IPART
Independent Pricing and Regulatory Tribunal
New South Wales

SOLAR FEED-IN TARIFF BENCHMARK

2019-20

April 2019

SOLAR FEED-IN TARIFF BENCHMARK

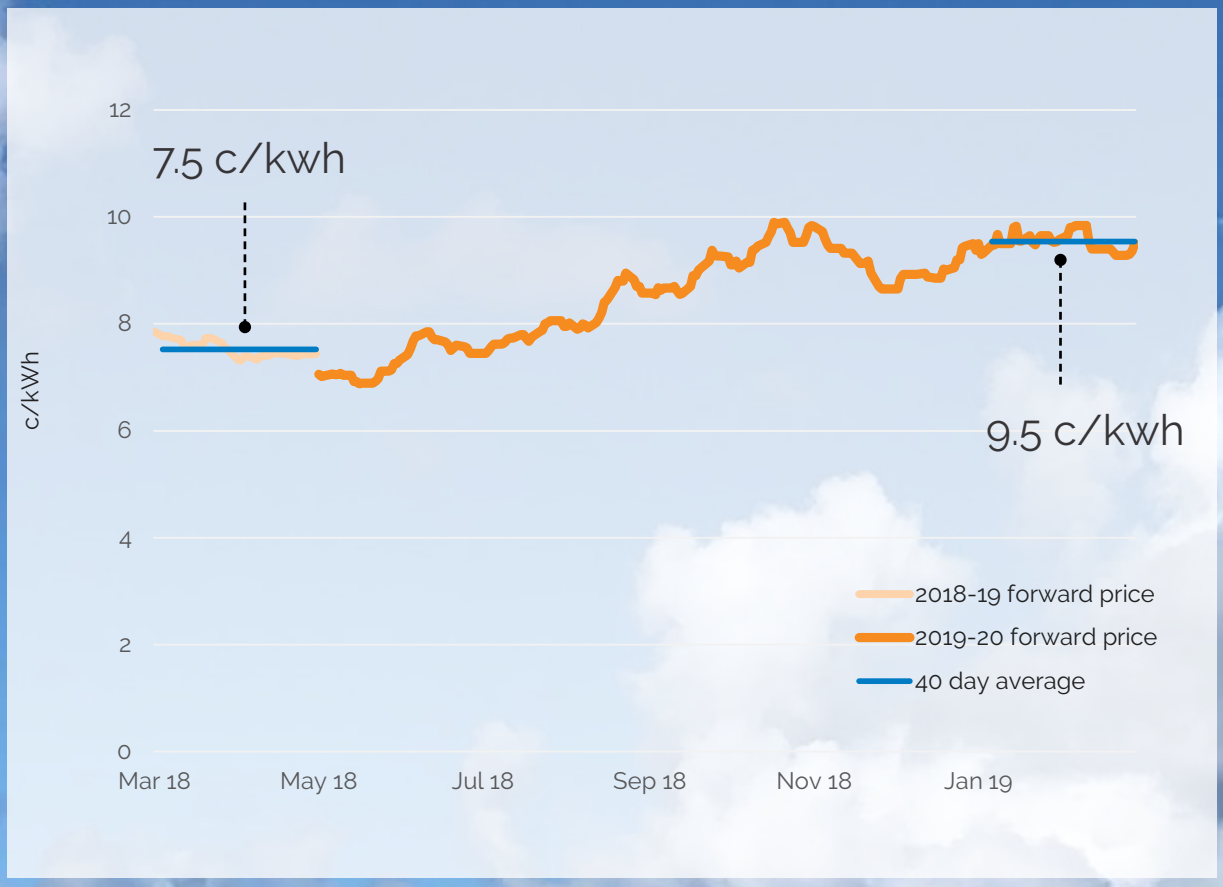
Households and small businesses with solar panels can earn a feed-in tariff from their retailer for the electricity they export to the grid.

In NSW, retailers can choose whether or not to offer solar feed-in tariffs to their customers, and decide the level of the solar feed-in tariff that they offer. However to help guide retailers and customers, the NSW Government has asked IPART to recommend a benchmark range for solar feed-in tariffs each year.

