

SwitchDin Pty Ltd
Level 1, Building B, 91 Parry Street,
Newcastle NSW 2302
T +61 421131550
E andrew.mears@switchdin.com

10 November 2021

Energy Policy WA
Level1, 66 St Georges Terrace
Perth WA 6000
Submission by email to:
submissions@energy.wa.gov.au

Dear Energy Policy WA

RE: Generation Management Discussion Paper

SwitchDin is an Australian energy software company that bridges the gap between energy companies, equipment manufacturers and energy end users to better integrate and manage energy resources on the grid. SwitchDin's technology enables our clients to build and operate vendor-neutral virtual power plants, microgrids, energy management solutions and integration support for distributed energy resources. Founded in Newcastle NSW in 2014, SwitchDin now operates in all states of Australia with a presence in Europe and early activities in the Americas and Asia.

SwitchDin has the capabilities required to successfully implement the proposed model for DPV management in the SWIS and has a solid track record in delivery of similar solutions in Australia in partnership with DNSPs, the solar industry and its customers including in Western Australia. Our solution gives the operator(s) real-time visibility and control of diverse fleets of DER devices, including solar and battery inverters, heat pumps and air conditioners, and EV chargers, so as to provide advanced network support, energy market orchestration, and behind-the-meter energy management through the enablement of flexibility at the device and grid interaction point.

Outlined below is our feedback on the Low Load Responses - Distributed Photovoltaic Generation Management Discussion Paper. This feedback is based on pertinent contemporary experience within the space of DER management, including our experience in implementing South Australia's Smarter Homes Regulation.

General Feedback

SwitchDin recognises the need for appropriate remote DPV management of export in order to ensure the security and quality of the power supply in Western Australia. Remote DPV management can also deliver a range of additional system and customer value by ensuring DER flexibility. It is therefore important that any DPV management method imposed on customers to respond to low load issues should not limit access to these other value streams.

While the simple disconnection of DPV can facilitate an increase in aggregate demand, SwitchDin can provide solutions - already deployed in Australian distribution networks - which allow for smooth

control of DPV as well as dispatch of other types of DER such as home batteries and discretionary loads (hot water, air conditioning, pool pumps etc), all of which can be leveraged to increase aggregate demand. These solutions have also been deployed on secure network operator systems and have been proven to be both firm and cost efficient whilst enabling additional value for customers, retailers and networks.

SwitchDin can enable this solution for new DPV installations and also has a cost effective retrofit option for existing DPV systems. This flexibility function can further increase the value of the customer's investment and reduce the need to completely disconnect customers instead enabling smooth control of export and demand to avoid critical low load issues all together.

Specific Feedback

a) Are there any practical considerations Energy Policy WA should have regard for in implementing the proposed DPV Management model?

The model proposes the ability to remotely disconnect and reconnect DPV systems as the minimum functionality, and only recommends that systems are configured to enable turn down/reduction of power to zero export. Consideration should be given to whether this will provide the desired behaviour and a sufficiently future proof solution without excluding customers and operators from other benefits:

- Complete disconnection of multiple customers may unnecessarily burden customers with lost value from their assets, and runs the risk of introducing transient behaviour which can impact grid stability and power quality. This could add further uncertainty and complexity to the system planning and operation, resulting in added costs and poor customer experience. SwitchDin's StormCloud platform offers a dynamic control alternative which can provide flexible DPV management (including flexible net export and ramping) in addition to coordination of other customer and operator assets such as batteries and loads to provide a smooth transition to preserve energy security while maximising the electricity system hosting potential for DPV and customer value. Increasing the minimum functionality to include the ability to flexibly curtail net export would provide a controllable response and enable opportunities for added value for the customer and the system.
- Meeting the minimum functionality of disconnection and reconnection of DPV is likely to result in a hardware based solution such as adding relays to smart meters. This approach will be inflexible and lock the customer into a specific use regime which may limit the potential for the customer to participate in any other flexibility services (e.g. such as may be made available through Project Symphony). It is also important to consider wiring configurations with this solution and their implications as to connect DPV systems directly to meters via a second contact can create issues with wiring for secondary meters required for DPV and battery systems. Software solutions, such as SwitchDin's, offer a much more flexible solution which can deliver equivalent minimum functionality yet can be updated remotely and deployed to minimise cost, maximise value and future proof the solution. As an example, the SwitchDin software can be deployed within third party smart meters, as part of the solar or battery system or it can run in the cloud. This provides more choice for customers and installers resulting in a cost effective and scalable solution well suited to rapid deployment. Increasing the minimum functionality to include the ability to flexibly curtail net export (or increase net demand) would also result in a future proof higher value solution.

