10 July 2020

Submitted via email
ETRConsultations@sa.gov.au

Dear ETR Consultation team,

PLUS ES welcomes the opportunity to provide feedback to the South Australian government with respect to the below consultations:

- Consultation on the proposed remote disconnection and reconnection requirements for distributed solar generating plants in South Australia.
- Consultation on the proposed export limit requirements for distributed solar generating systems in South Australia.
- Consultation on the proposed new low voltage ride-through requirements for smart inverters in South Australia.
- Consultation on the proposed smart meter minimum technical standards in South Australia.
- Consultation on proposed tariffs to incentivise energy use in low demand periods in South Australia.

PLUS ES is supportive of the objective the SA government is setting to achieve. We do have a concern around the proposed implementation timelines and whether the prescribed solutions will achieve the objectives. We would also like to provide feedback on the content of the above-mentioned proposals.

We have collated our feedback in the table below against topics rather than against a specific proposal.

Topic	Details
Timelines	PLUS ES suggests that: • The timelines proposed are aggressive and it is difficult to understand the benefits of having meters/inverters with new standards being installed from September 2020 versus allowing a realistic timeframe for implementation of new standards. • A compromise to be sought between delivering the requirements of the objective and enabling enough time for consultation of requirements and the delivery timeframe. • The commencement timeline for each of the steps to be considered individually, on each objective's merit, such as a phased implementation of each capability where possible. • Development and/or implementation of systems/hardware changes would require generally a minimum of 6 months. Any development has a dependency on the details. • The current industry consultation roadmap needs to be considered when determining and publishing commencement dates for new standards to minimise impacts to existing industry programs which have already commenced delivery, i.e. 5MS/GS requirements, remote energisation, etc. • Consideration needs to be given to the impact the proposed timeframes will have: ○ to the metering supply chain (upstream/downstream) and ○ to the regulatory obligations with respect to customer's metering requests. • January proposed commencement dates need to be reconsidered, as during the December - January timeframe: ○ Industry tends to shut down/slow down ○ Resourcing is not at full capacity ○ Summer tends to be a bushfire risk season • Additional consideration should be given to the current COVID environment and its current impacts to the industry: ○ Economic ○ Environmental

	○ Logistical ○ Resourcing • Considering the above challenges a period of no less than 6 months should be considered as a commencement date following the collective publication of the guidelines, regulatory framework and the technical standards.
Sustainable requirements	• PLUS ES recommends that the framework determined by the SA government and the industry should enable a consistent short and long-term approach which would allow impacted parties to make informed investment decisions, as required. The framework and technical solution should form the foundation of the long-term future state rather than a temporary state with an obsolete solution. • Reviewing the consultation proposals collectively, it appears that there are 3 different systems being requested with slightly different timelines and no immediate benefits towards meeting the objective the SA government is setting to achieve. However, this will result in customers having to possibly pay twice to duplicate functionality: upgrading the metering point as well as the inverter.
Consultation Matter	• The information provided in the consultation papers mentioned above did not provide enough detail. It was a high-level overview. In the absence of the next level of detail and associated documents, it is difficult to provide an informed submission on potential uses cases, technical solution or the implementation challenges service providers will have to overcome.
Target sites	It is unclear what will be the approach and the type of sites/customers targeted for generation reduction: is it all customers with generation, or a subset of customers who are net generating. • If it is the former, then the objective can be met with communications directly with the inverter and requires less solution complexity. • If it is the latter, then a measurement of the net load at the connection to the network would be required to detect net generation. ○ This information could potentially come from the meter, conventionally connected as Net but would need to interface to the inverter.
Generation reduction by	Whilst there are several technical solutions to achieve this, it will require additional hardware control and has other implications

disconnecting the inverter	• For single phase/ no load control customers, this could be the second element of a two-element meter
	  ○ An additional metering element dedicated to the generator would also cause market challenges, with respect to how the gross generation metering data would be managed, unless a two-element meter is configured for net measurement across the two elements for market settlement, relegating the gross generation measurement as a statistical, off-market measurement
	  ○ Current procedures/regulations do not permit for back office aggregation of generation datastreams for the calculation of net.
	  ○ Gross generation information can be provided from the second element of a twin element meter, however, in the absence of any market publishing mechanism this will require off market delivery interfaces
	  ○ Gross generation information is potentially available directly from the inverter as well albeit not accurate as compared to the market meter.
	• For every other connection configuration, extra hardware would be required, such as an additional measuring element on the meter and/ or external contactor controlled by the meter
	• For any generation control by the meter, it requires the generation circuit to terminate at the meter box. This is not always the case, such as solar and inverter at a remote shed
	• For generation control by the meter, it would also require the establishment of some form of communications protocol, like the proposed (but not yet established) Load Control Shared Market Protocol. This has not been defined, nor have the performance requirements been determined
	• By controlling the generator at the meter, this potentially precludes the opportunity for the customer to charge batteries that are on their inverter circuit. In contrast, by throttling the inverter directly, the inverter does not turn off, but battery charging could potentially continue
	• Any additional metering hardware required will be at an additional cost to retailer & customer and will be compromised by the available real-estate on the existing customer switchboard
	• By requiring both the inverter to be dynamically controlled and for metering to directly control generator circuits, there is duplication of infrastructure.

