

SUBMISSION TO ESSENTIAL SERVICES COMMISSION  
**Minimum electricity feed-in  
tariffs to apply from 1 July 2018**  
DRAFT DECISION



*January 2018*

The Alternative Technology Association (ATA) welcomes the opportunity to respond to the Victorian Essential Services Commission's Draft Decision on minimum feed-in tariffs (FiTs).

Founded 38 years ago, the ATA is a national, not-for-profit organisation whose 6,500 members are (mostly residential) energy consumers.

Our extensive experience in energy policy and markets informs our advocacy and research which, amplified by our close collaboration with fellow members of the National Consumer Roundtable on Energy, makes the ATA an important voice for energy consumers Australia-wide.

ATA has a uniquely twofold perspective as a consumer advocate. With the continuing support of the Energy Consumers Australia (and formerly the Consumer Advocacy Panel) we represent all small energy consumers in advocacy that seeks to improve energy affordability and the structure and operation of the National Energy Market (NEM). Additionally, we speak with authority on behalf of the growing portion of the consumer base that has an interest in demand-side participation and innovative energy products and services.

## Overview

The ATA is generally supportive of the Commission's approach to more cost-reflective FiTs, as such FiTs reduce cross-subsidies in the electricity system and encourage renewable energy system owners to export electricity when it provides the most value and benefit to the electricity grid. It makes sense that the value of electricity fed into the grid around midday is reducing due to the increase in supply at those times of day, thanks to the large amount of new solar capacity being added.

However we have some concerns in the following areas:

- Guidance for consumers and the renewable energy industry.
- Methodology:
  - o solar export profile; and
  - o clarity of different approaches to calculating energy value for FiTs.
- Treatment of customers still on the Premium FiT.

We also have some concerns with aspects of the FiT regime that are closely related to but may fall outside the scope of this decision:

- Delay in introducing the critical peak FiT.
- Valuing avoided human health costs and the social cost of carbon

ATA recommends that the Commission and the Victorian government take these points into consideration when finalising and communicating the new FiTs.

## Guidance for consumers and the renewable energy industry

The proposed new FiT structure from 1 July 2018 poses some challenges to renewable energy buyers, renewable energy owners, and renewable energy retailers.<sup>1</sup> These must be considered and addressed as part of the implementation.

When considering the purchase of a renewable energy system, a primary criterion for most buyers is the estimated annual saving off their electricity bill, along with related measures such as the payback time. Consequently, being able to calculate these figures is critical to renewable energy retailers making sales, renewable energy advisers assisting households considering purchasing a system, and households themselves figuring out what size system to buy.

With a flat-rate FiT, estimating bill savings is relatively straightforward. All that's required for a quick analysis is an estimate of annual renewable energy generation, grid tariffs and an assumption on the overall proportion of renewable energy generation that's exported to the grid. This export percentage can be obtained from simple look-up tables, or by simulation using a tool such as Sunulator.<sup>2</sup> These methods are well understood by renewable energy retailers and advisers, and well-informed electricity consumers. Several free web-based calculators are available, for example ATA's Basic Solar Advice.<sup>3</sup>

With a time-variant FiT (referred to here as TvFiT) it becomes much more complex to estimate bill savings from a renewable energy system. An additional estimate is required for the proportion of exports in each period (Off peak, Shoulder and Peak), which must take into account electricity consumption patterns and PV panel orientation in much greater detail.

**Under TvFiT, it will be much more difficult for households buying home generation systems to estimate the bill savings of systems or verify savings claimed by system retailers.** It will also be more difficult for renewable energy retailers to make such estimates, and this may negatively affect the quality of information available to renewable energy customers.

During the transition year, payback estimates for the flat-rate FiT option<sup>4</sup> being much simpler than for the TvFiT will make the choice between them more difficult and confusing for both new and existing renewable energy customers. After the transition is complete, renewable energy owners and buyers will need help assessing the likely bill impacts of the TvFiT on their specific situation in order to make a fully informed choice when purchasing a renewable energy system or changing energy offers.

**ATA recommends that Commission provides guidance via an online calculator that estimates export percentages of solar PV systems during the shoulder and peak periods.** This calculator would be based on modelling of different household profiles with different sizes and orientations of solar PV systems.

