

Dear Sir or Madam,

SHARPE GROUP - ENERGY HUB is a SA based private family business operating for over 40 years. We are a Clean Energy Council Approved Solar Retailer and Member, a Smart Energy Council Member and an Accredited Master Electrician Member. With over 40 years and 20 years of solar operation we boast more than 10,000 installations experience. We are proud of our reputation throughout the Adelaide Metropolitan Area. All our employees are fully licensed, insured and guaranteed by our company including all the install team which means NO sub-contractors. We are a Smart Energy Company focused on providing the highest quality energy rated systems available specifically engineered and curated for residential homes.

As a local firm we understand that minimum net demand is an emerging challenge that must be managed in South Australia due to the high penetration and continued installation of rooftop solar and that as solar generation continues to be added to the distribution network, it is prudent to future proof the technical capability of the technology that is installed.

With this understanding we have some strong views on the proposed regulatory changes proposed to be implemented in South Australia from Spring 2020 onwards. Our deep concerns stem from the timelines which are being proposed, the speed of the consultation process and that these proposals could not have come at a worse time from a business and economic perspective with all that is going on in the world. Our view is that the technical roll-out of most of these regulatory changes is unfeasible and could cause damage to the industry without strong technical delivery being thought out.

Our organisation, as a major player in the HBS scheme would appreciate been afforded the opportunity to be involved in strategic discussions and consultations going forward as this has a deep impact on our business and also our customers.

Please see our comments enclosed.

Yours Sincerely,

David Sharpe

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Consultation Paper 1: Proposed remote disconnection and reconnection requirements for distributed solar generating plants in South Australia

At the Sharpe Group – Energy Hub we are opposed to the blunt disconnection and reconnection of solar generating plants. Our feedback and comments are centred across a number of themes as indicated below:

Monitoring

To be able to provide this level of controllability, monitoring of the LV network is required. From our knowledge the coverage of the SAPN LV network is limited to certain areas. One method of increasing the monitoring of the LV network is via behind the meter assets such as inverter and battery storage assets. Our concern for utilising data from behind the meter is two-fold, firstly that a range of equipment and level of accuracy is delivered as part of the behind the meter solutions leading to inconsistencies and discrepancies. These inconsistencies and discrepancies would need to be assessed and understood before a disconnection event should be activated. Secondly, there is no mention of how and what data needs to be provided and whose responsibility will it be to ensure equipment is connected and data is being transmitted and continues to be connected post installation.

Technical execution

To meet the requirement for this particular regulatory change there are two approaches, either to introduce a third-party device for blunt type disconnection control or to embed this level of control directly into the delivered inverter hardware. It is unclear of the approach which is required to meet the regulatory change requirement, there is no mention of the control or notification mechanism to make this fully autonomous. This level of detail hinders our ability to perform a product selection and technical assessment of integration into our package offerings. Integration with the registered agents and technical regulator needs to be more specific so as to ensure a fully functioning product to meet all technical requirements.

Most inverter and battery storage companies have monitoring and remote update capability of their hardware, it would be our recommendation that this technical functionality be added to existing hardware deployed in the field without requiring additional hardware to be installed and further costs be incurred by households.

There are instances where we retrofit a battery storage device to an existing solar residence. There is mention of bringing a residence up to specification if revisiting a residence for replacement or reconfiguration. It is our opinion that requiring an installer to make a change to existing solar systems will drastically impact the retrofit installation market as most designs in this instance would be for an AC coupled solution so as to not affect the existing solar system installed.

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Costs and losses incurred

We are opposed to this regulatory change as the blunt disconnection of solar generation plants means that customers will be unable to produce solar for self-consumption or charging of battery systems. Obviously, house load will then be drawn from the grid, whilst this benefits the grid it does not benefit the customer and increases payback periods when calculating ROI. Payback periods are a major part of the sales process for new systems and could impact uptake. With no specific mention of remuneration for a customer it is difficult to make a technical assessment of the impact either positive or negative.

This leads to the issue of transparency of information and management by a third party of a behind the meter asset owned by the home owner. It is our opinion that a customer must be informed of when they are curtailed, how long the event occurred and how much remuneration they should expect. There is also a question of whom will be responsible for the remuneration activity for a customer and the impact to market data and settlements at a retailer level.