Our benchmark range for 2019-20 is
8.5 to 10.4 c/kWh

IPART sets the benchmark rate for solar households at the same price as what it would cost retailers to buy electricity from large generators. This means solar feed-in tariffs will go up and down with changes in the wholesale electricity price, and so we update the benchmark range each year.

Our benchmark range for 2019-20 is higher than last year because the forecast wholesale price is higher



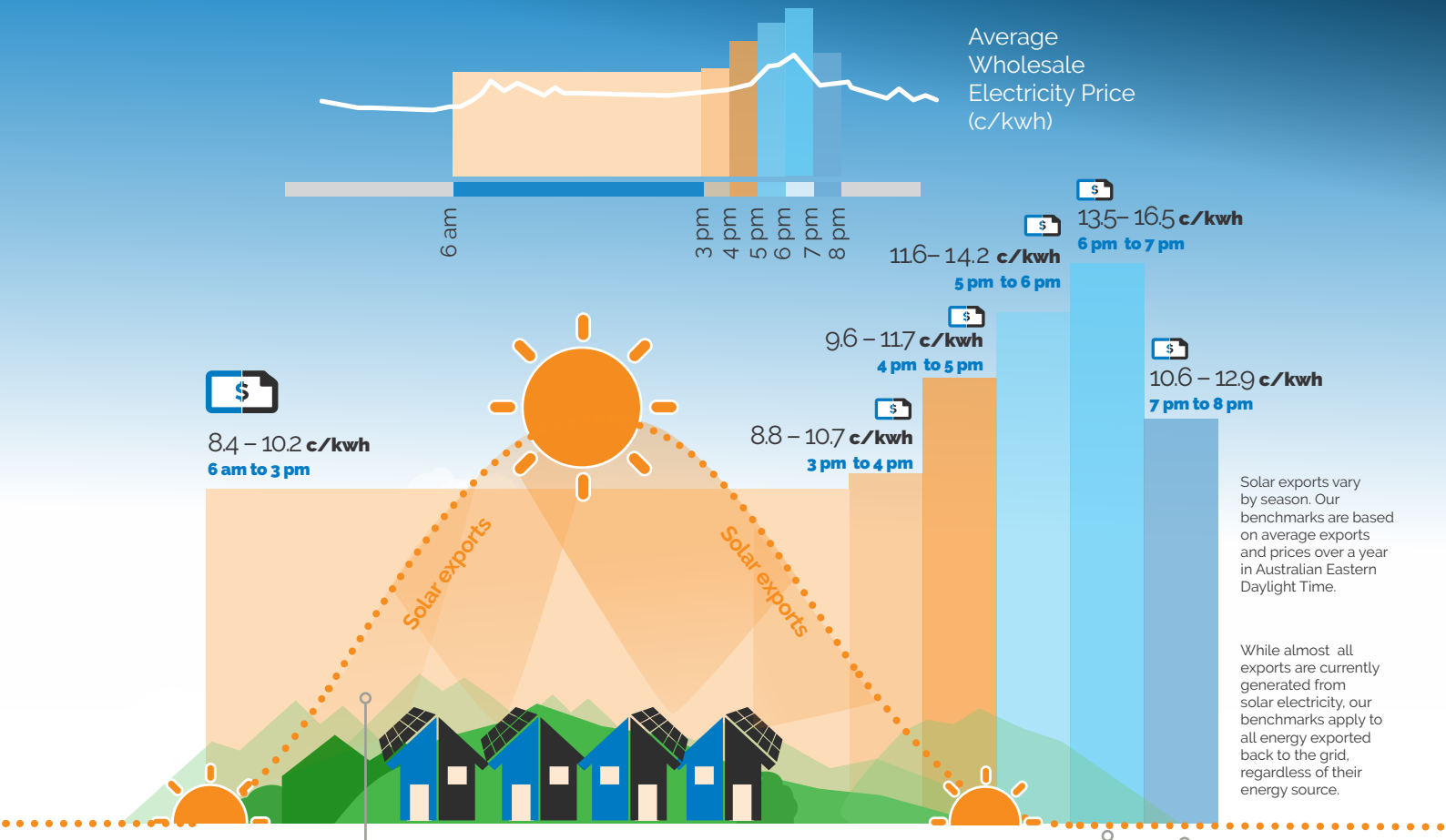
ASX electricity base strip prices (daily close price)

We have also set benchmarks for different feed-in tariffs at different times of the day

The price of wholesale electricity changes across the day. Typically, wholesale prices are:

- lower late at night (when demand is lowest) and through the middle of the day (when solar energy meets a proportion of demand), and
- high in the late afternoon and evening (when demand is highest, and when solar energy meets little or none of this demand).