Export limit requirements	• The smart meter could potentially support dynamic export limiting:
	  ○ The net generation measured by the meter could potentially be communicated to the inverter. This would require the definition of an interface between meter and inverter and would require the inverter to adjust generation to match published limits. (This approach would achieve the limiting without the use of disconnect contactor).
	  ○ The meter could potentially receive remote signals via a group command instructing meters, to disconnect the inverter. This would require the definition of a communications protocol between the back office and all meters. In this case the back-office would assess the published limits as a trigger whether to command the meter to disconnect the generator.
	  ○ The meter could potentially receive and store the published limits and, subject to net generation measurements, disconnect the inverter when limits are exceeded
	However, each of these approaches would require hardware and systems development and, importantly, clear definition of requirements, such as the definition of the export limits – specific kWh limits or percentages.
	• PLUS ES sees value in extending the dynamic export limits for other distributed generation technologies, including battery storage but where there is a net export value. Customers should be incentivised to take up offers by having an option to store and consume their own generation mitigating any negative impacts due to export limiting their generation when excess generation can be consumed within the house or stored in batteries.

Technical Regulator and Guidelines	PLUS ES suggests the technical guidelines focus on outcome by providing the detail and clarification of the standards whilst being solution agnostic. • Technology is constantly evolving and interested parties should be able to grow or challenge the current status quo. Developing a guideline, based on current technical solutions only will discourage new emerging solutions. • Alternatively, prescribed solutions could also be prohibitive for other parties offering their services.
Complexity of the Market	• National Electricity Market is continuously evolving, stakeholder engagement and service providers relationships are complex and changing; to mitigate any potential additional costs passed on to customers when churning FRMPs, the technical standards and market framework should be agnostic of Retailer, MP

	and /or service provider.
	• The NER refers to the MC potentially:
	  ○ The MC is not the same entity as the MP/MDP who manage the meters, or
	  ○ The MC does not have a relationship with a 3rd party service provider who can offer the reduction of generation whilst not involving the meter.

SA smart meter	• *"It is understood that currently some of the metering being installed in South Australia has two elements and two contactors."* It is possible that by simply wiring new installations differently it could provide increased functionality for the customer. However, majority of the twin element metering with two elements and two contactors being installed is to meet controlled load requirements. It is incorrect to imply any existing site meter can simply be rewired to provide additional functionality. It may require a replacement of the existing meter for a brownfield site or fitting a different more expensive meter for a greenfield site. The "simple" solution of utilising a two-element two-contactor single phase meter is only directly applicable to the customer with a single phase with no load control supply. In all other circumstances, additional hardware is required. • *"A customer that has solar generation with general load and controlled load would not be able to have each measurement done separately and controlled with a two element two contactor meter. These customers would need to be wired in accordance with current practice of general load and solar generation on one element and controlled load on the other element"* This will create two classes of customers, those with controlled load who avoid the option of having their solar turned off and those without controlled load. • The technical requirements do not provide guidance on how to treat a 3-phase general load. In addition, AEMO's ruling is that it is not valid to calculate a net customer consumption by using interval summation across two different meters. • Current NER rules allow customers to opt out of remote communications. Disconnecting solar generation using metering communications might encourage more customers to opt out, which is not a desirable result, and would not provide the required dynamic PV disconnect capability either. • This SA specific requirement to amend the minimum specifications of meters will create another niche state in the NEM. • The proposal to separately wire the Solar Inverter through the second element

	of the meter will not allow the household to operate in “protection” or “backup” mode using its own PV and batteries in the case of grid outage. (This is one of the promoted features of the SA VPP)
	
	To allow the household to use PV power during a grid failure, the PV must be connected to the house load after the meter as it needs an automatically operating islanding device between the network and the protected circuits in the house. This is incompatible with the requirement to have the PV inverter terminate on a separate circuit at the meter as the regulations do not allow the islanding device to be installed on the network side of the meter.
	
	• Two-element three contactor or three-element three contactor smart meter wired correctly would be of value to consumers with solar generation, controlled load and general load. Any scaled deployment would require a minimum of 9-12mths including an end-to-end feasibility assessment but not limited to:
	  ○ Procurement of stock and suitable hardware
	  ○ Customer incentives and market drivers
	  ○ Commercial agreements with stakeholders
	  ○ Operational readiness – system changes /back office field processes and training
	• Any retrospective change in wiring will require additional field visits. Such changes generally open additional site challenges like space on boards, asbestos, degrading meter boards and old wiring, shared isolation etc.

PLUS ES would welcome any further discussion in relation to this submission.

If you have any questions or wish for further discussion, please contact Helen Vassos on 0419 322 530 or at Helen.vassos@pluses.com.au.

Sincerely,

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