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I am an SBS consumer who installed a battery (about a month ago) to maximise self-use of my solar output. It has always been my intention to withdraw from the SBS following the installation of a battery. I am motivated by climate considerations - not SBS income. I have requested Energex to move me to the retail FiT effective from my last meter reading.

That said, I feel strongly that other SBS consumers should be able to install a battery to maximise self-use of their solar output **without** losing SBS eligibility for the reasons explained in this submission. The provisions of the draft bill seem to over-regulate what SBS consumers can and can't do, when the real issue is managing the State's SBS liability.

If clarification is required feel free to contact me on [REDACTED] or via email: [REDACTED]

Thank you for the opportunity to provide feedback on the draft legislation.
[REDACTED]

It is accepted that the government's intention is to prevent the cost of the Solar Bonus Scheme (SBS) from blowing out, because of potential unfair use of energy storage and/or additional generation by SBS consumers that was not foreseeable when the SBS began in April 2009.

The draft Bill takes a prescriptive approach by ruling out various scenarios that may unfairly exploit the SBS without also considering what may be reasonable and fair within such scenarios. The focus on preventing a blow out in the State's SBS liability has narrowed the Government's thinking and resulted in over-regulation.

While it is unsaid, the draft bill also protects revenue for incumbent generators, distributors and retailers because SBS consumers can have no relief from the escalating cost of grid electricity until after the SBS ends - 31 December 2028. The question is why should over 220,000 SBS consumers be singled out for punishment? Such revenue protection is not surprising given that **only** the incumbent industry was consulted in drafting the Bill.

The Government should allow SBS consumers the same freedom that other electricity consumers have to manage their energy bills and to take advantage of innovations in energy generation and storage according to their personal values, strategic thinking and financial circumstances.

Energy Storage

Energy storage was prohibitively expensive when the SBS began in April 2009, but prices have fallen and are expected to continue to fall significantly. When the increasing price of electricity from the grid is considered, it will not be long before electricity consumers adopt solar and energy storage as a way of containing escalating energy costs.

The financial case for an SBS consumer to install energy storage may not be there yet, but it may well exist before the SBS expires in 2028. The draft Bill fails to recognise that economics is not the only motivation in play. People's circumstances and personal values influence their need for return on investment.

It is reasonable for an SBS consumer to install energy storage **solely** to maximise self-use of solar output (from their qualifying generator), to participate in a virtual battery arrangement, or as part of demand response. Using energy storage in this way will **reduce** exports from the qualifying generator and hence, the State's SBS liability, and bring many other benefits to the entire electricity market.

Such usage is **not** contrary to "the intent" of the SBS and should be encouraged by Government policy. For now, such usage may be a decision based on personal values and / or strategic thinking rather than hard-headed economics.

It is easy to detect those SBS consumers who use energy storage in a manner contrary to "the intent" of the SBS. There will be a spike in solar export meter readings that will be obvious to the Distributor who can then investigate and act. Distributors already use this method to detect SBS consumers that take unfair advantage of the SBS.

As it stands the draft Bill prohibits a most beneficial and continuous use of energy storage that would reduce the States SBS liability. It allows SBS consumers only **intermittent** and **low-value** uses of energy storage (e.g. uninterruptible power supply for the premises during a blackout). This unfairly locks over 220,000 SBS consumers out of the energy storage market and is a roadblock for the many benefits distributed energy storage can provide to the entire electricity market during the **10 years** starting 15 June 2017 until 31 December 2028.

Energy Storage Buffering to and from the Grid

An energy storage system needs time to react when large loads start up and shut down e.g. fridge motor cycling on and off.

Assuming solar is unavailable, on appliance start-up, energy is imported from the grid to meet any shortfall between what the battery and its inverter can provide and what the appliance needs. There is no concern with these imports.

On appliance shutdown, there is residual energy taken from battery that needs to be taken care of. The safest way is to export this energy to the grid (rather than say, dumping it as heat). These exports may be a concern as they are not catered for in the draft Bill.

This buffering behaviour occurs **day and night** and prevents lights flickering, brown outs, and voltage drop when large appliances start up etc.

In my situation, such imports amount to about 0.5 kWh per day (not a concern for the draft Bill). I have no figures on such exports but would imagine it to be about the same as the imports. For my five kW system 0.5 kWh per day equates to only 2.5% of average daily exports. It should be noted that my energy storage system is charged from the qualifying generator so overall exports have reduced by at least 3 kWh per day (or 15% of average daily exports).

Whatever the outcome of the consultation process the finalised Bill must not compromise the safe operation of an energy storage system. The finalised Bill should allow buffering to the grid of such minor exports from an energy storage system.

