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Consultation on regulatory changes for smarter homes in South Australia

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

10th July 2020

South Australia Department for Energy and Mining,

Sonnen Australia sonnen is one of the global market leaders in smart solar energy storage with more than 50,000 residential sonnenBatterie systems installed worldwide. sonnen is driving forward the move towards decentralized and digitalized electricity supply through the sonnenCommunity – a pioneering energy sharing platform which enables sonnenBatterie owners to achieve 100% independence from the grid.

The sonnenBatterie is an intelligent energy storage system which allows its owners to use solar electricity day and night, whilst also enabling users to change the way that they manage and control their energy. It saves money by storing the surplus energy generated by solar panels when not needed and makes it available at times when it is needed.

At sonnen Australia, we believe in clean, affordable energy for everyone. We are passionate and driven to have a positive impact on our environment, and on the people within it. We are customer focused, inventive, audacious, inclusive, clear thinkers who make learning a habit and always maintain a winning attitude.

Sonnen Australia welcomes the opportunity to provide feedback on the Government of South Australia (SA) Department for Energy and Mining consultation on the proposed new low voltage ride-through requirements for smart inverters in SA.

It is widely accepted that more storage is required in the Australian market to support the higher penetrations of variable renewable energy (VRE) seen across the NEM. The 2020 AEMO Integrated System Plan (ISP) estimates significant penetration of distributed storage needed for the optimal national energy market (NEM) generation mix. The ISP Central Scenario assumes 1.1GW of behind the meter batteries – participating in a VPP or as a stand-alone asset by 2030. The High DER scenario assumes >15GW VPP and stand-alone BESS assets operating by 2030. This will only be possible if installs are not physically prohibited or subject to major cost-increases for installation.

Although in principle sonnen Australia supports the intent for dynamic export limits we are very concerned that the SA Government proposal to mandate technical solutions from 1 January 2021 will be counterproductive and could undermine the excellent work that has been undertaken by SA Power Networks, the Australian Renewable Energy Agency (ARENA), the Australian Energy Market Operator (AEMO), the Australian National University (ANU), Standards Australia and others.

It is too soon to mandate this technical capability in inverters. We strongly doubt that the proposed timeframe is achievable. Even if the proposed timeframe could be achieved, it could come at the cost of undermining the goals of interoperability and cyber security in the longer term.

There is a widely shared view across industry that **the international standard, IEEE 2030.5, should be the 'end game'** for interoperability of distributed energy resources (DER). Introducing a South Australian specific solution to the



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problem into the mix will be distinctly unhelpful and challenge to put right in years to come and this approach ultimately would be a major setback for the state.

Even though there are technology vendors with products available that can currently enable dynamic export limitation, there are no agreed standards for dynamic export limitation in place yet so for any aggregator or controlling entity it can be very difficult to communicate with a wide range of inverters. Therefore, developing agreed standards across industry is important.

The SA Government has proposed that a dynamic export limitation requirement should be mandated from 1 January 2021. There is no possibility on an agreed standard by that time by the broader industry. We understand that the SA Office of the Technical Regulator (OTR) is considering a 'deemed to comply' approach. It would be a highly retrograde step for the OTR to start 'picking a technology winner' and deciding on its preferred technology in advance of the development of standards and application programming interfaces (API's). This could set back moves toward interoperability investment and development works by introducing South Australian only protocol.

There is a need for a clear and consistent national standard for dynamic export limitation and for this to be referenced in the Government regulations. Interoperability and cyber security standards are very important and are not yet in place. SA Power Networks still needs to work with the API Working Group and with industry more broadly to develop these standards to support the implementation of 'Flexible Exports'.

We strongly urge the SA Government to carefully consider whether insisting upon an impractical timeframe will undermine the work towards better interoperability with agreed standards and cyber security. Insisting on a South Australian solution in an unreasonable timeframe is an obstruction to the people already working collaboratively to solve the technical issues for the industry as a whole by developing a dynamic export limitation platform.

The consultation paper states that "the proposal is technology neutral, allowing the competitive market to determine the most efficient way of meeting these technical standards". This approach does not avoid the need for performance specifications. It is unclear whether the SA Government will accept any level of performance that meets the requirement for dynamic export limitation or if there will be expectations regarding response times, ramp rates, priorities of utilization and metering accuracy for example. If there will be performance criteria, it is unclear who will set the criteria and the process that will be used to do that.

Given the work already done internationally there is a shared commitment across industry, researchers, distribution network service providers (DNSPs) and energy policy makers to the adoption and staged implementation of the international standard, IEEE 2030.5. This should ultimately be the end game. It would be a mistake to prescribe interim solutions that will create legacy issues and will deflect from the end game.

IEEE 2030.5 is already being utilised successfully in Australia. The Onslow Project, for example, is in the latter stages of completion and Horizon Power has control of more than 200 DER installations via IEEE2030.5.

We understand that AEMO is about to commence the development of standards for interoperability and cyber security. We are very surprised that the OTR and the SA Government thinks it is better placed than AEMO to undertake **this work and to select 'deemed to comply' solutions in advance of standards.**

SA Power Networks has developed some world-leading Virtual Power Plant (VPP) programs. The consultation paper does not provide any comfort that the SA Government has considered the impact of its proposed dynamic export limitation requirements on the SA Power Networks VPP programs.



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There are significant potential ramifications for VPPs and Frequency Control Ancillary Service (FCAS) operation as export from storage may be curtailed under the proposed approach.

If this goes ahead then we kindly suggest to the SA Government to make exempt VPPs from device-level requirements for export control. VPPs are already controlled at the aggregate level. A multi-layered market aggregator needs to take account of multiple competing priorities to deliver the required performance across its fleet. It would be unnecessary and counter-productive for the SA government to mandate an additional layer of requirements on devices that are already part of a VPP.

It is also very unclear within the proposal how the SA Government proposes to verify the capability it is seeking to **mandate**. **Will the SA Government accept a manufacturer's declaration that its product has the requisite capabilities?** If not, will the SA Government expect independent verification that devices can perform as required? If so, who would test the capability and against which standard will products be tested? If the OTR is going to pick technology winners, what will be the process and criteria for OTR approval?

There has been for some time industry discussions around the long-standing concern about the use of static zero export limits as a condition of grid connection and we would strongly prefer dynamic operating envelopes instead. **Nevertheless, we are concerned that the SA Government's interventions will** severely limit the technology options available and could make installation of solar impractical, at least in the short term.

It is also very evident that little attention has been made to the implications to the actual asset owners, the end users who have paid in many situations tens of thousands of dollars for a solar system with storage will now have that asset controlled and will be directed to by SAPN as to what their financial return will be, this is a wholly unjust proposal and one which I expect would receive quite a consumer backlash from.

If you have any further questions or seek any further clarification please contact me via j.sturcht@sonnen.com.au.

Yours faithfully,

A handwritten signature in black ink, appearing to read "J. Sturch", written over a light blue rectangular background.

James Sturch
Technical Director APAC
Sonnen Australia Pty Ltd