Retailers may offer different feed-in tariffs throughout the day to reflect this variation in wholesale prices. Our time-dependent benchmarks provide guidance about the value of exports at different times. But retailers do not have to offer a time-dependent option for customers, and most are continuing to only offer an average rate for all exports.



Solar exports vary by season. Our benchmarks are based on average exports and prices over a year in Australian Eastern Daylight Time.

While almost all exports are currently generated from solar electricity, our benchmarks apply to all energy exported back to the grid, regardless of their energy source.

Between 6 am and 3 pm (when 86% of solar exports occur) there is **not much variation** in wholesale prices

Highest value solar between 6 to 7 pm - but less than half a per cent of solar exports occur at this time

Feed-in tariffs in the evening provide a signal for the value of **battery exports** after the sun has set

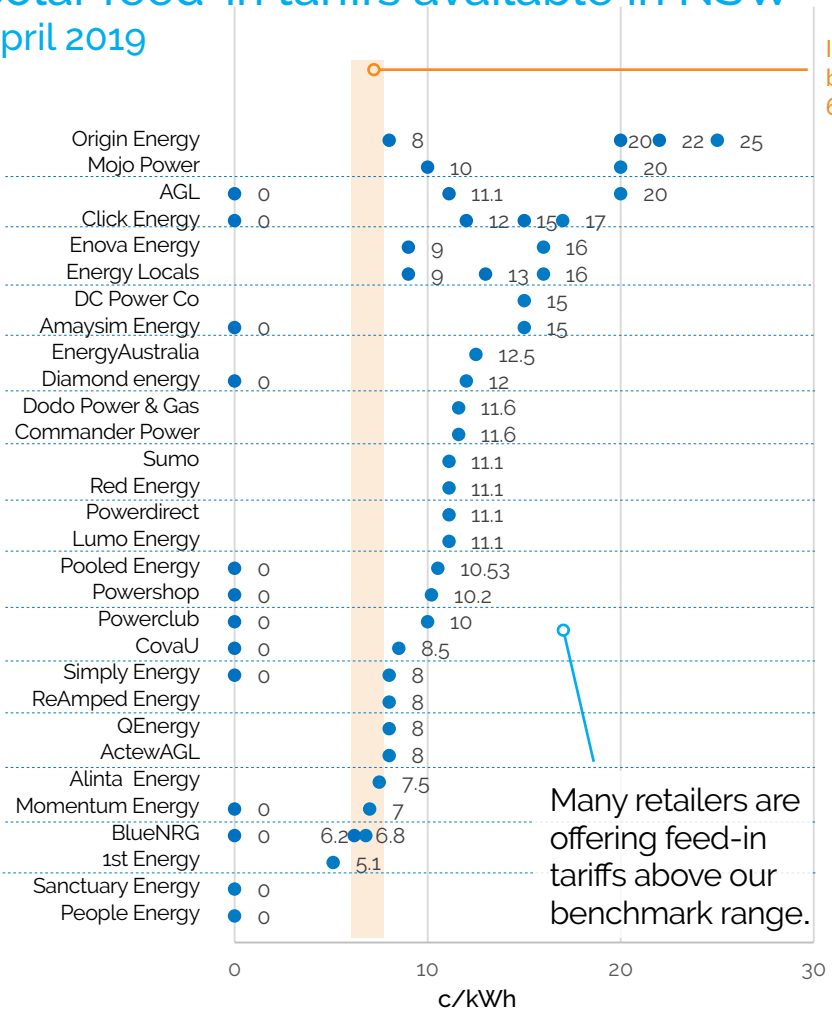
HOW CAN I GET THE BEST DEAL?

You can shop around for a feed-in tariff using the Australian Government's website Energy Made Easy.

However, the savings you can make by using the electricity from the solar panels in your own house are usually much bigger than the revenue from feed-in tariffs. Therefore, the offer with the highest feed-in tariff may not be the best overall deal. You should consider all aspects of an energy offer, including usage and fixed charges, feed-in tariffs and other terms and conditions.

