

29 January 2025

Ms S Sheppard
Chief Executive Officer
Essential Services Commission
Level 8, 570 Bourke Street
Melbourne
Victoria 3000

Re: Determination of Minimum Feed In Tariffs 2025 - 2026

Dear Ms Sheppard,

I refer to the Essential Services Commission's (ESC) decisions on minimum feed in tariff (MFIT) for 2023-2024, 2024-2025 and the draft decision for 2025-2026.

In my opinion, these decisions are seriously flawed, hampering Victoria's energy transition, unfair and supporting anti-competitive market behaviour. One could say the system is broken.

In my opinion, the assumptions and methodology employed by the ESC has led to the MFIT determined by the ESC being seriously under-valued. The energy market is being distorted by the inappropriate assumptions, calculation and low MFIT determination.

I recognise that the supply of electricity by major generators is essential and reliable power is critical to our society. There does need to be a business model in which generators can operate effectively.

Rooftop solar is reducing demand from retailers and hence from generators, albeit that may change if electric vehicles are increasingly used in Victoria. Rooftop solar exports compete in a way with traditional energy suppliers. Rooftop solar is hence a competitor in the supply of electricity.

In adopting and using rooftop solar, households and businesses are reducing their electricity bills and their carbon emissions. In exporting solar electricity to the grid, they are meeting a portion of public demand, bringing down power prices and reducing overall carbon emissions required for the supply of electricity for our society.

There are three areas of primary concern to me:

- Applying the Solar Weighted Average Wholesale Price to electricity fed into the grid is flawed, when in fact rooftop solar is a major contributor to putting

downward pressure on wholesale prices from generators and it is not being credited with any financial contribution for doing so.

- Misrepresentation and incorrect determination of avoided Transmission and Distribution Losses and Marketing costs
- Misrepresentation, miscalculation and incorrect determination of the avoided Social cost of Carbon, which appears to be in direct contravention of the Electricity Industry Act 2000. The ESC draft decision indicates that the Order in Council 2017 applies but then does not follow the methodology or factors contained in the Order, as required by the Electricity Industry Act 2000.

One is lead to question whether the ESC is demonstrating bias against rooftop solar customers in every element of the considerations it is required to make.

My analysis and review on each of the matters are set out in the attachments 1, 2 and 3 to this letter.

I formally request that the ESC objectively review its draft MFIT decision and determine an appropriate and fair MFIT for 2025 – 2026, which reflects the true value rooftop solar feed in is providing to the people of Victoria.

I am happy to withdraw or amend my comments if the ESC is able to properly explain and justify its analysis and decisions where my assumptions and analysis are not consistent with the facts.

If my analysis or opinions are correct, I believe that the MFIT determined for 2023-2024, 2024-25 should be revisited and all customers on the MFIT be compensated appropriately.

I may be contacted on [REDACTED] or at [REDACTED].

Yours sincerely



Anthony H Barry



Attachment 1

Wholesale Pricing

Historical Forecasts

It is, of course, true that solar exports occur during the day and that most often peak demand for electricity occurs in the evening.

The Electricity Industry Act 2000 - Section 40FBB requires the ESC to “*have regard to prices of electricity in the wholesale electricity market*”.

In Figure 2 Average solar exports across the day are shown on page 12 of the *Minimum Electricity Feed-in Tariffs from 1 July 2025 Draft Decision, 10 January 2025*. It is clear that the ESC has data which indicates that solar exports occur between 6am and 7pm approximately.

Frontier Economics in its draft report to the ESC “Wholesale Price Forecasts for Calculating Minimum Feed-In Tariff 2025-26”, Figure 2 indicates average daily spot prices per MWh for a number of years.

If one estimated the figures using both charts (as I have done without the benefit of the base data), the calculated solar weighted average for:

- 2023-2024 appears to be 3 cents per kWh, not the 2.13 cents per kWh in the determination by the ESC.
- 2022-2023 the calculated solar weighted average appears to be 5 cents per kWh, not the 2.4 cents per kWh in the determination by the ESC.

Given the not insignificant discrepancies between the previous decisions by the ESC and the figures provided in the Draft Decision Paper, it is incumbent on the ESC to adjust their methodology to reflect a comparative analysis of prior year decisions and actual data.