Oversizing the inverter

The addition of panels to a solar generator (beyond the inverter rating i.e. oversizing) should **only** be done under the management of an accredited solar installer working with the manufacturer(s) of the solar panels and inverter. The owner of the solar system must first obtain expert advice regarding solar system warranty and house insurance implications.

Assuming the above has been established, it is reasonable for an SBS consumer to add panels to their qualifying generator when their circumstances change and they wish to make greater self-use of their (albeit increased) solar output (from their qualifying generator) during daylight hours. Such changes in circumstances may include the birth of a baby, or additional occupant(s) in the house, or purchase of major appliance such as air conditioning or electric vehicle etc. Oversizing the qualifying generator in such circumstances is reasonable provided there is little or no increase in exports and hence, the State's SBS liability. Again, such oversizing may be a decision based on personal values and / or strategic thinking rather than hard-headed economics.

Again, it is easy to detect those SBS consumers who use inverter oversizing in a manner contrary to "the intent" of the SBS. There will be a spike in solar export meter readings that will be obvious to the Distributor who can then investigate and act. Distributors already use this method to detect SBS consumers that take unfair advantage of the SBS.

Energy efficiency

It is reasonable for an SBS consumer to reduce energy use. This in no way conflicts with "the intent" of the SBS. These reductions in energy use may result in a permanent, and possibly significant, increase in exports going forward. It would not be hard to reduce energy use and increase exports by 500 kWh in a season (especially summer) by implementing a combination of the below.

- Decommission major appliances e.g. air con, strip heater, spare fridge.
- Replace inefficient appliances e.g. air con, fridge, TV, lighting.
- Increase the use of off peak tariffs e.g. hot water system booster, pool pump, air con.
- Shift AC loads from daytime to night-time e.g. dishwasher, ironing clothes.
- An occupant (e.g. child) moves out of the house.
- Go on holidays and leave the solar PV generating (not recommended - may void house insurance).
- Improve orientation of existing PV panels e.g. north facing frame mounting or pole mounting with or without tracking.

It is easy to detect the spike in exports; however, a Distributor can't tell from meter readings alone whether a fair reduction in energy use (as per the above) has occurred versus unfair exploitation of the SBS.

It would be reasonable for the Distributor to ask for an explanation (small spike in exports) or conduct an on-site audit (large spike in exports). If it's determined that the increase in exports is okay there needs to be a way for the Distributor to adjust their compliance processes so that there will not be continuing "false positives" going forward for that SBS consumer.

Proposal – Cap on SBS Exports

If the only issue is a potential blow out in the State's SBS liability then a proposed solution is to place a cap on exports for SBS consumers. The cap should be based on exports in each billing period averaged over the number of years that the consumer has participated in the SBS up to the commencement date of the Bill. The SBS consumer would be paid the premium FiT for exports up to the cap and the retail FiT for exports over the cap.

The Distributors have all the meter readings needed to calculate a cap for each SBS consumer for each billing period. Such a cap eliminates the need for Distributors to have compliance processes as the financial incentive to unfairly exploit the SBS is mostly eliminated. The onus would be on retailers to change their billing systems.

By basing the Bill on a cap on SBS exports it is unlikely that the legislation will need to change every time the market throws up another energy innovation, during the remaining 10 year life of the SBS.

Below is a real-world example. The numbers highlighted in blue represent the cap on exports for a given billing period and the consequent SBS payment.

Period 2010 - 2014						
Actual Readings						
Dec - Mar	Exports	Self-use	Gross	Imports	Reco SBS Cap Amt	
Seasonal Average	1762.4	443.0	2205.4	421.4	\$775.46	
Mar - Jun						
Seasonal Average	1179.8	374.6	1554.4	544.6	\$519.11	
Jun - Sep						
Seasonal Average	1261.8	406.8	1668.6	612.8	\$555.19	
Sep - Dec						
Seasonal Average	1885.2	419.2	2304.4	414.0	\$829.49	

Notes

Two person household, efficient appliances, no air con, no pool pump, gas stove.
5 kW system; Not aligned to peak sun; Up to 1 hour of shading AM or PM depending on season.
Assumes solar HWS booster continues using off peak tariff.

In the interests of fairness, further consultation should occur with groups that represent the interests of solar owners regarding the method for determining the proposed cap on SBS exports. Such consultation was not possible given the tight timeframe for submissions to the Committee.

An alternative is to offer a genuine buyback based on a battery rebate to SBS consumers. However, this has been ruled out by the Government.