IPART has an Excel tool to help compare bills for offers with different feed-in tariffs and retail prices.

Solar feed-in tariffs available in NSW
April 2019



The offer with the highest feed-in tariff may not be the best overall deal.

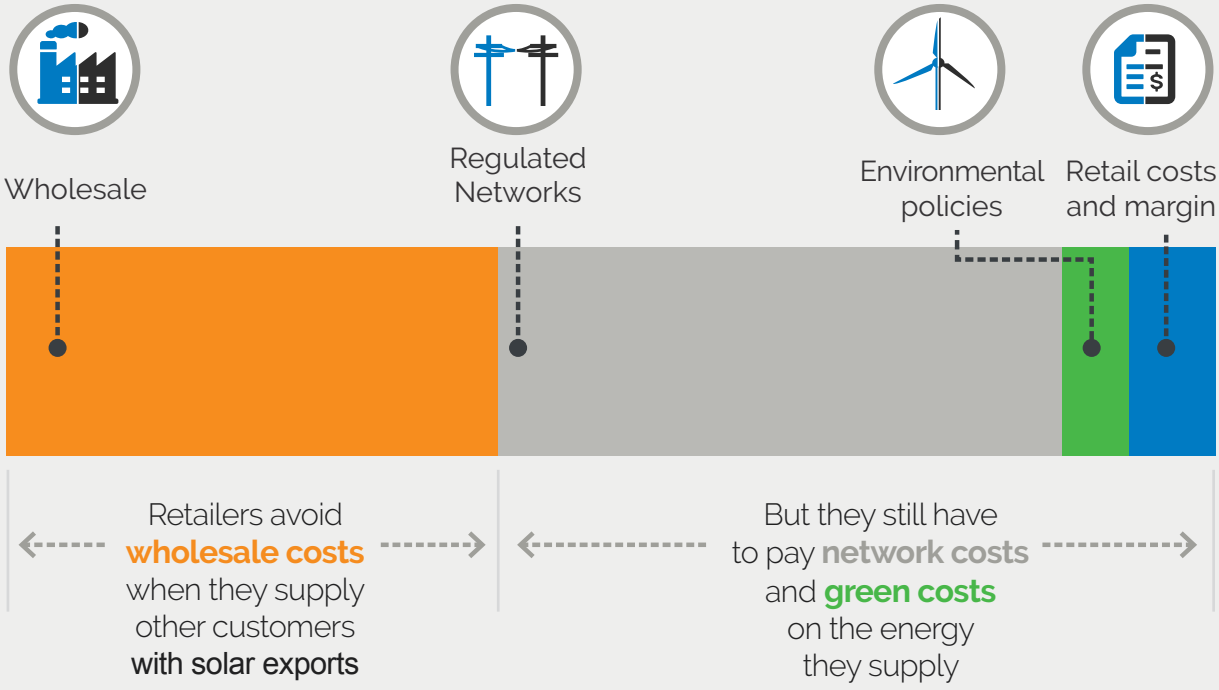
Note: Actew AGL does not supply in the Ausgrid network, Pooled Energy does not supply in the Essential Energy network, and Enova is only offering in the Essential Energy network.

Why is the benchmark lower than what I pay for electricity?

Customers pay around 20 to 30 c/kWh for the electricity that they buy from their retailer, but we forecast that the value of the solar electricity they export back into the grid is worth 8.5 to 10.4 c/kWh.

The feed-in tariff benchmark reflects the savings to retailers because they do not have to buy this electricity from the wholesale market. The wholesale component accounts for **around a third to half of the total costs** of supplying electricity. Retailers still incur network and green scheme costs when they supply these solar exports to other customers, which means that the savings to retailers from solar energy are less than the value of retail prices.

Retail cost components



Why doesn't IPART set a higher benchmark?

If all retailers paid a feed-in tariff of 25 c/kWh, the average annual household bill would need to increase by around $45.

Even if IPART set a higher benchmark, retailers would not have to pay customers more for their solar energy because offering a feed-in tariff is voluntary for retailers.

