

10 July 2020

Ms Rebecca Knights
Director, Energy Policy and Projects
Department of Energy and Mining
Government of South Australia

Electronic Lodgement

Consultation on Regulatory Changes for Smarter Homes – Department for Energy and Mining, South Australia Government

Dear Ms Knights,

Energy Networks Australia are pleased to have the opportunity to make this submission in response to the South Australian (SA) Government's Consultation on Regulatory Changes for Smarter Homes.

Energy Networks Australia is the peak industry body representing Australia's electricity transmission and distribution and gas distribution networks. Our members provide more than 16 million electricity and gas connections to almost every home and business across Australia. They include ElectraNet (electricity transmission), Jemena (gas distribution) and South Australian Power Networks (SAPN, electricity distribution).

We and our members are supportive of efforts to improve energy security and technology standards in the SA and the rest of the National Electricity Market (NEM). We are especially interested in the developments in SA as it will serve as a basis for the rest of NEM as distributed energy resources (DER) uptake increases in other jurisdictions.

As a general comment we believe that the timelines for implementing the proposed regulations are ambitious and there is an increasing risk that sub-optimal solutions will result. We note that the time allowed for consultation on four separate aspects of the proposed changes, which will affect all levels of industry, including consumers, is exceptionally short. This lack of opportunity to engage fully with stakeholders on the implications of the proposed regulations may result in poorer outcomes and adoption which will negatively impact on the positive aims of the regulations.

We note that technical standards for DER are also the focus of a number of current reviews, including that by the AEMC covering DER Minimum Technical Standards¹. While we recognise that inverters are being deployed in SA rapidly and there is a risk that they will be non-compliant, it would be preferable to align the SA regulations related to inverter standards to the current rule change request process being led by the AEMC to ensure national consistency.

Our opinion is that the most critical issue is voltage ride-through and should be expedited ahead of the other proposed regulations, which can be pursued on a

¹ <https://www.aemc.gov.au/rule-changes/technical-standards-distributed-energy-resources>

longer timeline. Other issues such as cybersecurity and interoperability, whilst important, are not critical within the timeframes specified. We would also like to point out the broader implications to bypassing to the Review of DER Governance work being conducted by the Energy Security Board².

These proposals will have significant impact on not only new DER consumers, but also existing ones.

When an inverter is disconnected, the consumer loses access to their generation and then subsequently needs to import (buy from a retailer) electricity to meet their essential needs. Given that most consumers invest in Solar PV to minimise their energy costs, this negates the value proposition for investing.

Poorly implemented regulations will force costs onto consumers and may motivate them to look at alternative approaches to minimise disconnections. They may even explore ways to circumvent the mechanism, decreasing its efficacy and resulting in severe negative safety issues.

1. Consultation on the remote disconnection and reconnection of solar generation plant in SA

This consultation would benefit from greater clarity in describing the functions required to achieve the objective. For example, it is unclear if only a physical disconnection required or if an equivalent result can also be achieved by reducing PV output to zero. A technical specification should be developed (with associated timeline of when critical functions are needed) in consultation with industry as a priority.

We would also make the point that the objective (to limit export of Solar PV) is not exclusively delivered by the solution being discussed (control through Smart Meters) and that there are a myriad of other potential technical solutions and market solutions which may be able to deliver the same objective (mitigating minimum demand) at lower cost, risk and effort. This includes increasing demand to manage increased solar output, as is envisaged by the recently approved SAPN “solar sponge” tariff. Demand side response is an important source of flexibility, both downward and upward that should be explored.

The paper introduces a new “agent” role and the responsibilities of this party to consumers is unclear. For example, in some instances an agent may not be required if the functionality can be automated to respond to a direct communication from the distribution network service provider (DNSP). If agents are used, common communication modes must be established along with the interface between them and the DNSP, for example through an API.

To promote accountability, we would like clarity in the role and responsibility of each party. For example, it should be confirmed that the DNSPs will be responsible for executing disconnection and reconnection orders, which will be received from the market operator. Alternatively, many of the benefits attributed to agents could be simplified by passing these responsibilities to SAPN.

