the impact on the prices consumers pay.)

NOTE: This submission is not suggesting any changes to existing FIT contracts except by

mutual agreement.

C: Batteries:

Batteries have the following potential attractions under a gross FIT:

1. Batteries are a necessary part of any household system that allows power from the panels to be used during blackouts. AND/OR
2. Batteries can allow a household to buy all or most of their power off-peak. Apart from this price saving, connection with off-peak power helps stabilise the power supply system during power surges. (**NOTE:** The data on my Origin power bill 23 July to 26 Oct 15) suggests that the saving from buying off-peak power only for a typical house with 4 people would only save about \$235/yr) - AND/OR
3. Batteries can help the power supply system reduce the need for peak power and help stabilise the power supply system during power surges.
4. Batteries placed at the consumer end of power distribution systems that are approaching their capacity limit can eliminate or defer the need for expensive grid upgrades.

DETAILS:

A: Switching from Net to Gross Feed-in Tariffs :

Under the current **net FIT system** the householder:

1. Pays the normal electricity charges on all power that flows from the network into the house.
2. Is credited with the FIT for all the power that flows from the household into the network.

Given that the FIT is a much lower than the price householders pay for power, the nature of this net FIT system creates a number of problems:

1. The benefit to the householder depends on the extent to which the household consumes solar power during daylight hours. This uncertainty makes it harder to make investment decisions. It also makes it hard for a landlord and tenant to reach agreement re what rent increase is reasonable in return for a landlord installing solar.
2. The network owners are paid a proportion of the charge for power flowing from the network to the household. For this reason solar can significantly reduce network revenue because of the reduction in the amount of chargeable power for each solar-owning household. There is ongoing chatter on the web about the “network business model being broken” because of this.
3. Retailers have responded to the network problem by increasing fixed “supply charges” to the power bill, with the aim of increasing the bill of solar owners. Problem is that this unfair approach pushes up the bill of people like single pensioners, who consume very little power. Single pensioners end up paying more per kWh than those who live in multiple-person households or simply use a lot of power.
4. Batteries will make the above problems much worse because they will allow many householders to avoid importing power from the grid most of the time.
5. One of the responses to this manipulation of the power bill and low net feed-in tariffs is the talk of going off grid. For example, Greg Hunt is reported to have said recently that: “It is inevitable that large numbers will quit the grid with battery storage”. Going off grid when a house is already connected to the grid means that renewable energy is wasted.
6. Low net FIT's and high fixed supply charges reduce the incentive to save power, particularly during the time of day when there is surplus solar power.

Under the proposed **gross FIT system**:

1. A household is paid the FIT for ALL the power produced from the rooftop solar system.
2. A household pays for ALL the power consumed, no matter how much of this power comes from the solar system.

This gross FIT system overcomes or reduces most of the problems listed above for the net FIT system. In particular, it:

1. Helps avoid the network business model crisis.

2. Gives far more predictable benefits.
3. Avoids the need for unfair charging systems.
4. Restores the incentive to invest in energy efficiency.
5. Removes the main incentive to install batteries under the net FIT.
6. Reduces the incentive for houses that are already connected to the grid to go off grid. (However, there will still be an incentive to go off grid if there is too great a difference between the household charge per kWh and the FIT.)

NOTE: Gross feed in tariffs should be higher than net feed in tariffs since no high value savings are made if the solar power is used in the household.

B: Using Market-Based Approaches to Set Contract FIT's:

The use of the Productivity Commission to set FIT's suffers from a number of problems:

1. It is a complex process that inevitable yields an answer that some people are not happy with.
2. The hearings only happen every few years. Given the rapid drop in the costs of rooftop solar a fair decision now may become over generous by the time the next hearing is completed. This adds to the risk of solar being a boom/bust business.
3. It depends on the price set to give some control over the uptake of rooftop solar.

There are a number of ways in which a market-based system for setting contract FIT's could work. The following is an outline of **just one** such possibility.

1. The government periodically puts out a call for bids for FIT contracts. The call will specify the total installed kW that will be accepted and may put on other conditions.
2. Individual householders put in a bid for a contract stating the installed kW and the minimum FIT they are willing to accept for the contract.
3. When bids close, the government will accept bids starting with the lowest and continue until the total kW target has been reached or the bid prices are too high to be accepted.
4. All the successful bidders will be offered a contract **at the highest price accepted**. (Aim here is to encourage bidders to bid low so that they have a good chance of being accepted.)
5. The successful bidders will pay a deposit that will be repaid when their new system is working.
6. Successful bidders have a limited amount of time to sign a contract for installation of the system.

NOTE: Solar installers or others may be allowed to bid for some of the contracted capacity and be allowed to offer installation plus contract.

Key benefits include:

1. Competitive bidding helps keep prices low.
2. Calls for bids several times a year means that FIT's will drop in line with the falling price of solar.
3. The government has some control over the rate at which solar is being installed. (This helps make solar a stable business.)
4. The government can put limits on upper price and limit call for bids to particular areas, west facing houses, etc.

NOTE: that the predictability of returns under gross FIT's will help drive prices down during this bidding process.

C: What about Batteries?

Under **gross FIT systems**, batteries have the following potential attractions:

1. Batteries are a necessary part of any household system that allows power from the panels to be used during blackouts. AND/OR
2. Batteries can allow a household to buy all or most of their power off-peak. Apart from this price saving, connection with off-peak power helps stabilise the power supply system during power surges. (However, the data on my Origin power bill 23 July to 26 Oct 15) suggests that the saving from buying off-peak power only for a typical house with 4 people would only save about \$235/yr) - AND/OR
3. Batteries can help the power supply system reduce the need for expensive peak power as well as helping stabilise the power supply system during power surges. (Assumes that the power supply system has control over when the battery stores and discharges power.) AND/OR
4. Batteries placed at the consumer end of power distribution systems that are approaching their capacity limit can eliminate or defer the need for very expensive grid upgrades.

It is not clear to what extent a combination of the above benefits would justify the installation of batteries.

A number of ownership systems might be considered including:

1. Householder owns and operates the battery and gets no benefits apart from reducing the effect of blackouts.
2. Householder owns and operates the battery and receives contracted benefits from the power supplier. (Contract price might be set using something similar to the market process described in B above.)
3. Power company owns and operates the battery installed in the house in return for some benefits to the householder.
4. DC power from panels is connected to a larger battery and inverter shared by a number of households. May reduce costs and even out demand.

NOTE: Under net FIT systems there is the additional potential advantage of increasing the financial benefits of solar by allowing more solar power to be used in the household and less to be fed into the grid.

About John Davidson:

John Davidson is a retired Mineral Processing Engineer with a background in mining and construction. He gets some of his technical fix from thinking about climate change and the practicalities of reducing emissions.

John is strongly committed to the need to reduce greenhouse emissions and has solar on the house where he lives as well as on a rental property.

John is making this submission as an individual.