

ESSENTIAL SERVICES COMMISSION MINIMUM FEED-IN TARIFF SUBMISSION

Every year I read the documents supplied to the Essential Services Commission for the setting of solar feed in tariffs. Every year I wonder the same things. Who is paying for the reports to be written, what brief is given to the writers of the reports and what knowledge and experience do the writers have of the daily operation of the electrical grid?

My suspicion is the reports are funded by the generators and distribution businesses with the intention of driving down costs to maximise profits. This I suspect is done with little or no knowledge of how a large power grid works.

I am both alarmed and amused that the report prepared by Frontier Economics Pty. Ltd. comes with the following disclaimer found on page 2:

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Very sneaky on the part of Frontier Economics Pty. Ltd. as the report is in my opinion misleading and biased in favour of supply side entities. I would describe it as an incomplete work of fiction. The report is heavily reliant on forecasts and scant on actual prices paid by suppliers and consumers.

Every year there is a massive focus on the wholesale price of electricity and forecasting its movement. Regardless of whether the price is rising or falling, solar tariffs always fall. What then is the forecast wholesale price and how is it determined? The wholesale price is an indication of what spot prices are doing. Spot prices are used to determine order of dispatch and also, very low bid prices or negative bid prices are offered to keep thermal plant synchronised at times of low demand, avoiding shut down costs and minimising thermal stress on generating plant.

What function does the wholesale price play in the market? Not a great deal. Market traders use it to leverage deals and contract prices. It doesn't show up on a power bill because it is not an actual value, it is a trend.

What the Essential Services Commission should focus on are actual costs and actual prices. Generators sell most of their generation at contracted prices. Some may have exposure to spot prices which can at times reap great reward but can also be very risky. Distributors operate in the contracted world, buy at one price, sell at another. Actual figures are much safer for them. Vertically integrated businesses are in a better position to exploit the spot market however the vast majority of electricity is traded under contract.

What then is electricity worth? It does have a value and the value can change depending on demand, supply, time of day or night, the weather. When settlement prices are published, the actual value of electricity is declared. The settlement prices are probably the safest, most reliable indication of the value of electricity at any time of day or night. Then there are the retail prices, the ones printed on our bills. They indicate the cost to us, but are not the true value of electricity because they contain the profit component.

Before looking at settlement prices and solar tariffs I would like to look at the operation of the electrical grid which is not well understood.

An Alternating Current (AC) electrical grid is demand driven. The power required to operate an appliance does not exist until the appliance is turned on. At that instant, the system responds to generate the required power. Turn the appliance off and the demand is gone, the power ceases to be generated. The saving grace is that the electrical grid is huge and at any time, there are enough appliances and enough generators to keep the system stable. Stability is maintained by matching demand with supply on a very large scale. There is a misconception that electricity sits in the wires waiting to be used. This is not the case with an AC grid.

How then is the flow of electricity into and out of the grid measured? Every generator and every consumer of electricity has a meter to measure the quantity of power flowing through it. In an ideal system, the quantity entering will equal the quantity leaving. Supply will equal demand at any point in time. In reality, there are losses in distribution such as leakage or heat given off by transformers. They are normal, known and accounted for. We all contribute in paying for the losses so I will not dwell on them.

Now that I have established that at any time in history, an actual value can be placed on electricity and that the grid is a demand driven system, I will explore the real value of solar power supplied to the system.

The figures I will use to explain my case are source from my own AGL electricity bill and information gain from the AEMO Dashboard today 27-1-2025.

AGL peak price (3PM~9PM)	0.47784 \$/Kwhr	or \$477.84 /Mwhr
AGL of peak price	0.26895 \$/Kwhr	or \$268.95 / Mwhr
AGL feed in tariff (now)	0.033 \$/Kwhr	or \$33.00 / Mwhr
Proposed feed in tariff	0.0004 \$/Kwhr	or \$0.40 / Mwhr

As Electricity in the market is traded by price in dollars per Megawatt hour or \$/Mwhr I shall only use this measure.