In the instance where any additional hardware is to be installed, additional costs will be required to be passed on to the customer. Any additional costs to be added as part of the sales process is a hinderance to the uptake of technology by residential home owners. Embedding this level of functionality into the existing inverter hardware being delivered as part of an installation would be the preferred option.

Communication of the new requirement will be an educational process for existing and new customers. Additional costs and technical details on execution will increase the complexity of the sales process. In the case of replacement of parts or system being brought up to spec, how will a customer be notified of this new requirement and any additional cost to be incurred. Detailed requirements in this regard must be provided as soon as possible, specifically indicating under what circumstances this is required.

Timeframes and delivery

For a successful rollout it is required that we undertake product selection, working with any of our existing hardware vendors to ensure compliance, integration into existing system designs and packages, and the testing of additional equipment for compliance and integration, must be undertaken. It is our opinion timeframes seem a little short given the mechanism and overall structure of the requirement and communications are not detailed.

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Consultation Paper 2: Proposed export limit requirements for distributed solar generating plants in South Australia

At the Sharpe group – Energy Hub we agree that hard set export limits disadvantages individual household owners and this should be shared across the network. This regulatory change is preferred over the disconnection and reconnection change proposed as part of the attachment 1 solution, this approach would seem the most logical solution as it benefits the network and is the least impact to a consumer. All equipment in the HBS is required to be VPP ready, most of this requirement is extended to a large number of solar inverters when paired with battery storage. The capability and mechanisms are already developed in most instances, they are understood across the industry and are technically feasible.

Consumer opportunity

With lower export feed in tariffs and with consumers still able to self-consume, it could be argued that a financial incentive may not be required for a consumer to limit export limits. As with any consumer market place you can only sell a good where there is a buyer for the item. If the network is the counterparty in this instance and does not have a need for a particular commodity then it could be argued that a solar generation asset is unable to sell to a non-existent market at that particular period of time.

This issue of transparency of information and management by a third party of a behind the meter asset owned by the home owner is also of concern here. It is our opinion that a customer must be informed of when they are curtailed, how long the event occurred and how much remuneration they should expect. There is also a question of whom will be responsible for the remuneration activity for a customer, the impact to market data and settlements at a retailer level.

Battery storage

It is our strong opinion that this should definitely be applied to battery storage. As home owners join VPP's, the conflict of high pricing events in the spot market will be an issue, if battery storage is not included this could lead to solar only home owners being severely impacted whilst battery storage home owners benefit. There is an additional complexity of market region level-based signalling not equating to the local LV network specific circumstance. This conflict must be accounted for and managed.

In regards to battery storage applications, separate recommendations and rules for Hybrid, AC and DC coupled solutions are required. Each of these operate differently and metering must be at the meter not at the terminals to ensure adherence to the dynamic zero export limit.

Details must be given on the responsibilities and action in regards to replacement and requirement for upgrade of system components to meet this new requirement. That is, the prescribed parts in this scenario are either the solar inverter or battery

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storage system inverter/EMS. Although this needs to be specific in regards to AC/DC/Hybrid coupled battery storage solutions.

Technical delivery

Paragraph at the top of page 5 is a little ambiguous, understand the intent but if read incorrectly means we need to go back and fix all existing systems. It is our belief that this is not the intent of the paragraph.

One of the positive outcomes of this approach is that this provides an opportunity for increased demand response solutions behind the meter to coordinate the maximisation of self-consumption and will lead to increased technology uptake.

Considerations must be made to the testing regime, any communication losses, and how will system outages be managed. Details on what is the recourse and where does the responsibility lie in such instances must be worked through. Details of the data requirements needs to be provided and whose responsibility will it be to ensure equipment is connected and that data and dynamic export limits are being transmitted and accepted by a system and continues to occur post installation.

Timeframes and delivery

With such short time frames this option seems the more practical as most inverter and battery storage systems have remote update capability for configuration and rolling out dynamic export limits should be possible relatively easily and quickly.

Remuneration

In the event that remuneration for a home owner is required, it is unclear if the proposal for DER aggregation assets are to be remunerated at a market or local level. If the remuneration should be at market level then a market offer above all other opportunities in the market must be the offered to ensure the system responds positively to the event/signal. VPP providers must be aware and factor the remuneration as to be able to ensure stability of the grid and should override any market led signals for exporting battery storage, this will become more of an issue as aggregators expose/optimise consumers to the wholesale rate and ancillary markets such as FCAS.

Details on who is the counterparty on the expiation fee and whom will be responsible for the remuneration activity for a customer, the impact to market data and settlements at a retailer level must be provided so that solutions can be designed and developed.

