Nine ways to maximise the financial benefit from your surplus solar energy

Published on 100 Percent Renewables website: January 30, 2019

1 Negotiate a good Feed-in-Tariff (FiT)

Your exported solar electricity has a value, which is equal or close to the wholesale electricity market price. Many retailers will offer feed-in rates with most drawing on annual guidance by IPART on appropriate FiT rates or ranges. Some retailers will offer a fixed rate, while others will offer a credit at the same Time-of-Use (ToU) retail rate that applies when the electricity is exported.

You should review your current agreements for treatment of excess solar energy generation, and look to agree on a fair rate or specify this requirement in your next retail energy negotiation.

2 Find a retailer who is willing to net off your supply and demand

If no FiT can be negotiated, then crediting export to another site could see savings at the receiving building's full retail electricity rate. Although we are not aware of such an arrangement at a small scale, you may be able to negotiate this with your retailer.

It is possible to assign generation from one site to another, but to do this, the following needs to be in place:

- You need to find a willing retailer
- The retailer needs to have a billing system that allows for the assignment of generation on a time of use basis – a tricky issue for tier-1 retailers with legacy billing systems.

There is an example for this scenario with a Power Purchase Agreement undertaken by the University of Technology Sydney (UTS). UTS and its electricity retailer have agreed to 'pass through' generation from a 200 kW Singleton solar PV farm to UTS' Broadway campus. However, the electricity from the Singleton solar farm only makes up 2% of UTS' total load.

3 Ask your network provider for local network sharing tariffs

Historically, network pricing has not considered the proximity of a consumer to a prosumer. However, this needs to change to reflect that the grid is changing to two-way energy flows. If more and more customers ask for this, change can happen.

There are trials underway where network providers have agreed to a new local sharing network tariff. The town of Newstead in Victoria, for instance, has been able to develop a local sharing tariff (for a 2-year trial) with Powercor.

Thus far there are no similar arrangements in place in NSW, though discussions are ongoing. Enova Energy and Essential Energy, for instance, are trying to develop a local generation tariff in the Byron Bay Arts and Industrial Estate.

4 Consider an embedded network

An embedded network is a private network, in which only one parent meter is connected to the grid. Behind that parent meter, several customers are being supplied with electricity, with the Embedded Network Operator controlling how the private network operates.

The operator buys the electricity for the embedded network from a retailer and onsells the energy, usually at a discount to market. In order to set up an embedded network, you need to get a retailer exemption from the Australian Energy Regulator (AER).

Embedded networks are common in caravan parks, business parks, shopping centres, apartment blocks, office buildings, airports and university campuses. They are relatively easy to set up from scratch but expensive to retrofit.

An embedded network may work for you if you are looking to share your excess solar electricity with tenants in the same building that your organisation owns.

5 Use battery storage to increase self-consumption from solar

Instead of sending the excess solar electricity into the grid, you could send it to an onsite energy battery storage system. You can then use this stored energy to supply you with power during times when the sun doesn’t shine, or to help you reduce your peak demand.

Unfortunately, at this stage, the costs of battery storage are still high. This is particularly the case where you export most of your energy during weekends. You would need a large battery to deliver cost savings during working weekdays.

If used primarily to trim peak demand further then the business case will be a little better as a smaller-size battery will be required.

6 Solar with battery storage in a virtual power plant (VPP)

The NSW Government recently announced plans to develop a 200 MW Virtual Power Plant (VPP) that will harness the capacity and stored energy in household and business batteries to provide dispatchable energy during peak network demand periods, typically hot days in summer. This is being developed under the Smart Energy for Homes and Businesses program which is expected to launch early in 2019.

Stored energy can also have value by being capable of being aggregated with other batteries to bid into the wholesale market. This is a key part of some pre-existing VPPs such as Powershop-Reposit's Grid Impact product, and similar VPPs in other jurisdictions such as the ACT, with a large-scale VPP in development in South Australia.

7 Consider a microgrid

If you are also interested in sharing energy for the purpose of increasing your resilience in the event of a grid failure you can consider a microgrid. Customer-level microgrids and embedded networks are similar, where you are looking to share energy in a private distribution network. The main difference is, however, that the microgrid can disconnect from the main grid.

A microgrid works best in conjunction with battery storage large enough to still supply you with power, even during a blackout.

8 Peer-to-peer solutions like PowerLedger or Greensync

At this time a number of trials of P2P have been progressing, with most commercial projects occurring in strata or similar precincts where energy can be shared behind the main meter. This is because, currently, P2P solutions are easiest to set up in embedded networks.

If the P2P solution is outside an embedded network, where energy is shared between sites via the grid, you need the cooperation of a retailer offering a product that stacks up with credits from the distribution network provider.

For more information on P2P energy trading trials, you can read our blog post on peer-to-peer energy trading.

9 Consider a portfolio approach

Last, but not least, you should always consider a portfolio approach when maximising your financial benefits of solar. Every time you go to market for a new retail contract, you need to evaluate options that give you the bests financial return overall for your portfolio of assets. In

addition to evaluating solar export, you may also want to pair this with demand flexibility mechanisms.

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