The scale of the problem should not be underestimated, and it will take time and effort to deliver effective solutions. We believe the timeframe specified is insufficient to allow successful engagement and implementation. Implementation

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<http://coenergyCouncil.gov.au/sites/prod.energyCouncil/files/ESB%20Governance%20of%20DER%20Technical%20Standards.pdf>

needs to be well considered to avoid technical, financial and other stakeholder risks and should be delayed to January 2021 at the earliest.

2. Consultation on the proposed export limit requirements for distributed solar generating systems in SA

Enabling dynamic export limits in the future and extending the requirements to batteries is broadly supported by the industry. The inclusion of batteries is well informed by the learnings discovered in the South Australian VPP trials as a way to optimise their storage behaviour.

We propose that SAPNs Low Voltage Management Strategy, recently approved by the Australian Energy Regulator (AER), should be completed before this requirement is mandated. We believe that this functionality is unlikely to be ready for industry to successfully implement before July 2022.

The capability described would require a technical standard, such as IEEE2030.5. Compliance with this standard should be included in the Regulations and a technical roadmap of capabilities should be articulated. The market can then be given an opportunity to propose efficient solutions with less risk of consumers incurring higher costs.

3. Consultation on the proposed new low voltage ride-through requirements for smart inverters in SA

This issue has been identified by the industry to be the most critical of the many issues that the South Australia electricity system faces today. However, there are a number of associated issues which must be addressed first.

Our concerns include

- an inability to test inverters in the short timeframe due to a limited number of test centres with required capability;
- a lack of confidence in the testing conditions prescribed by previous versions of AS4777;
- the inverters cited in the consultation paper, represent only ~20 per cent of inverters in the Australian market. There is a risk in extrapolating these results to all other inverter models;
- a lack of clarity on who is responsible for inverter compliance and how this will be enhanced to support the implementation of these revised requirements;
- AS4777 is currently being updated and is expected to be published in March 2021, with the draft available for review now. While we recognise the urgency of the situation in SA, the aim of the current revision of AS4777 is to present nationally consistent standards to support both inverter manufacturers, installers and consumers with compliance. To pre-empt the outcome of the current review of AS4777 may result in failures in compliance that would be counter to the aims of the regulations.

Again, we stress the effort and resources needed to address these issues and do not believe the current timeframe is practical. We believe that by creating a compliance deadline, there will be a large spike of connection applications as

customers attempt to “get in before the deadline”. This will cause perverse outcomes by increasing the scale of the issues.

4. Consultation on the proposed smart meter minimum technical standards in SA

The proposal for smart meters to have a minimum of two elements with a dedicated contactor for each element is inconsistent with current industry practice. The current market practice is to aggregate all consumer DERs and loads with one contactor, as this is considered to deliver the lowest cost.

- The key concerns of the proposed changes are that the costs and benefits of the proposed changes to smart meter connections have not been calculated, or show any potential consumer benefits;
- associated costs for wiring and for potential switchboard repair/replacement have not been considered. A key learning from the Victorian AMI rollout was the significant cost to rectify unsafe or damaged installations under duty of care obligations;
- more clarity is needed on how the disconnection function will work and the criteria for disconnection;
- smart meters still rely on the public communications network which is also susceptible to failure caused by power system events. This brings into question its credibility as a viable solution. When smart meter communications fail the DER will remain connected and generating. If disconnection is required a backstop is needed;
- this is unproven and there is a lack of use cases/examples of this being an effective solution;
- the proposal works only for consumers with a single-phase installation and there has been no consideration of customers with three-phase or controllable loads;
- the tight timeframe restricts the ability to provide oversight, articulating clear benefits to customers and the mechanism of re-energising and de-energising of customers’ DERs;
- Demand side response as a means to mitigate system security issues, including minimum demand, is well-established elsewhere in Australia and overseas.

5. Consultation on proposed tariffs to incentivise energy use in low demand periods in SA

Energy Networks Australia supports the implementation of a “solar sponge” time of use tariff starting this financial year 2020-2021.

In order to be fully effective, those with large loads, e.g. electric vehicles and air conditioners, should receive the tariff automatically, but with the option to “opt out”. This would help ensure that the growing DER customer base is fully enrolled and can benefit from the tariff, while delivering a cost-effective solution to managing minimum demand issues.

We thank the department for the opportunity to make a submission to this important work and look forward to working with them to ensure the energy future of South Australia.

Should you have any queries on this response please feel free to contact me,

Yours sincerely,



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