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Consultation Paper 3: Proposed new low voltage ride through requirements for smart inverters in South Australia

We are the Sharpe Group – Energy Hub fully support this regulatory change to ride-through requirements for smart inverters, this requirement and new testing procedure sounds logical. As mentioned most inverters will already have this capability / response developed, it is just the formal testing. We feel when considering the development changes to firmware if required, external testing and verification to occur, the less than 60 days will be a challenge.

The availability of information to indicate to us as a system integrator and installer on which inverters comply is important so as to ensure we only supply approved / compliant equipment. Our current source for is the CEC approved inverter list and we would hope this information is added to the data provided as part of this list as it is not just a compliance issues but additional information specific to our region.

We have concerns over pre-sold systems into the HBS, what impact will this have to these sales and the new compliance requirements. As such we are in agreement that battery storage should not be exempt but should be specifically tested depending on their connection configuration AC/DC/Hybrid.

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Consultation Paper 4: Proposed smart meter minimum technical standards in South Australia

We at the Sharpe Group – Energy Hub are concerned about this proposed change to the regulatory standard. Our concerns are both technical and regulatory in nature.

The meter is a network asset owned by the DNSP/MSP, this leads to demarcation concerns in regards to how will the aggregator/agent interface or control the contactors. In regards to faults and replacements of smart meters where connectivity / comms issues are present, whose responsibility is it and what rights are afforded to the aggregator / agent for equipment which may be 100% operational for the primary job of metering in and out flows.

Contactors only work for certain loads, examples of issues with this approach:

- issues with HVAC when loss of power the system will not restart as digital switches and consumer experience will not be seamless or invisible,
- heat pumps do not work well under this scenario as once power is re-established majority of heat pumps will go into boost mode costing the customer money and also bringing additional surge load to the grid
- pool pumps have timer units and lack of power will require recalibration on analogue timers

With this approach re-wiring and additional expense will be required behind the meter. Is the proposal that the resident is responsible for this additional expense? As part of a sales process, impacts to payback and complex descriptions of requirements will limit uptake of optional solutions or the underlying technology itself.

There are multiple smart meter providers with proprietary interfaces, each of these requiring a bespoke solution whether it is local controlled via RS485 or similar protocol, or cloud-based API solution. Aggregators or agents will be required to develop each of these solutions. If local communications and control is required then additional hardware and costs will be added to the cost of a system for the resident. How will the costs be afforded when there are clear mechanisms, regulatory guidelines/processes and costings in place for the replacement of a meter and under what circumstances but an agent may need to recoup additional costs for the local hardware or solution. The business models are unclear for the agent / aggregator in this circumstance.

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Consultation Paper 5: Proposed Tariffs to Incentivise Energy Use in Low Demand Periods in South Australia

We are the Sharpe Group – Energy Hub agree with the premise that any tariff structure changes can lead to consumer behavioural change in the short to medium term where they are engaged and understand the tariff structure or have strong coaching. Initially this will normally require a highly engaged electrician / installer whom will work through the solutions with the consumer where there is some movement of loads required. This time and effort can only be afforded where there is financial reward and incentive for the time taken with each individual resident.

That said consideration of tariff structures is important as most home owners are unaware of the complexities of energy delivery and their energy usage. TOU based tariff structures are easier to understand as a concept, set times is an easy concept to explain and does not require additional monitoring equipment. Demand based tariff structures are difficult for residential householders to understand as they don't have monitoring or their loads, they are unsure of the impact of synchronous loads and the effect on their bills. TOU tariff structures afford a set and forget approach in most instances but affords the opportunity to introduce some level of automation. Battery storage optimisation around TOU tariff periods is also an easier concept for delivery and can work quite well for both the network and home owner.

Either tariff structure will have a positive impact on the payback period calculations for battery storage, TOU based tariff structures will assist in the arbitrage opportunity and are easier to model and therefore easier for a consumer to understand as part of the sales process. Algorithmic work around arbitrage scenarios for battery storage will adapt to the tariff structure to prioritise battery charging from either the solar generation or grid which will be beneficial to the overall issue presented at the grid level. The implementation of battery storage alone can have a positive influence on network demand in the TOU structure without the requirement for additional demand control automation behind the meter.

We are the Sharpe Group – Energy Hub believe that a TOU based offering should be mandatory from all retailers.

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