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<sup>1</sup> In this submission, the terms renewable energy customers and retailers refer to the buyers and sellers of renewable energy systems.

Currently these systems are overwhelmingly solar PV systems; however batteries are increasingly included and other forms of storage and generation are likely to become more common in coming years, as well as energy management services that leverage renewable energy and storage equipment.

<sup>2</sup> [www.ata.org.au/research/sunulator](http://www.ata.org.au/research/sunulator)

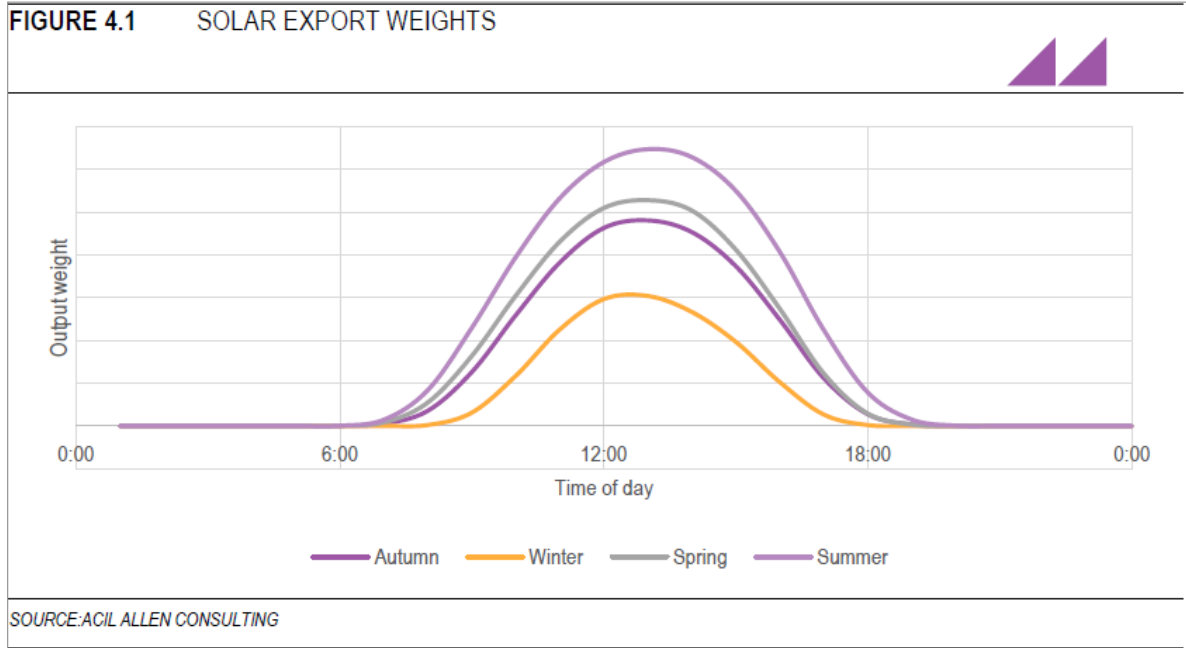
<sup>3</sup> <http://www.ata.org.au/ata-solar-advice/>

<sup>4</sup> Perhaps involving a change of electricity retailer.