Valuing rooftop solar exports

Under the Electricity Industry 2000 – Section 40FBB, “*In determining a rate for the purposes of section 40FBA(a), the Commission must have regard to—*
(a) prices of electricity in the wholesale electricity market”

It is argued that the wholesale price has reduced because of the reduction in demand from the grid, associated with rooftop solar and batteries, as well as export to the grid by rooftop solar customers.

In my opinion, the economic value of rooftop solar electricity exports is not the wholesale price itself, albeit the ESC is required to have regard to wholesale prices, but the savings delivered to retailers and hopefully non-solar Victorian customers.

In my opinion, the economic value of solar exports to the grid are the savings achieved through those exports, not the time-of-day wholesale prices themselves. Those savings are measurable. I call on the ESC to review and

change its approach to determine the MFIT to fairly share the savings delivered through the contribution to wholesale price reductions attributed to rooftop solar exports.

Respecting capital investment in rooftop solar

The wholesale prices from generators are known, as is the cost of rooftop solar and storage. Both forms of electricity generation compete on an equal playing field.

Those customers (many with government support) who have installed rooftop solar and, some also batteries, have done so at considerable expense to themselves, albeit supported by government rebates. It is neither apparent in the ESC's determination of the MFIT or the preparatory advice by Frontier Economics, whether the capital cost incurred by rooftop solar customers and the government rebates have in any way been reflected in the valuation of the MFIT.

In our own situation, we obtained a credit through the Commonwealth Government's "Small-scale Renewable Energy Scheme" (SRES), which allows eligible households and small businesses to receive a benefit towards the cost of installing a solar system by generating Small-scale Technology Certificates (STCs) that can be sold to offset the upfront cost of the system. That credit represented 17.5% of the capital cost of the solar panel installation. We received no credit or support for battery installation.

From the rooftop solar customers' viewpoint, the benefit of installing rooftop solar PV is derived from the relationship between the retail price and the amortised cost of the rooftop solar PV and battery installation, after government subsidies. Some will have also taken account of the FIT they have negotiated with their retailer in their own decision-making. Under-estimating the MFIT will negatively impact solar customers.

The larger generators recover their investment and capital costs through the prices they receive for the power they generate, throughout the day. For the most part, the load weighted price for residential supply from the Victorian generators is over A\$70 per MWh or 7 cents per kWh. As a business, they simply target pricing at a time of day to gain the return on investment they are seeking.

The primary reasons customers install rooftop solar may be to satisfy their own needs, reduce the cost paid to electricity retailers and/or to reduce their carbon footprint. **In my opinion, it is more than reasonable that some portion of the capital cost is recovered through the MFIT and I call upon the ESC to adjust its methodology accordingly.**

Attachment 2

Distribution and transmission losses and market fees

The Electricity Industry Act 2000 - Section 40FBB (3)(b) requires that the ESC “*must have regard to—*

(b) any distribution and transmission losses avoided in Victoria by the supply of small renewable energy generation electricity”

Such losses occur between generator and customer and a physical inefficiency inherent to an electricity distribution and transmission network in which I understand energy is mostly lost through heat. Losses are measured and costed by the industry and reported by the Australian Energy Regulator.

The ESC has calculated these costs as a negative because of the formula it uses.

Transmission and distribution costs and losses are real costs. They are never negative. It should always be a positive difference in favour of rooftop solar in the MFIT calculation and should be consistent year on year, save the efficiency improvements.

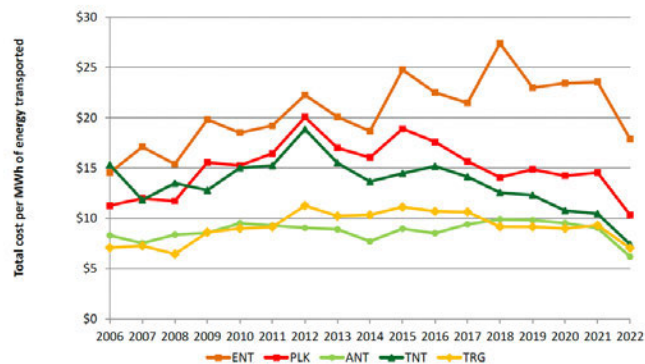
The distribution and transmission losses avoided were determined as 0.15 cents per kWh for 2022-23, 0.14 cents for 2023-24, 0.05 cents per kWh in 2024-25 and not individually provided in 2025-26.

