



Small-Scale Renewable Energy Scheme 2020 Forecast

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Executive Summary

- The SRES is one half of the Australian Government's Renewable Energy Target and offers upfront rebates to consumers installing small-scale solar power systems.
- This cost is borne by all electricity consumers as a levy charged per kWh of consumption.
- Solar power installations continue to accelerate, driven by:
 - Cheaper component costs;
 - Increasing adoption in the commercial sector;
 - State-based policy drivers in Victoria and South Australia.
- The cost of the SRES in 2019 is calculated to total \$1.39 billion.
- Demand Manager forecasts the cost of the SRES is expected to increase 36% in 2020 to \$1.89 billion (ignoring the GST implications for consumers).
- For a residential house using 130kWh of electricity per week, the cost of the SRES as a direct impost on their electricity bill in 2020 is forecast to be in the order of \$81 including GST.
- For the equivalent house with solar power providing 50% of their power needs, the cost of the SRES is expected to be in the order of \$41.
- Given prior reluctance of the Australian Government to interfere with the operation of the SRES, Demand Manager does not expect any material changes to the SRES in 2020.
- The ongoing coronavirus troubles in China are impacting on solar power supply chains. A prolonged shortage of major components could reduce STC supply and see the Clearing House come into play, pushing the STC price up to the cap of \$40.

1. Background to the SRES

Companies and households installing small-scale (<100kW) solar power systems in Australia receive a rebate in the form of Small Technology Certificates (STCs). These certificates are created under the Small-scale Renewable Energy Scheme (SRES) - one half of the Australian Government's Renewable Energy Target (RET).

STCs help defray some of the upfront cost of solar power systems, with the exact value dependant on the size of the system, the location of the installation and the price of STCs. The current maximum rebate value is \$71,360 while typical household rebates are in the range of \$3,943¹.

STCs must be purchased by electricity retailers to meet their licence conditions. The cost is passed through to all electricity consumers via a levy on their electricity bills which is proportional to their kWh consumption.

STCs can be purchased either through the Clean Energy Regulator (CER) operated Clearing House at the current regulated price of \$40, or in the secondary market at prices lower than \$40. The Clearing House price effectively sets a cap on the value of STCs and generally only plays a role when there is a shortage of certificates in the secondary market.

Throughout 2019 there has been a surplus of STCs in the market and hence the Clearing House has not come into play. Demand Manager has records of 783 broker-reported spot trades of STCs in 2019, covering 13.99 million STCs with a weighted average price of \$37.20. There have been an additional 1,174 broker reported forward trades of STCs in 2019 covering 17.43 million STCs with a weighted average price of \$37.31. It should be noted that many over-the-counter certificate trades go unreported so this is not a complete picture but can be relied upon for the purposes of valuing the program.

The volume of STCs to be purchased each year is set via the Small Technology Percentage (STP) – a legislated figure set by the Minister for Energy after consultation with the Regulator. Setting the STP is intended to create demand for STCs equal to the expected supply of STCs in that year and generally means the STC price trades close to the \$40 Clearing House price as supply and demand are roughly in balance.

The STP is also adjusted to include the surplus or deficit of STCs from the preceding year, thus creating a rolling means of balancing supply and demand of STCs.

It is important to note the SRES is effectively an uncapped program – the more solar installations, the higher the SRES program cost. The Minister does not have the discretion to unilaterally reduce the STP to cap program costs, however he or she does have the discretion to reduce the Clearing House price through legislative instrument (as recommended in the ACCC report on energy costs). The value of the SRES subsidy does reduce by one year every year from 2020 to 2030 (i.e. 1/12th from 2019 to 2020, 1/11th from 2020 to 2021 and so on).

The 2019 STP was set at 21.73% which equates to approximately 37.5 million STCs needing to be surrendered by electricity retailers across the country. At the Clearing House price of \$40, this would equate to \$1.5 billion in program cost for the 2019 calendar year (excluding GST). Using the weighted average spot price of STCs would value the SRES subsidy at \$1.4 billion in 2019.

¹ Maximum based on 100kW solar system installed in a Zone 1 postcode with STC price at the Clearing House price of \$40. Average STC value based on 7kW system installed in Zone 3 location at STC price of \$37.20.

