FACT SHEET

# Solar feed-in tariffs in 2016-17

June 2016

This Fact Sheet outlines IPART's final decisions on solar feed-in tariffs in 2016-17, including the:

- **benchmark range** – which is a guide to the unsubsidised value of solar feed-in tariffs that some electricity retailers voluntarily offer to customers who are not part of the NSW Solar Bonus Scheme, and
- **retailer contribution** – which is the amount that NSW electricity retailers must contribute towards the cost of subsidised feed-in tariffs (either 20 or 60 cents per kilowatt hour) paid to customers in the NSW Solar Bonus Scheme. This scheme is due to end on 31 December 2016.

## 1 Our final decisions for 2016-17

Our final decisions are summarised in Table 1 below.

**Table 1 Solar feed-in tariffs 2016-17 (cents / kilowatt hour, including inflation)**

| | 2015-16 Final decision | 2016-17 Final decision |
|---|---|---|
| Benchmark range | 4.7 – 6.1 | 5.5 – 7.2 |
| Retailer contribution | 5.2 | 6.1 |

Both the benchmark range and retailer contribution for 2016-17 are higher than in 2015-16. This is due to an increase in the outlook for wholesale electricity prices. Since our final decision in October last year, ASX forward prices for wholesale electricity have increased by around 19%.

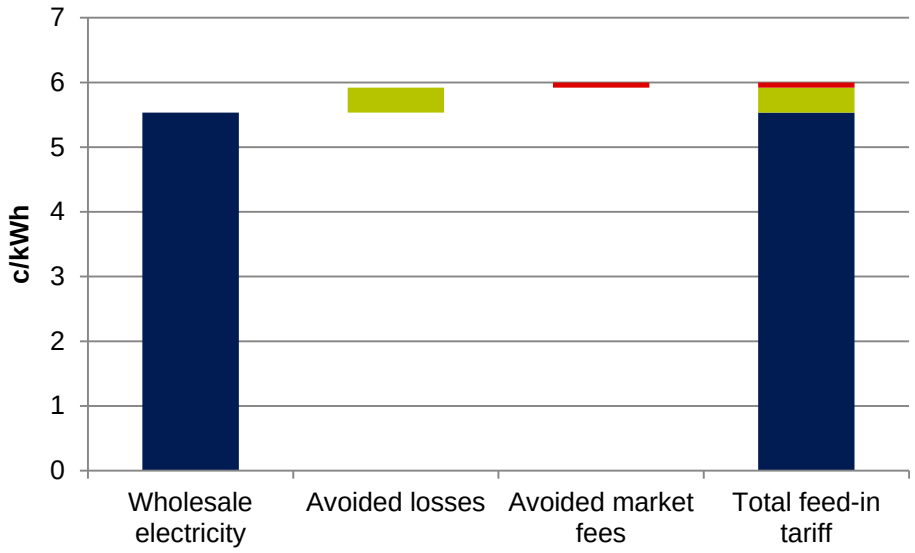
## 2 How we made our final decisions

As part of the 2015-16 review, we undertook to update our solar feed-in tariff decisions this year using the same analytical approach but with updated market information.

While we will consult on our approach from time to time, for this review we have applied our current methodology and updated market information to both the benchmark range and the retailer contribution. In May 2016, we consulted with key stakeholders on the results of our update. We received one submission that supported our approach. More information is provided in Appendix A.

A summary of the main components that make up the value of solar feed-in tariffs under our current methodology is in Figure 1. As indicated below, the most important factor determining the value of solar feed-in tariffs is the outlook for wholesale electricity prices in 2016-17.

**Figure 1 What makes up the value of solar feed-in tariffs?**




**Note:** Based on a feed-in tariff of 6 c/kWh.

**Data source:** IPART.

# 3 Information for solar customers

All households and small businesses with solar panels can shop around for a better deal on their electricity rates and feed-in tariffs. The Australian Government's website, www.energymadeeasy.gov.au is a good source of independent information on what's on offer in the market.

The Solar Bonus Scheme ends on 31 December 2016. For those customers who are part of this scheme, the NSW Government have provided information on its website about what customers need to do, as well as some frequently asked questions http://www.resourcesandenergy.nsw.gov.au/energy-consumers/solar/solar-bonus-scheme.

# A Wholesale market value method

In this appendix, we summarise the wholesale market value method we use to update the benchmark range and retailer contribution. Full details are provided in our October 2015 Final Report.[1]

The wholesale market value method treats solar PV customers similar to other generators in the market, and estimates the value of solar electricity exported to the grid as if it could be sold on the wholesale market at the time it was exported. This arrangement is hypothetical as small scale PV customers generally do not sell their exported energy on the wholesale market.