The avoided costs of market fees and ancillary service charges were determined as 0.09 cents per kWh for 2022-23, 0.15 cents for 2023-24, 0.08 cents for 2024-25 and not individually provided in 2025-26.

Overall, this means that these costs avoided by using rooftop solar exports have changed from 0.24 cents per kWh in 2022-23, to 0.29 in 2023-24 to 0.13 cents in 2024-25 and proposed to drop to -0.08 cents per kWh in 2025-26.

Transmission and distribution costs are reported annually in the Annual Benchmarking Report – Electricity transmission network service providers by the Australian Energy Regulator. Its report dated November 2023 includes the following chart.

Figure 16 TNSP total cost per MWh of energy transported (\$2022), 2006–22



Source: Economic Benchmarking RINs, AER analysis.

It appears from these charts that the cost of electrical energy transported in Victoria (ANT = Ausnet Services) might reasonably be estimated to be \$5 per MWh or 0.5 cents per kWh. In recent years, the figure was closer to 0.9 cents per kWh. The costs are not incurred by rooftop solar fed into the grid.

I am not aware of any logical argument which would suggest that the differential between generator and rooftop solar supplied electricity should be negative.

It is my view that the ESC should review its methodology, consult Ausnet or the Australian Energy Regulator to understand the real cost of transmission and distribution losses and determine an appropriate cost of them, to be included in the determination of the MFIT.

Attachment 3

Avoided Social cost of Carbon

The Electricity Industry Act 2000 - Section 40FBB (3)(c) requires the ESC to “have regard to the following avoided costs—

- (i) the avoided social cost of carbon;
- (ii) the avoided human health costs attributable to a reduction in air pollution.”

In my opinion, the avoided social cost of carbon used by the ESC is wrong.

The ESC draft decision indicates that the Order in Council 2017 applies but then does not follow the methodology or factors described in it, as required by the Electricity Industry Act 2000.

As a Victorian citizen, I expect the ESC to either:

- Faithfully implement the requirements of the Electricity Industry Act 2000 and the Order in Council; or
- Vary the implementation of the requirements of the Act or the Order in Council with a fulsome explanation of its decision to do so.

In failing to follow the methodology and factors in the 2017 Order in Council, the ESC significantly under-estimates the avoided Social Cost of Carbon included in the MFIT.

Order in Council 2017

Section 40FBB(3B) of the Electricity Industry Act 2000 states that the “The Governor in Council, by Order published in the Government Gazette, may specify a methodology or factor for the determination of—

- (a) the avoided social cost of carbon; or
- (b) the avoided human health costs attributable to a reduction in air pollution.”

The Victorian Government Gazette S 36 Tuesday 21 February 2017 includes publication of an Order in Council under the Electricity Industry Act 2000 and specifies a methodology and factors for the determination of the avoided social cost of carbon to which the ESC must have regard.

The Order defines the “*relevant financial year means the 2017/18 financial year*” and the “*relevant period means the five-year ending on 31 December of the calendar year that ends 6 months prior to the commencement of the relevant financial year.*”

There are several possibilities I see here:

- (1) The definition of the term “**relevant financial year**” to mean “*the 2017/18 financial year, for which a rate or rates determined under section 40FBB of the Electricity Act 2000 will apply*” may confine the applicability of the Order to that financial year; or
- (2) The term “**relevant financial year**” is a generic term with application from the date of the Order until it is rescinded.

In its “MINIMUM ELECTRICITY FEED-IN TARIFF TO APPLY FROM 1 JULY 2017 Decision (Final) dated February 2017 the ESC states in Section 2.2.1 that

“An Order in Council published on 21 February 2017 specifies the factors and methodologies for determination of the avoided social cost of carbon to which the Commission must have regard when setting the FiT that applies from 1 July 2017.