2. Certificate Forecast 2020

The 2020 STP will be set by the Minister in the coming month and will comprise two components: the forecast supply of STCs in the market for 2020 and the forecast surplus of STCs from 2019.

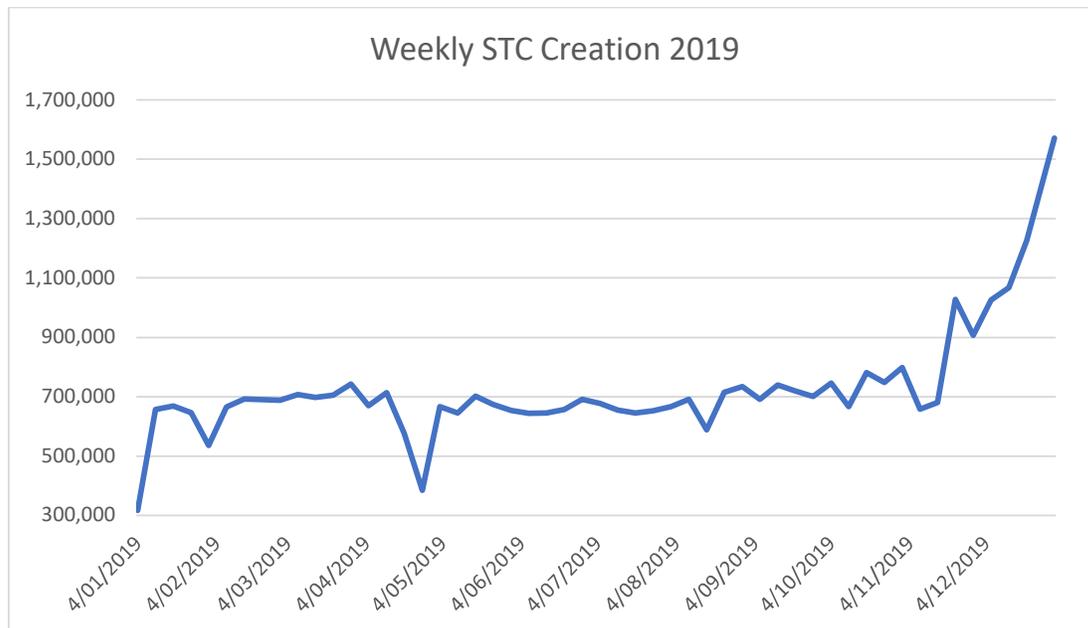
For example, in March 2019 the forecast supply of new STCs in 2019 was 29.6 million and the surplus from 2018 was approximately 7.9 million STCs. Hence the 2019 STP was set using these two figures and equated to a surrender target of approximately 37.5 million STCs.

2.1 2019 STC Surplus

Since 2016 there has been a marked increase in the uptake of rooftop solar across Australian homes and businesses. Consequently, the number of STCs being created each year has also accelerated:

Calendar Year	STCs Created in Registry
2016	14,371,691
2017	22,297,525
2018	29,713,521
2019	37,515,943

Intra-year there is a clear upward trend of STC creation as the figures for 2019 demonstrate:



Weekly average STC creation for 2019	721,460
Weekly average since 1st July 2019	799,292
Weekly average over the last 2 months of 2019	995,462
Weekly average over December 2019	1,222,307

Thus, we would expect a surplus of STC for 2020 in the order of 7.9 million STCs². This surplus will be added to the forecast 2020 STC creation figure to arrive at the 2020 STP.

² Starting the 2019 year with a surplus of 7.9m STC, adding 2019 created STCs 37.5m, then subtracting the 2019 STP of 37.5m STC leaves a surplus for 2020 of (coincidentally) 7.9m STCs.

2.2 Forecast 2020 STC Creation

Based on modelling reports, the Clean Energy Regulator expected 29.6 million certificates to be created in 2019 and set a surrender target for the year of 37.5 million (taking into account the carried forward surplus of 7.9 million from 2018).

