

What is Solar Power and How Does it Work?

Solar panels and an inverter are purchased and installed. Then paperwork is submitted and Tasnetworks comes to the site and replaces the power meter with a bi-directional smart meter which measures power taken from the grid and the power sent to the grid. Does it go into the house directly? Or is the demand in the house low and it is fed back into the grid? Electricity cannot stand still. So every millisecond power must either travel to the house to be used or travel outside to the grid. Where the solar panels on the house are producing more power than the house needs, power is fed into the grid and a credit is given on the customer's power bill. When the demand in the house is higher, the solar system will provide the power directly to the house and then the grid tops up the balance seamlessly. Then the meter counts the kw's drawn from the grid and also the fed in kw's as well. The inverter is a device that is installed between the solar panels and the switch board and its purpose is to convert the DC power produced by the solar panels to AC power which can be used by the house and also can be fed into the grid. The inverter is connected to the Tariff 31 (lights and power) section of the house supply.



What is a feed in tariff (FIT)?

A feed in tariff, or FIT, is the credit given to a solar owner on their power bill for the amount of power fed into the grid. At the moment it stands at 5.51 cents for each Kwh of power fed in.

Feed in Tariff History

In the past Aurora had been voluntarily offering a 1:1 feed in tariff to solar customer. This means they were paying customers the same price for the power they fed into the grid as what they were paying for power when they drew it from the grid. The price of power was 26.8 cents then 28.282 cents per Kwh and the feed in tariff credit was 26.8 cents then 28.282 cents, thus matching the then current T31 rate that applied in that billing period.

After the transition to full retail competition (FRC) was announced, an issues paper was released by the energy minister Bryan Green which was responded to by a number of industry people and meetings were held. There were quite a number of technical faults in the issues paper, so a supplementary paper was released with the changes to the technical parts. The Economic Regulator was issued with terms of reference for determining the Feed in Tariff (FIT) and they produced a draft report. Then a final report was produced (still with errors) and a FIT arrangement was made. The feed in tariff was set at 8.282cents per Kwh.

Just recently the price of power was reviewed and changed and also the FIT was reviewed and changed. July 1 saw the wholesale cost fall by 9.4% and after further adjustments, the retail price of power fell by 7.8% and the feed in tariff was reduced to 5.551 cents per Kwh. The

main reason given was the expected passing of the carbon tax repeal bill in federal parliament however this appears untrue. The overall drop was only 7.8% because there were price rises built into the power price determination by the TER originally to allow for extra marketing costs and a 2.1% lowering in the line losses when full retail competition was introduced. Surprisingly, the TER could not determine the somewhat minor reduction figure pertaining to the demise of the carbon tax!

The next part gets a little more complicated but is just as important to understand. Feed in Ratios. The feed in ratio is the relationship between how much power is used from the solar panels directly and how much power is fed into the grid. The ratio for each household will be different. The depending factors are mainly to do with the times of the day that the homeowners use their power. Do they use their power mostly at night time? Or are they home during the day and use plenty of power then? Remembering that it is connected to tariff 31 (lights and power) only. Brian Green's initial comments as the then Minister that was to see Aurora find a solution to this situation within a month. This directive dissipated from the light of day, perhaps due to the cost to implement such an outcome.

The solar industry in their system of quoting generally quote 50% used off the roof and 50% fed into the grid (50:50). Our research would indicate that a household where families are out during the day are more likely to be 30% used off the roof and 70% fed into the grid. Where as a person who works from home or a small business, for instance, will generally feed in a lot less power because they consume a lot of power during the day. A Jessups case study has revealed that a 9am-5pm 5 day a week small business in Invermay Launceston feeds in about 12.8% of the solar power produced into the grid. We see these examples as typical.