The Order specifies that the avoided social cost of carbon for 2017–18 is calculated in terms of the avoided social cost of carbon per unit of exported electricity from a small renewable energy generator, and is to be determined in accordance with the following methodology.

Avoided social cost of carbon = Volume factor × Price factor (2.3)

The Order specifies the factors the Commission must use when applying this methodology.”

The ESC has claimed on a number over a number of years that it has “*adopted this methodology for our decision.*”

I am not a legally qualified person, but assuming the order is applicable to the years which are the subject of rate determinations, then the Electricity Industry Act 2000 states:

“If an Order under subsection (3B) is in effect, the avoided costs that the Commission must have regard to under subsection (3) are the avoided costs determined in accordance with the methodology or factor specified in the Order for the relevant avoided costs”.

I assume that for the purposes of the decision the ESC, given the words in its own draft decision, believes that it is required to comply with the Order referred to above and have regard to the methodology or factors contained in that Order.

Methodology and factors

The Order in Council under the Electricity Industry Act 2000, published in the Victorian Government Gazette S 36 Tuesday 21 February 2017 includes a methodology, described in principle as follows:

*“Avoided social cost of carbon = Volume Factor X Price Factor
where–*

Avoided social cost of carbon *is the cost per kilowatt-hour of small renewable energy generation electricity purchased by a relevant licensee, expressed in dollars;*

Volume factor *is the volume of CO₂e that is avoided by each kilowatt-hour of small renewable energy generation electricity purchased by a relevant licensee, expressed in tonnes and calculated in accordance with the formula in clause 7; and*

Price factor *is the value of a tonne of CO₂e for the relevant financial year, expressed in dollars and calculated in accordance with the formula in clause 8.”*

Volume factor

The Order (clause 7) indicates that “the Volume factor must be calculated in accordance with the following formula-

$$\text{Volume factor} = \frac{\text{Coefficient factor} \times X}{1000}$$

It is specific with no adjustment to the Coefficient factor, being 1.27.

This yields a Volume factor of 1.27kgs per kWh of CO₂e avoided.

Price factor

The Order (clause 8) indicates that “the Price factor must be calculated in accordance with the following formula –

$$\text{Price factor} = \left(\sum_{m=1}^q P_m \right) \div q$$

where there are q months within the relevant period and –

Price factor is the value of a tonne of CO₂e for the relevant financial year, expressed in dollars; and

P_m is the VEET average market spot price of one tonne of CO₂e for month m of the relevant period.”

This calculation may be strictly interpreted to specify that the Price Factor is the average of the VEET average market spot price over the 5 years (relevant period) leading up to the end of the 6 months prior to the financial year under consideration.

The ESC’s decisions have not followed the methodology or used the appropriate data in calculating the Price factor. The ESC has used average monthly market spot price data for a period (2012-2016) which has not been appropriate for the relevant financial years under its consideration.

VEET Average market spot prices

Subclause (2) of Clause 8 provides a table of the average market spot prices for the relevant period (January 2012 – December 2016) for the relevant financial year under consideration being being 2017/18.

In Section 2.2.1 of its 2017 Decision the ESC states that:

“With regard to the price factor, the Order requires the Commission to adopt a factor equal to a value per tonne of CO₂e of \$19.63.

The resulting avoided social cost of carbon is \$0.025 per kWh of electricity exported by a small renewable energy generator.”

Use of the data in the table in Clause 8 (2) of the Order for financial years after that is inappropriate and, in my opinion, contravenes the Electricity Industry Act 2000 and the Order in Council.