In setting the 2019 STP, the creation of STCs in 2019 was predicted to be 34% higher than that of 2018, despite a phase down in the number of STCs per kW installed of approximately 7.7%.

Despite this increase in the surrender target between 2018 and 2019, the number of certificates produced during 2019 has again vastly outpaced the predictions. In its most recent market update the Regulator has noted:

“Small-scale solar PV installations continue to accelerate with a 30 per cent increase in installations and 39 per cent increase in capacity as at 30 September 2019, compared with the same period last year. This year the increase in system sizes is driven by a quadrupling of installations sized between 6.5 – 7kW. Systems in this size category represent 39 per cent of systems installed this year.

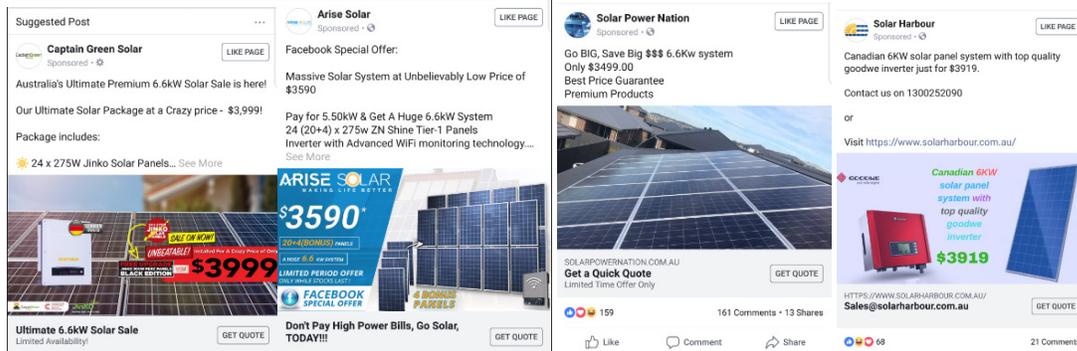
If current installation rates continue for the remainder of the year, approximately 300,000 solar PV installations with a total capacity of 2200 MW is likely to be installed. New South Wales, Queensland and Victoria continue to lead in installed capacity with the three states expected to account for over 16003 MW of the total 2200 MW.”

Clean Energy Regulator Small-scale technology certificate market update – October 2019

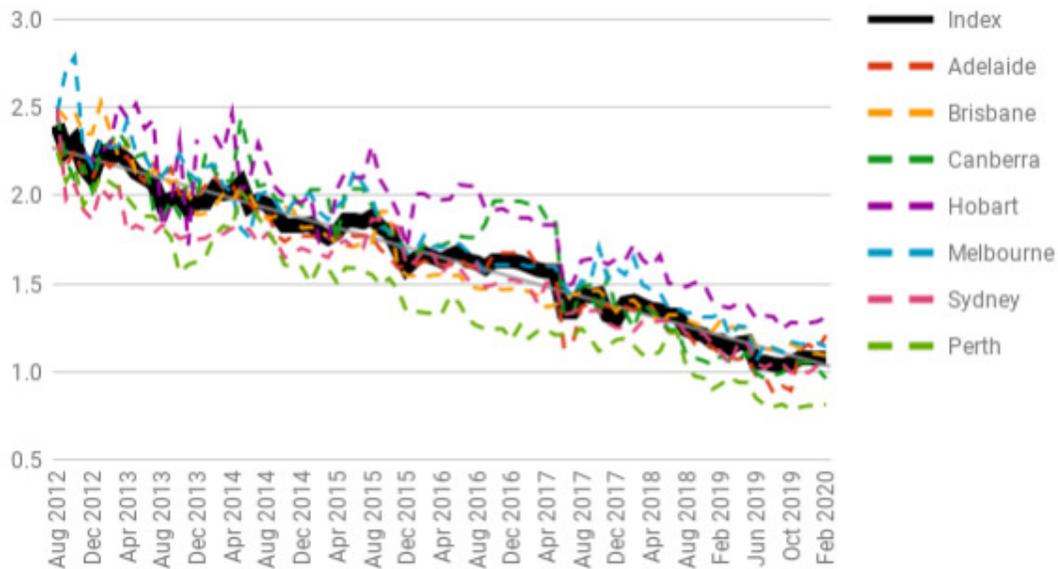
The key figure to note is the increase in installed solar capacity from 2018 to 2019 of 39%. Demand Manager believes a similar trend is continuing and policy developments in Victoria, and SA to a lesser extent, will expand this trend into 2020.