As pointed out earlier, all power entering and leaving the grid is metered and quantified. The grid is demand driven so all electricity entering the grid as supply is leaving the grid to meet demand. Power cannot wait in the wires, it cannot be made to disappear. Supply and demand is instantaneous. So what happens if I export power to the grid? My meter measures it and I am credited for that electricity. At present I will receive \$33.00/Mwhr. My distribution company now owns the power until it is absorbed by demand in the system. When it is absorbed by demand, it will pass through a meter and register as a sale. If the power is absorbed at peak times, it will attract a price of \$477.84/Mwhr. A profit of \$444.84 with no overheads, a profit margin of 1348%, very tidy indeed. If the new feed in tariff of \$0.40/Mwhr is brought in, the same power I export will net the distributor a profit of \$477.44 or a staggering 119360%. Frontier Economics seem to have left these real figures out of their report in favour of "forecasts".

I have just looked at the AEMO Dashboard where all grid data is displayed. As I write, there are 5752 megawatts of solar power entering the grid. This is 30% of the grid. This is real electricity entering the grid which is being consumed by real demands. At the Victorian Solar Feed in Tariff, one hour of this solar power is worth \$189,816.00 to the people feeding it in. The same quantity of power is worth \$1,357,184.40 to distributors at off peak times or \$2,558,719.68 during

peak times. This is real electricity being bought and sold in a real, live market at outrageous profit levels.

If the new feed in tariffs are applied, the people feeding in the 5752 megawatts of solar power will collectively be paid \$2300.80 and the distributors will sell the same for \$1,544,699.00 at off peak rates and \$2,746,234.88 at peak rates. Real electricity being traded in the National Market with distribution companies making obscene profits and refusing to pay a fair price to the supplier.

If Coles or Woolworths paid a farmer \$0.40 for a litre of milk and sold it for \$477.84, there would be public outrage, consumer backlash, possibly a Royal Commission to investigate the corporate greed. I'm sure if I tied paying AGL \$0.40 for a megawatt of electricity, they would be very quick to say it is worth more than that.

Another misconception peddled by distributors is that solar power is flooding the market pushing the price down. The reality is that prices have only gone up as all consumers would testify. Economics 101 states if demand exceeds supply, price goes up. If supply exceeds demand, price goes down. This is backed up by a notable feature of an alternating current network, system frequency of 50 cycles per second (Hertz).

If supply and demand are in balance, system frequency is 50 hertz. As demand changes, frequency changes. This can be both up and down. The fact is that frequency is very stable around 50 hertz. That means that demand and supply are at all times in balance. If the grid was flooded with solar power, frequency would increase above 50 hertz and stay there. Frontier Economics fail to point out this simple principle.

It is true that solar power fed into the grid impacts on the level of thermal generation. For the environment, that is a plus. As most generators have vertically integrated businesses, that is they are involved in the retail market too, reduced levels of thermal generation actually saves them money. Fuel costs are reduced and a lot of maintenance can be performed during daylight business hours because they are sourcing electricity to meet their demand from solar feed in. It would be fair to say that the major businesses in the generation/distribution sector are in a healthy condition.

Most people with rooftop solar have it to try and save money, some for environmental reasons too. Few, if any have it to get rich. Most see the feed in tariff as a bonus, to offset the cost of their solar system purchase.

Whatever the motive, a fair feed in tariff is seen as a fair thing. If the situation as portrayed by Frontier Economics were true, factual and complete, there may be a case for reduced feed in tariffs. The reality is that the Frontier Economics report is missing key economic and financial data. It is written to sway the Essential Services Commission into rubber stamping the worst excesses of corporate greed. As I suggested earlier, if Coles or Woolworths treated farmers like this, a Royal Commission would not quell the outrage.

I therefore ask that the Essential Services Commission make a decision based on facts, real dollar prices and a thorough understanding of how the electrical grid works. How electricity behaves is complex and it is not understood by most of the population. Ignorance though is not a justification for people to be ripped off by big corporations. The bottom line is that electricity has a purchase price and a selling price in real dollars. People supplying electricity are entitled to a fair price and sellers are entitled to sell at a price to cover costs and make a profit.

The situation at present is far from fair and the proposed position is about as close as you can get to outright power theft.

There is a law against theft of power in Victoria.

Written and submitted by Jon Sestokas

This submission does not contain confidential information