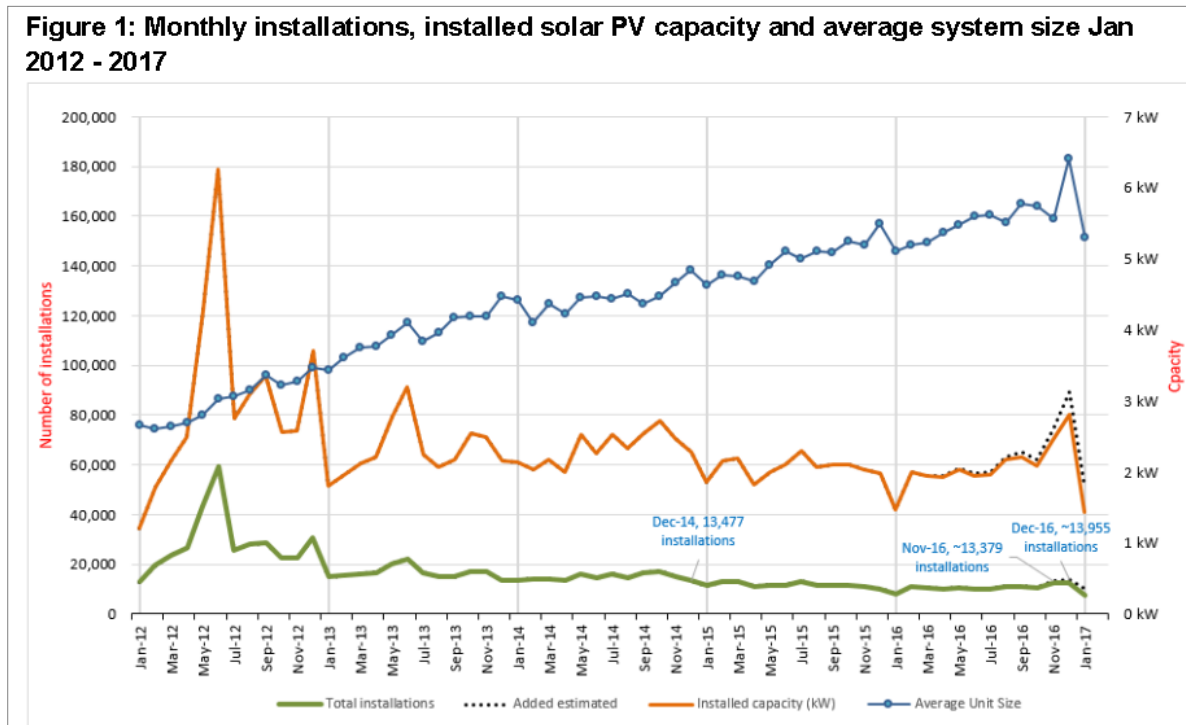
# Methodology

## Solar export profile

The Commission’s calculated values for the single-rate FiT relies on the weighted value of solar exports during the solar export period. This was done using a solar export profile based on data from the three years to early 2016.



However, this may be out of date, since solar systems existing in that period were on average smaller than solar systems existing today. Please see blue line on the following chart.



Households with larger solar systems have a relatively flatter solar weighting throughout the day. This is because generation by a smaller solar system is affected relatively more by household consumption, especially early and late in the day. For example, a 2 kW solar system may be generating an average of 500 W between 5:30-6:00pm. With the occupants having just returned home, the household consumes all of this generation and nothing is exported to the grid. On the other hand, with a 6 kW solar system the generation would triple, and the household would likely export solar generation to the grid. The increase in system size could have a significant impact on the solar export weighting, and any additional export in the early evening period would see an increase in the average value of exported generation.

**ATA recommends that the Commission test the sensitivity of the solar weighting of the flat-rate FiT to larger solar system sizes.**

### Clarity of different approaches to calculating energy value for FiTs

The ACIL Allen report and the Draft Decision both go to some lengths explaining the different approaches taken in calculating the energy value for the two different FiTs. In particular, it is explained that the flat-rate FiT is based on the solar-weighted wholesale price, while the TvFiT is based on wholesale prices during the three different time periods. The explanation given in both reports addresses the unexpected result of the flat-rate FiT being lower than the shoulder rate of the TvFiT.

However the explanation is complex and the outcome counter-intuitive when the reason is not understood. We note that it has caused considerable confusion among many people, and it seems like a perverse outcome that a PV system on the TvFiT will always receive more revenue than one exporting the same amount on the flat-rate FiT, no matter what the export profile. It also raises the question: why would an energy retailer offer the optional TvFiT if it will definitely be liable for a higher payment than under the flat-rate FiT?

The Commission states that the flat-rate FiT is specifically designed for solar PV, while the TvFiT is for any form of distributed generation. However there is no indication of how the Commission expects to see these FiTs applied in practice.