The wholesale market value method calculates the value of solar feed-in tariffs (c/kWh) as follows:

*Forecast average wholesale price* × *solar premium* × *loss factor* + *NEM fees and charges*

## A.1 Forecasting average wholesale electricity prices

We calculated forecast average wholesale electricity prices for NSW in 2016-17 using forward market contract prices. We used daily prices of NSW Base Load electricity contracts for 2016-17 traded on the ASX. To estimate average spot prices from the ASX forward contract prices, we:

- calculated a 40-day trading average of the ASX contract prices for 2016-17 as at 1 June 2016, and
- removed an assumed contracting premium of 5% from the average price to arrive at a forecast average spot price of $46.44 for 2016-17.

## A.2 Solar premiums

The solar premium measures the relative value of solar PV exports compared to a flat output profile (ie, an equal amount of PV exports through the day). It is calculated as the ratio of solar PV output-weighted electricity price to the time-weighted electricity price, where:

- solar PV output-weighted electricity price is the average price across the year weighted by how much solar is exported at the time, and
- time weighted electricity price is the arithmetic average price across the year.

The solar premium captures how much solar PV exports occur at high or low price times. If more solar export occurs during the time when spot electricity prices are high, this will increase the output-weighted price relative to the time-weighted price and the resulting solar premium will be greater than one. If an

1 IPART, *Solar feed-in tariffs – the subsidy-fee value of electricity from small-scale solar PV units in 2015-16 – Final Report*, October 2015.

equal amount of solar PV is exported throughout the day, the solar PV output-weighted price will be equal to the time-weighted price and will be one.

Solar premiums are generally greater for gross metered customers than for net metered customers. Net metered customers tend to consume when prices are high, and so export less in high price times. Reductions in solar PV exports at high price times are reflected in a lower output-weighted price and hence lower solar premiums. The difference in the estimated solar premiums (and hence the values of PV exports) between gross and net metered customers is decreasing as prices in recent years have become less volatile with less high price events during the day.

We have not updated solar premiums for this review, as those estimated in our review last year already reflect the most recent complete year data on solar PV exports (2014-15). More information on solar premiums is provided in last year's report.[2]

## A.3 Weighted average loss factor

PV exports tend to be consumed close to where the electricity is produced, so the energy losses that usually arise as electricity flows through the transmission and distribution network are avoided. To account for the value of these avoided losses, we gross up solar PV generation to the NSW node using an estimated loss factor. This ensures the benefit of being located close to where PV exports occur is included in the value we estimate.

For our review this year, we updated our weighted average loss factor across all three distribution network areas in NSW, accounting for both transmission and distribution line losses. In particular, our loss factor is calculated as $MLF \times DLF$, where:

- *MLF* is transmission line losses between the Regional Reference Node (RRN) and each bulk supply connection point for 2016-17, weighted by actual energy consumption at each connection point, excluding industrial customers.
- *DLF* is distribution loss factors for small customers for 2016-17, weighted by customers' actual consumption.

Table A.1 sets out weighted average transmission and distribution loss factors and the overall loss factor applied to our calculation of the wholesale market value of PV exports. The overall loss factor for 2016-17 is 1.07.

2 IPART, *Solar feed-in tariffs – the subsidy-fee value of electricity from small-scale solar PV units in 2015-16 – Final Report*, October 2015.

**Table A.1NSW weighted average loss factors for 2016-17**

| | Transmission loss factor (MLF) | Distribution loss factor (DLF) | Overall loss factor |
|---|---|---|---|
| NSW average | 1.00 | 1.07 | 1.07 |

**Source:** Ausgrid, Endeavour Energy, Essential Energy, AEMO and Secretariat's calculation.

## A.4 NEM fees and ancillary charges

Retailers pay National Electricity Market (NEM) fees, which include market fees and ancillary charges based on the amount of electricity they purchase from the NEM. Because these charges are levied on retailers' net purchases as measured by the Australian Energy Market Operator (AEMO), they avoid having to pay these costs for the amount of electricity their customers export to the grid. NEM fees are very small compared to the other costs of supply, so avoiding them provides a small financial gain to retailers.

Our updated NEM fees and ancillary charges for 2016-17 are 0.082c/kWh, which is the sum of:

- NEM fees for 2016-17 of 0.039c/kWh as reported by AEMO, and
- our estimated ancillary service charges of 0.043c/kWh given by the average ancillary service charges from 1 January 2013 to 29 April 2016 (reported by AEMO).

Our updated NEM fees and ancillary charges for 2016-17 are marginally lower relative to our 2015-16 review (0.087c/kWh).