Assuming no changes to the SRES, Demand Manager expects the pace of solar installations to continue to increase through 2020 and that to be reflected in the 2020 STP calculations. The primary drivers for this increasing rate of installation will include:

- **The cost of solar power continuing to fall relative to the value of the SRES rebate.** Already there is heavy advertising of rooftop solar installations at prices around \$0.50 per Watt, fully installed (see below Facebook advertisement examples). While the SRES rebate has dropped 1/12th on 1 January 2020, this rate of reduction is outpaced by the falling cost of solar.



Solar PV Price Index (\$/W - All cities, all sizes)



Solar PV Price Index August 2012 to Feb 2020 – Courtesy Solar Choice.

- **The increasing adoption of rooftop solar in commercial buildings.** The Regulator has stated that while the number of installations increased by 31% in 2019 over 2018, the total capacity increase is 49%, meaning that the size of installations has continued to increase. This implies that the commercial sector has become even more prominent. This ties in with predictions in

a report to the Regulator by Green Energy Markets in January 2018³ which estimated the commercial sector would rise from 24% of capacity in 2017 to 41% by 2020.

- **The Victorian Government’s Solar Homes Program.** The Victorian Government program aims to see 650,000 households receive cheap rooftop solar over the coming decade. The Victorian program piggybacks off the SRES rebate, providing an extra rebate over and above the SRES. Based on Demand Manager’s analysis, the program adds to the overall cost of the SRES to the tune of over \$1 billion⁴ over 10 years and adds around 4m STCs in the first full year of operation. We also expect that other battery-oriented subsidy programs in other states (SA) will also lead to higher adoption of rooftop solar.
- **Run-rate is already higher.** Mid-February 2020 data shows a run-rate approximately 14.8% higher in 2020 compared to the same time in 2019. Should this continue, 2020 STC creation would be in the order of 43.1 million STCs.

Taking into account the ever-accelerating uptake of solar power, the increasing proportion of larger commercial systems, the ongoing reductions in system prices and the sugar-hit provided by the Victorian Government, Demand Manager expects the rate of STC creation during 2020 to equal approximately 825,000 STCs per week – or around 43 million STCs.

It should be noted that Demand Manager’s prediction for STCs created in 2019 was 36.4 million versus 37.5 million actual created STCs.

Note the formal STP will be set in March 2019 after the Minister consults with the Regulator and after several consultant reports. The above estimate is Demand Manager’s forecast based on the current pace of installations and recent policy movements.

3. Small Technology Percentage in 2020

The 2020 STP will be set based on the surplus of 2019 STCs added to the likely creation of STCs in 2020:

$$2020 \text{ STP} = 7.9\text{m surplus 2019 STCs} + 43\text{m STCs created in 2020} = 50.9 \text{ million}$$

³ STP Modelling report by Green Energy Markets – January 2018

(<http://www.cleanenergyregulator.gov.au/RET/Pages/Scheme%20participants%20and%20industry/The%20small-scale%20technology%20percentage/Small-scale-technology-percentage-modelling-reports.aspx>)

⁴ Additional cost of the SRES due to Victorian Solar Homes Program.

Year	Deeming Period	STCs per 4kW	Households	STCs Created	Cost @ \$40 Clearing House Price
2018	13	61.0	65,000	3,965,000	\$ 158,600,000
2019	12	56.3	65,000	3,660,000	\$ 146,400,000
2020	11	51.6	65,000	3,355,000	\$ 134,200,000
2021	10	46.9	65,000	3,050,000	\$ 122,000,000
2022	9	42.2	65,000	2,745,000	\$ 109,800,000
2023	8	37.5	65,000	2,440,000	\$ 97,600,000
2024	7	32.8	65,000	2,135,000	\$ 85,400,000
2025	6	28.2	65,000	1,830,000	\$ 73,200,000
2026	5	23.5	65,000	1,525,000	\$ 61,000,000
2027	4	18.8	65,000	1,220,000	\$ 48,800,000
		Total	650,000	25,925,000	\$ 1,037,000,000

This number of certificates would lead to an increase in the Small Technology Percentage (STP), or the number of certificates to be surrendered per MWh of consumption, from 21.73% (2019) to 29.5% (2020), assuming no change in the overall level of electricity consumption in the economy.