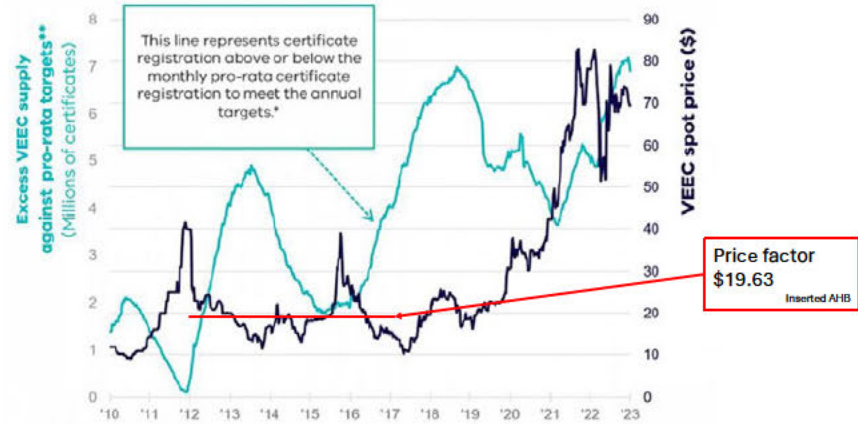
There is no specific monthly average market spot price data contained in the 2017 Order applicable to the relevant financial years since the financial year 2021 – 2022. In my opinion, the ESC’s continued use of that data is irresponsible, inappropriate, erroneous and unfair to rooftop solar customers.

The legal basis for and legal viability of the ESC’s decision determine the Avoided social costs of carbon is something about which I am not qualified to comment, but that must also be questioned.

From 10 December 2018, the Victorian Energy Efficiency Target (VEET) scheme became officially known across the commission’s websites and documentation as the Victorian Energy Upgrades (VEU) program. A VEEC is a *“Victorian energy efficiency certificate created under the VEET Act, representing one tonne of carbon dioxide equivalent of greenhouse gases to be reduced by the prescribed activity”*.

The data in the 2017-2018 decision is based on a Price factor, that is, the average market spot price of \$19.63. The reference to the VEET average market spot price in the 2017 Order is consistent with the VEEC supply and spot price chart at that time produced by the ESC, as shown below.

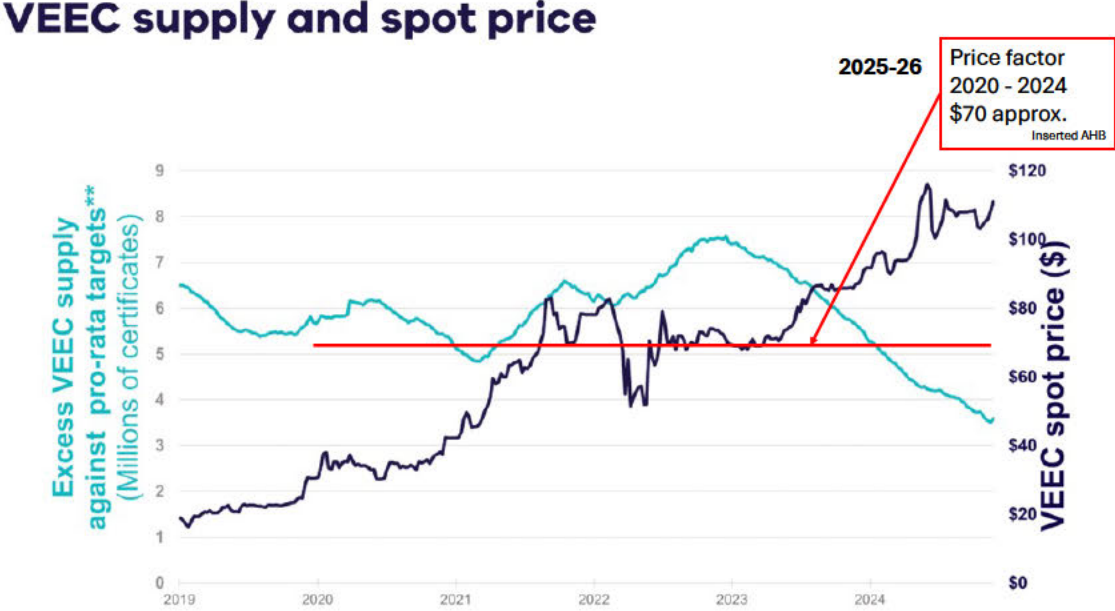
VEEC supply and spot price



Graph showing historic VEEC price between 2009 and 2022, mapped against the excess supply of VEECs against VEU targets for each year.

