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Attention: Energy Project Engineer - Ian Furness
Subject: **CONSULTATIONS: REGULATORY CHANGES FOR SMARTER HOMES**

I could not forego the opportunity to provide some comments on the proposed regulatory changes that will have an ongoing chain reaction to the South Australian solar and energy storage industry. I passionately believe that this reaction will not be positive, but rather cause harm and erode the good work and reputation the solar industry has built providing lower cost electricity to homes and businesses.

The Proposed Remote Disconnection and Reconnection Requirements for Distributed Solar Generating Plants in South Australia

This decision seems to me like it is a rushed decision!

The September start date seems unrealistic, especially considering any changes made to Australian Standards are given a 6-month period of introduction. Here the department is proposing to introduce a wholesale change to our industry and the associated compliance requirements with a two-month introduction window. Does this seem fair or even workable to our industry?

Secondly, it has not been made clear to industry if your method of control will be to use the inverters internal DRED functionality to remotely control inverters? Will it be reliable? Has this functionality been tested and proven to industry (and consumers) that it not affect other DRED enabled devices connected to the same infrastructure, like household and commercial air conditioners?

Thirdly, the mention of an anonymous entity or agent who have ultimate control over inverters seems draconian, why in today's age of transparency and accountability is this agent not able to be accountable for their decisions?

Next, it seems that the requirement to include *existing solar generating plant connected to the distribution network if a prescribed part of the persons electricity infrastructure is being replaced* may in fact create a market for the repair of existing failed inverters or encourage non-compliant behaviour. This requirement will also (I believe) force existing property owners to once again go through the pain of getting their meter changed to a type 4 time of use remote read meter and also getting a meter isolator installed. Because I'd estimate that 100,000 "dumb" import/export were installed by SAPN at of cost of \$330 (single phase) and \$650 (3-phase) to consumers when solar was initially installed.

The question must be asked, do the current generation of remote read smart meters even have the functionality?

Lastly, as a solar generation system designer and installer I am required by Commonwealth legislation and regulation to provide clients with an estimate of generation and expected savings. How can I achieve this now without a significant “consumer confidence depleting” disclaimer? Does a statement like this give you confidence in your solar designer or solar retailer; This generation estimate and associated return may be effected by a control of your system by a registered government agent authorised to remotely disconnect and reconnect the plant in the circumstances that the owner of the solar generating plant is lawfully being directed to disconnect or reconnect.

Proposed Export Limit Requirements for Distributed Solar Generating Plants in South Australia

Dynamic export limits for other distributed generation technology, including battery storage, hold little value to homes and business (<160MWh consumption) sites in South Australia.

The problem of reverse energy flow has been identified by the network operator for several years now. The failure of the decision makers at the AER to compensate and incentivise SAPN (and other DNSP’s) to develop solutions has forced the DNSP’s to act in a knee jerk fashion.

The obvious solution is to add storage load into our network. Small scale distributed batteries are NOT the answer!

The issue needs capital to be invested in grid scale energy storage solutions, like, pumped hydro, inertia energy storage (like Energy Vault) and grid scale batteries.

The SA Government believed they were doing something right when they incentivised batteries with their SA Battery Subsidy but in fact, all they have done is prove that the surplus energy peak is still there across the middle of day. As most home batteries are fully charged well before the peak in 3 out of four seasons of the year.

Dynamic control is an interesting concept, technically how is it proposed that that the network or this “independent agent” achieves this level of control? Will it be driven by DRED? Unlikely, as I don’t believe that is in an option on the DRED capabilities. Will it be driven by type 4 time of use smart meters? Unlikely, as these are operated by metering service providers and as I understand current meters, they have no functionality to do so.

The whole concept of dynamic inverter control sounds good in theory, but I believe the practical aspects of the concept have not been explored and large floors exist in its application.

The State Governments (with premium Feed-in-tariffs) and Commonwealth Government (Small Scale Technology Certificates) as well as energy retailers with (FIT) have help construct a solar industry where consumers have an expectation of being remunerated for their surplus generation. The effect of dynamic control will not be well received by new consumers.

The question must also be asked.... Will this agent or the DNSP dynamically control ALL solar generation in SA, so does this include "generation only" sites up to 200kW and similar SCADA controlled sites up of 5MW of PV?

Isn't the equitable solution to consider the solar self-consumption to export ratio and limit the sites with the largest amount of export/self-consumption ratio first?

Also isn't there another network issue with negative pool electricity prices at times of low load, where sites are now using AI controls switching off and on their generation, causing big swings in demand. Isn't it easier to control 200 X 200kW sites than try and control 8,000 x 5kW sites? Or the same logic, isn't it easier to control 10 X 5MW sites than 10,000 X 5kW sites?

Proposed New Low Voltage Ride Through Requirements for Smart Inverters in South Australia

Didn't the industry update the inverter standard AS4777 to protect its network and now has discovered that "ride-through" has become an issue?

Are we going backwards here? Or are we simply failing to address the nature of the network. Hasn't the current UNSW SPREE study on inverters determined that manufactures have been all had different outcomes trying to achieve AS4777 requirements and many have ignored or provided solutions that are not reliable.

The data from this study needs to be made public to industry. Name names! What works and what doesn't.

Proposed Smart Meter Minimum Technical Standards in South Australia

What a great idea.... Make MSP's use a 3-phase meter with a dual element. For too long now we have suffered with having to make space for two separate meters (and a retrofit meter isolator) on properties, one meter for peak load and one for off peak controlled load.

Electricians know, electrical switchboard real estate is some of the most valuable in home or business!

Why not legislate (or regulate) that for a 3-phase property that installers provide a minimum of 36 poles circuit breaker space to help the integrity of electrical installations.

Also, another consideration could be that data from smart meters can be viewed freely (and easily) and that solar generation and battery information become channels. It seems crazy that today we are installing PV inverter and battery manufacturer meters in series with energy retailer meters.



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Closing Summary

I could have added so much more to these subjects and in consultation with other electrical and solar contractors, but the time frame for submissions was extremely short. It makes me think the industry is going to be forced "kicking and screaming" to abide by these changes.

I believe there needs to be a workshop or round table (or series of) with SAPN, the OTR, with the inverter manufacturers and contractors to help us all understand the ramifications help to provide a workable solution.

As a career electricity professional with over 35 years working in electricity generation, electricity retailing and renewable generation I hope my concerns are taken seriously. I am available anytime to discuss my submission and help our state transition to a clean energy economy with a reliable and fully functional two-way grid.

Kind regards
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