This approximates with data provided by the Clean Energy Regulator which suggested solar installed capacity has increased 39% between 2018 and 2019. Our predicted 2020 STP is around 36% larger than the 2019 STP.

Assuming the traded price of STCs in 2020 equates approximately to that traded in 2019 (noting there is no reason to assume this will not be the case), the cost of the SRES is expected to increase by 36% from 2019 to 2020.

Year	Surrender target	STC price (ex GST)	Cost	% Increase
2016	16,957,024	\$40.00	\$678,280,960	
2017	12,450,191	\$37.25	\$463,769,614	-32%
2018	29,297,525	\$37.12	\$1,087,524,128	+135%
2019	37,466,219	\$37.20	\$1,393,743,347	+28%
2020 (EST)	50,900,000	\$37.20	\$1,893,480,000	+36%

4. Customer Impact of the SRES

The cost of the SRES is directly levied on businesses and households via a levy on their electricity bills per kWh of electricity consumed. It should also be noted that households are charged GST on top of this amount which cannot be claimed as a tax input, so the cost is approximately 10% higher still.

Electricity Consumer	Cost of the SRES
Average Residential House – No Solar	Average Consumption = 130.3kWh/week ⁵ Annual Consumption = 6,775kWh STP Target = 29.5% x 6,775kWh = 1,998.6 kWh STC liability = 2 STCs Price of STC = \$37.20 plus GST Annual Cost = \$81.84 inc GST
Average Residential House – With 50% Supplied from Solar	Average Consumption = 65kWh/week Annual Consumption = 3,380kWh STP Target = 29.5% x 3,380kWh = 997 kWh STC liability = 1 STCs Price of STC = \$37.20 plus GST Annual Cost = \$40.92 inc GST
Small Business – Suburban Supermarket	Average Annual Consumption = 2,000,000kWh STP Target = 29.5% x 2m kWh = 590,000 kWh STC liability = 590 STCs Price of STC = \$37.20 plus GST Annual Cost = \$24,143 inc GST

⁵ ABS 4670.0 Household Energy Consumption Survey, Australia 2012.

Industrial Consumer

Average Annual Consumption = 50,000,000kWh
STP Target = 29.5% x 50m kWh = 14.75m kWh
STC liability = 14,750 STCs
Price of STC = \$37.20 plus GST
Annual Cost = \$603,570 inc GST

5. Trading Implications

Many of Demand Manager's customers rely on the income provided by STCs to run their business and hence the trading price has direct relevance to business profitability.

Based on the above trajectory of SRES program cost, there is a possibility the Australian Government will act to reduce the scheme costs. One such action could be a Ministerial order under the *Renewable Energy Regulation (2000)* to reduce the Clearing House price. This action can be undertaken without needing a vote in the Parliament, has been recommended by the Australian Competition and Consumer Commission (ACCC) and has the vocal support of major energy retailers Origin Energy, ERM and EnergyAustralia.

The Australian Government has not acted in recent years to reduce the cost of the SRES and Demand Manager does not believe they will considering the recent flare up of internal divisions with the LNP to the so-called carbon wars.

Additionally, the impact of the Coronavirus on solar equipment supply chains could lead to a shortage of stock in coming months, thus impacting on STC supply and further increasing the cost of the SRES. If such an impact were significant and prolonged, and not factored into the 2020 STP, then the Clearing House could play a role in 2020.

Businesses with exposure to STC pricing are urged to consider hedging products such as forward contracts or options to manage price risk. Contact Demand Manager if you would like further information about these options.

6. About Demand Manager

Demand Manager has provided financial services to the clean energy industry since 2005. We operate across a number of State and Federal Government environmental programs to assist in compliance, finance, project development and liquidity.

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