But if all retailers did pay a higher feed in tariff, this would result in higher costs to retailers, which would mean that they would have to increase their prices. For example, if all retailers paid a feed-in tariff of 25 c/kWh (equal to the current average retail price of electricity), the average annual household bill would need to increase by around $45 (to recover additional costs of $120 million each year).[1]

All electricity customers already pay an average of around $31 per year to customers with solar panels to subsidise the upfront installation costs under the Small-Scale Renewable Energy Scheme, as well as an average of $56 per year for other 'green costs' (including subsidies for the Renewable Energy Target, the climate change fund, and the Energy Saving Scheme).[2]

Households without solar panels should not have to pay even higher retail prices to reduce the bills of customers with solar panels. This would disadvantage the households who are unable to install a solar system themselves (for example, because they rent or they cannot afford the upfront costs).

On the other hand, the average bill for a solar customer is around $450 lower than customers without solar panels (not including revenue earned from solar feed-in tariffs) because of the savings they can make using their solar electricity instead of having to buy it from their retailer.[3]

1. Based on total estimated solar exports, and forecast number of households in NSW, using data from networks on solar exports and number of solar customers, and data from ABS 2016 Census data and New South Wales Department of Environment and Planning for forecast of number of households (4% growth assumed since 2016 based on average annual growth 2016-2021). See ABS, '2016 New South Wales (STE) Community Profile', cat. No 2001.0, Table G32, http://www.planning.nsw.gov.au/Research-and-Demography/Demography/Population-projections. Estimates may understate the total annual solar output, as the numbers are based on number of solar panels and export profiles as no growth factor has been applied or 2019-20 to latest available customer numbers. This would result in an underestimate of additional costs to retailers and customers.
2. AEMC, *2018 Residential electricity price trends report,* Dec 2018, p 71.
3. Based on a customer with a 2 kW system. This represents an ongoing saving to customers after their payback period (which is currently approximately 6-8 years)

Shouldn't the feed-in tariff include a value for avoided carbon emissions?

Solar customers receive an upfront subsidy for installing their panels under the Small-Scale Renewable Energy Scheme (SRES). For a 2 kW solar system installed in Sydney, the subsidy is currently worth around $990 to $1,254.[4]

The aim of this scheme is to reduce emissions of greenhouse gases and encourage the additional generation of electricity from sustainable and renewable sources.

Further payments to customers through a higher-feed in tariff would mean that these would have to be recovered through higher electricity prices. The NSW government has asked us to set a solar feed-in tariff benchmark that does not result in higher retailer prices.

What about savings to networks of having to transport less electricity from remote locations?

When households are supplied with energy from large generators, some of the energy is lost from transporting it over long distances. Because solar exports reduce these losses by around 6%, our methodology increases the wholesale value of solar exports by around 6%.

Solar panels also have the potential to lower network costs by deferring network expenditure where it reduces demand on the network at peak times. However this only occurs on limited parts of the network. In many parts of the network, solar exports are unlikely to contribute to meeting peak demand on the distribution and transmission networks because the peak occurs in the late afternoon when the proportion of exports is very low. In these areas, solar exports are unlikely to defer network costs.

In other areas, large volumes of solar exports are driving higher network costs due to additional investment required to support the bi-directional flows of electricity to handle the volume of solar exports.

Recent reviews by the AEMC and the Victorian Essential Services Commission (ESC) concluded that potential network benefits are too variable between location, across times, and between years to be well suited for remuneration via a broad-based tariff.

4. Based on small-scale technology certificate (STC) price of $30 to $38, and data from Clean Energy Regulator, REC Registry, https://www.rec-registry.gov.au/rec-registry/app/calculators/sgu-stc-calculator, accessed 8 April 2019.