**ATA recommends that the Commission:**

- **provide more information about the rationale for using different methodologies for calculating the different FiTs**
- **give some indication of how it expects the FiTs to be offered in the market**

### Treatment of customers still on the Premium Feed-in Tariff

Many solar owners are still currently receiving the Premium Feed-in Tariff (PFiT), which is closed to new entrants but will run until 2024. The current flat-rate FiT is payable in addition to the PFiT value of 60¢/kWh. We assume this is also the case for the TvFiT.

**ATA recommends that the Commission clarify whether the TvFiT is payable in addition to PFiT.**

## Other matters

### Delay in introducing the critical peak FiT

To make the FiT better reflect the true value of electricity fed into the grid at different times, the Commission wishes to introduce a critical peak component, in addition to the FiT and TvFiT component discussed above. The critical peak price would apply during spikes in the wholesale market, defined as a wholesale price greater than \$300/MWh (30¢/kWh).

This critical peak FiT is important to achieve cost-reflectivity. At times when the grid is especially stressed, the wholesale price rises as high as the market cap of \$14,000/MWh (\$14/kWh). As shown in the chart below, time intervals with prices higher than \$5,000/MWh (\$5/kWh) occur in most years. These events may become even more common, as ACIL Allen’s latest FiT modelling for the Commission predicts that the wholesale price in 2018-19 will exhibit a much more pronounced afternoon peak compared to 2016.