The Price Factor estimated

The spot price has moved again in 2024 as illustrated in the following chart from ESC’s November 2024 Market Update, which has been annotated with a red line to indicate the approximate monthly average spot price over 5 years:



It is very clear that the average price yields values considerably greater than those adopted by the ESC in its decisions since 2022. For the relevant financial year 2025 – 2026, the monthly average market spot price over the relevant period (1 January 2020 – 31 December 2024) would appear to be closer to \$70 per tonne of CO₂e.

Using an average market spot price of \$70 per tonne of CO₂e or 7 cents per kg of CO₂e multiplied by 1.27 kgs per kWh, yields an Avoided social cost of carbon of 8.89 cents per kWh.

Based on the methodology set out in the 2017 Order in Council and the formulae for the factors, and my estimate of the monthly average market spot price of per tonne of CO₂e from the charts, I suggest that the Avoided social cost of carbon should be as follows:

| Item Description | Period 2018 - 2022 | Period 2019 - 2023 | Period 2020-2024 |
|--|--------------------|--------------------|------------------|
| Estimated VEEC Average Market Spot Price per tonne CO ₂ e | \$40 | \$55 | \$70 |
| Estimated Avoided social cost of carbon (cents per kWh) | 5.08 | 6.98 | 8.89 |
| ESC published Avoided social cost of carbon (cents per kWh) | 2.49 | 2.49 | 2.49 |

| | | | |
|--|------|------|------|
| Difference Avoided social cost of carbon (cents per kWh) | 2.59 | 4.49 | 6.40 |
|--|------|------|------|

The ESC has continued to use the Avoided social cost of carbon as \$2.49 adopted in 2017 on data from 2012-2016 when the Price Factor in the Order in Council was calculated to be \$19.63 to 2024 when the Price factor is now approximately \$70.

Renewable Energy Incentive Scheme

To encourage the use of renewable energy, the Australian Government (cer.gov.au) provides incentives called small-scale technology certificates (STCs). Individuals or businesses can earn STCs when they install eligible small-scale renewable energy systems.

STCs are used as a way to meet renewable energy targets and reduce carbon emissions. They make renewable energy systems more accessible and attractive.

When you install an eligible renewable energy system, you earn a certain number of STCs.

An STC is equal to 1 megawatt hour (MWh) of renewable electricity generated or displaced by eligible systems. These include solar PV. The number of certificates depends on a number of factors.

When we installed our rooftop solar, each STC was valued at \$38.76.

Arguments have been put to me that we received a subsidy from the government and hence should not be entitled to an FIT. This is not based on the fact that at the time of the 2017 Order in Council, the STC scheme had been in place for many years and hence the Order was made in the full knowledge of the scheme.

It is evident that the VEEC monthly average spot price for 2024 is about \$104 by estimation from the charts, whereas the VEEC monthly average spot price for the relevant period 2020 – 2024 is about \$70. In may be coincidence, but the use of the prior 5 year period average was made in the knowledge of the subsidy by way of STC's provided at the time of installation.

Social cost of carbon - conclusion

It has been stated in the 2025-2026 draft decision by the ESC that *"We have used a value of 2.49 cents per kWh for the avoided social cost of carbon, as specified in the February 2017 Order in Council. This is consistent with the approach in past reviews."*

I believe that this claim is false. Similar claims, using different wording, have been made in previous years.

I have read no evidence in either the 2017 Order in Council or the methodology itself which would lead to this figure being adopted for any period beyond the 2017-18 financial year.

I have come to the conclusion that the ESC has not followed what is required by the Electricity Industry Act 2000 – Sect 40FBB states that states: *“If an Order under subsection (3B) is in effect, the avoided costs that the Commission must have regard to under subsection (3) are the avoided costs determined in accordance with the methodology or factor specified in the Order for the relevant avoided costs.”*

Given the Price factor has not been updated since 2017 and the last VEET average monthly spot price listed in the Order is December 2016, in my opinion, the ESC has failed in its duty to have appropriate regard to the relevance of the data. The data relied on by the ESC is not applicable to the relevant periods since and hence its consideration for each financial year has been flawed.

The methodology in the 2017 Order is straightforward but its application has been flawed and required significant revision. I believe that this is so serious that the MFIT determined for 2023-2024, 2024-25 should be revisited and all customers on the MFIT be compensated appropriately and that the draft decision for 2025-26 should be reviewed and re-issued.