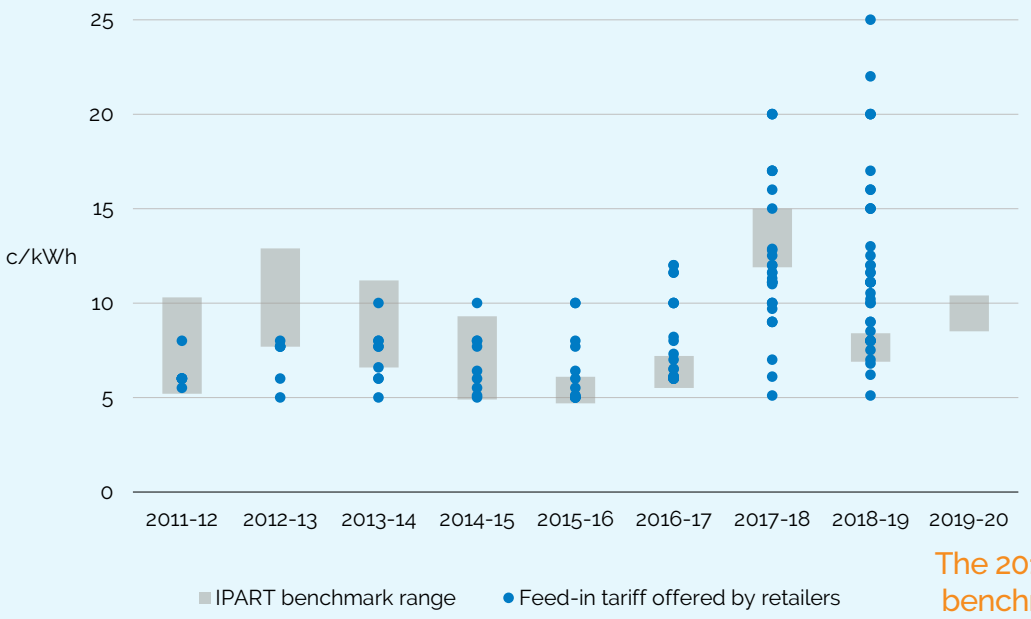
But doesn't solar help reduce wholesale prices?

Solar panels can help reduce wholesale prices during the day by increasing the supply of electricity in the market. But this in turn can cause other generators to exit the market faster, leading to higher prices in the medium term, particularly in the evening when the sun goes down.

Like the other generators that impact prices, solar customers should not be additionally compensated or penalised for their impact on wholesale prices. For example, a new gas generator or wind turbine that contributes to reduced wholesale spot prices does not receive any additional payment to reflect the lower wholesale price. It takes the same market price as all other generators, and so all customers benefit from lower prices.

Likewise, a customer who consumes electricity by switching on an appliance and thereby increasing the market demand for electricity and electricity prices for all customers is not required to compensate the other customers for these higher prices. These are normal outcomes of a competitive market.

How does the benchmark for 2019-20 compare to previous years?



The 2019-20 benchmark is similar to previous years

In each year retailers have offered a range of feed-in tariffs, with many tariffs above our benchmark.

Benchmark components for all-day solar feed-in tariffs in 2019-20 compared to 2018-19

	2018-19	2019-20
Estimated average wholesale spot price	6.4 to 7.9 c/kWh	8.2 to 10.0 c/kW
ASX baseload forward contract for the 12 month period 2018-19 using the 40-day average price	7.5 c/kWh[a]	9.5 c/kWh[b]
% range for uncertainty	+/-10%	+/-10%
Adjustment to remove contract premium	5%	5%
Solar multiplier - average price of electricity when solar is exporting, compared to average price across the day[c]	0.99	0.98
Network loss factor – retailers need less solar energy compared to from large generators because energy is not lost from transporting it over large distances	1.07[d]	1.06[e]
NEM fees and charges – retailers avoid these costs when they supply their customer with solar	0.08 c/kWh	0.08 c/kWh
Benchmark tariff	**6.9 to 8.4 c/kWh**	**8.5 to 10.4 c/kWh**

a As at 15 May 2018 | **b** As at 15 March 2019 | **c** Based on solar export data in the Ausgrid network | **d** Using marginal loss factor as supplied by AEMO in May 2018 for 2018-19 | **e** Based on statewide draft marginal loss factor as supplied by AEMO in April 2019.

The all-day feed-in tariff is calculated according to the following formula:
(Upper and lower end of estimated average spot price range x solar multiplier x network loss factor) + NEM fees and charges.
We have updated the inputs for 2019-20, but we have used the same methodology for calculating the solar feed-in tariff benchmark as for 2018-19.

Where can I find out more information?

For more information on our methodology for calculating the solar feed-in tariff benchmark see: https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/pricing-reviews-energy-services-publications-solar-feed-in-tariffs-201819/final-report-solar-feed-in-tariff-benchmarks-201819-june-2018.pdf

For more information on installing and connecting solar panels and battery systems, see https://energysaver.nsw.gov.au/households/solar-and-battery-power.

What's next?

IPART will update its solar benchmark again in April 2020-2021.

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