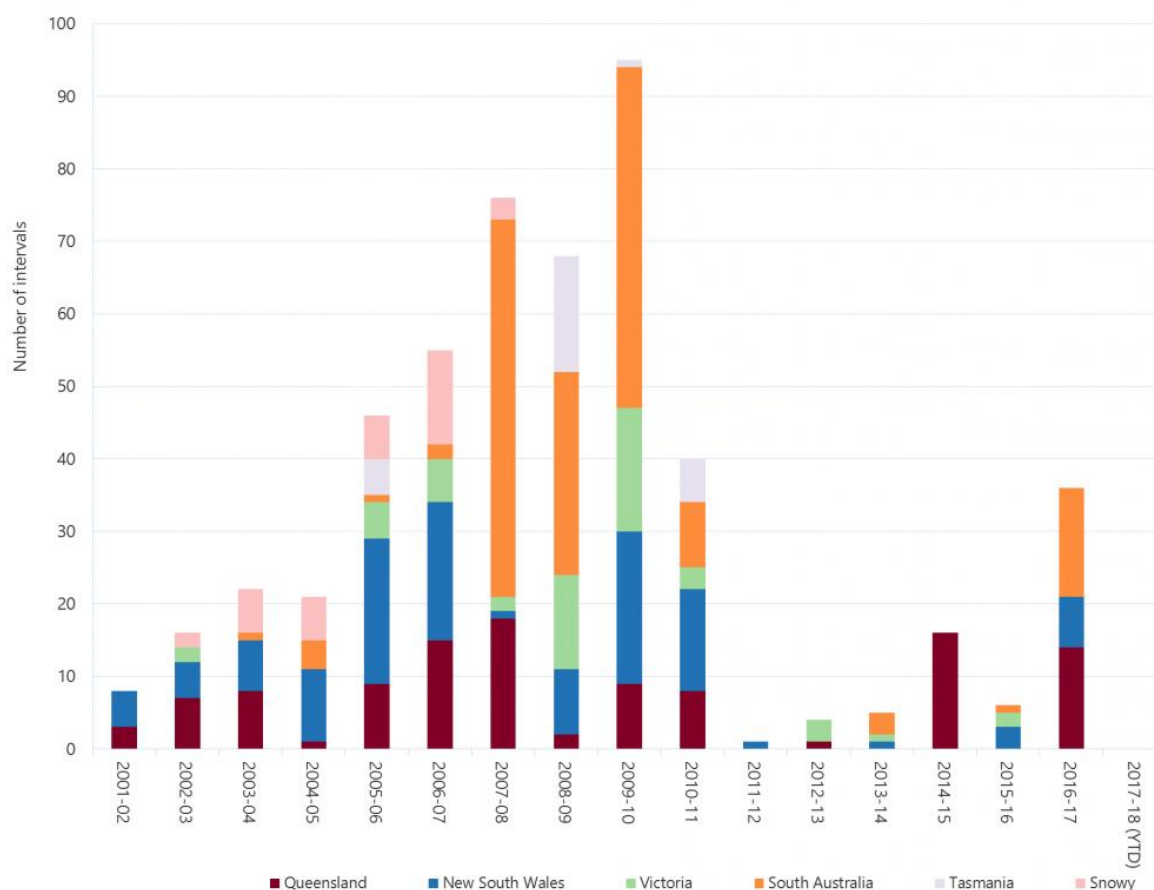


Figure 1 “Trading intervals above \$5000/MWh (annual)” Australian Energy Regulator.<sup>5</sup>

Under the Commission’s current proposal, when the wholesale price reaches the market cap, a renewable energy owner on TvFiT will receive 29¢ per kWh fed into the grid.<sup>6</sup> However their

<sup>5</sup> <https://www.aer.gov.au/wholesale-markets/wholesale-statistics/trading-intervals-above-5000-mwh-annual>

electricity retailer benefits from this energy at the value of \$14 per kWh – 48 times as much! This is far from cost-reflective. Feed-in at such times should be incentivised much more.

**ATA recommends that the Commission introduce the critical peak component as soon as possible, as it's essential for proper cost-reflectivity.**

As discussed earlier in relation to the TvFiT, another dynamic component to the FiT makes the values proposition for investment more complicated to calculate. So again, consumers and the renewable energy industry will require some guidance on the likely impact of the critical peak FiT on renewable energy economics. The calculator that we have recommended be developed to help consumers understand the economics of the TvFiT will equally help them estimate their likely exports during critical peak periods.

### Valuing avoided human health costs

In its draft determination, the Commission found that distributed renewable energy solar exports do reduce costs due to human health impacts, such as respiratory diseases caused by airborne coal emissions. However it decided noted that these costs are too difficult to quantify, so they're not included in the proposed FiTs.

Other organisations have estimated the health costs of burning coal. For example – and as referred to in the Commission's Final Report on the Energy Value of Distributed Generation<sup>7</sup> – the Australian Academy of Technological Sciences and Engineering calculated the health costs of burning coal at \$13 per MWh<sup>8</sup>. We agree with the Commission that because of the complexities in the relationship between health outcomes and fossil fuel generation, a dollar value of a specific health benefit cannot be reliably attributed to a unit of distributed emission-free energy. However the value is clearly higher than \$0 per MWh. In our view, assigning a value of \$0 to the health benefits of distributed renewable energy is inappropriate, while a value somewhere between \$0 and \$9.50 per MWh,<sup>9</sup> de-rated to account for the uncertainties in attributing value directly, is appropriate.

**ATA recommends that the Commission include a value for avoided health costs in its FiTs, with policy guidance as necessary by the Victorian government.**

*We note that with payment based on grid exports, the full value of the benefit would not be realised by renewable energy system owners, since the benefit is proportional to gross generation rather than net feed-in. So while we would still support this approach, our preference is for it to be based on system size as originally proposed by the Commission for the emissions reduction component (the Deemed Output Tariff). We also note that, since reduced health expenditure accrues primarily to government, this component would ideally be funded from tax revenue rather than energy retailers. ATA recognises that both of these refinements would require changes in Victorian government policy.*

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<sup>6</sup> Assuming the event occurs on a weekday between 3pm and 9pm. If not, the solar owner receives a lower amount. It's possible that electricity retailers will voluntarily offer a peak-time FiT higher than the minimum, but this seems unlikely as it's not in their short-term commercial interest.

<sup>7</sup> Essential Services Commission 2016, *The Energy Value of Distributed Generation: Distributed Generation Inquiry Stage 1 Final Report*, August, 67-8.

<sup>8</sup> Page 4, *The Hidden Costs of Electricity*, Australian Academy of Technological Sciences and Engineering, 2009. <https://www.scribd.com/document/36842518/ATSE-Hidden-Costs-Electricity-report>

<sup>9</sup> 73% of \$13, since coal accounts for approximately 73% of generation in the NEM (see Figure 1.7, "State of the Energy Market", May 2017, Australian Energy Regulator.)