The DPV Management requirements should clarify how the 5kW limit will be applied. For example, does it apply to inverter device ratings (therefore including oversized PV systems with 5kW inverters) or does it apply to total PV system size; and how does the limit apply when the customer has other inverter energy systems such as AC coupled batteries.

It is unclear why separate arrangements are proposed for customers without an off-take agreement with their retailer:

“All customers with new and upgraded DPV systems without an off-take agreement with their retailer will be export limited to 1.5kW or 5% of rated capacity.”

Export limits would usually be imposed at the time of grid connection/system installation and be a condition of connection to the grid. If export limits are to be imposed for customers without an off-take agreement with their retailer then understanding the duration of the offtake agreement becomes important, including whether the offtake agreement is part of the retail contract. Particular issues that should be addressed include clearly articulating what happens when an offtake agreement expires, as well as who is responsible for ensuring compliance with such an export limit.

b) What mechanisms should be used to provide information to consumers about DPV Management events and what form should this information take?

Information about DPC management events should be provided to consumers on a personalised and contemporaneous basis to ensure customers are informed and engaged using accessible personal communications channels such as web and mobile apps, sms and messaging apps, and email. This not only engages and informs the customer, it raises awareness of the broader system issues and provides a platform for behaviour change and informed customer investment decision making. Partnering with technology providers such as SwitchDin can enable this experience for customers giving them access to information and opportunities for engagement through a customer facing web and mobile applications.

c) What sort of customer support information should be made available by Synergy to assist customers to maintain compliance with remote communication – for example, if a Wi-Fi connection needs to be re-established?

Similarly to what has been delivered to SAPN in South Australia, technology providers and customers should be required to notify Synergy if any link in the chain of communication to a DPV device has been broken to allow time for rectification and if necessary enable Synergy to provide customer support to smoothly resume service. Whilst customers should ultimately be obligated to ensure effective compliance, there needs to be a partnership approach whereby technology vendors and Synergy support customers with alerts of non-compliance, guidance and support to help rectify. For example, SwitchDin’s customer facing web and mobile application can alert customers and Synergy to these issues and provide real-time tools for Synergy to assist customers to rectify.

It is also important that Synergy provide clear guidance to customers so as to inform them of the pros and cons of different communication options as these choices are typically made in discussion with the DPV installer. Wired ethernet connections between inverter and internet router is often the method recommended by installers in general and this should be the preferred option advised by Synergy.

It is also important that Synergy consider the equity issues regarding internet access especially in grid edge and remote settings. In this case the customer may have unreliable internet access often via the cellular network. In this case, having a DPV system which can autonomously switch to a net zero

export mode during communications outages will preserve compliance and minimise lost value to the customer (as opposed to disconnection of DPV device).

Synergy should also encourage opportunities to utilise Western Power's AMI communications infrastructure to enable a dedicated DPV management communications channel via this existing infrastructure. SwitchDin has demonstrated in the Horizon Power network that using AMI for this purpose is feasible and enables smart and secure DPV management.

d) What assistance or training might be provided for installers to help meet requirements for validation, at the point of installation, and on an ongoing basis?

Installers and DPV system sales consultants are the main communication link to consumers and they need to be trained on the requirements and provided with information to allow customers of DPV systems to understand the impact it may have on them. Information could include an estimate of the amount of time per year that their system may be constrained and what other actions would be taken by Western Power/Synergy to address network stability prior to resorting to a DPV event. It is also important that the benefits of this approach are communicated, such as the opportunity to install larger systems or to install DPV management solutions which open other value streams (e.g. where flexible DPV management options are installed which enable improved energy management, or participation in provision of network and market services such as may be possible via Project Symphony).

It is important that installers and consumers understand that these requirements are in place to enable more DPV to be connected to the grid safely and that DPV management is framed as an enabling change to regulations to unlock more value and choice rather than limiting choice and reducing performance of the DPV. Ensuring that the DPV management approach does not exclude customers from participating in the added value services that DER flexibility can enable will be key to supporting this message.

e) Energy Policy WA will assist customers and installers in providing fact sheets and other communication tools to support the changes. Do you have any suggestions for information that you would like included within these fact sheets?

Energy Policy WA should ensure that consumers and installers are clear that DPV Management is required to enable DPV to continue to be safely integrated to the grid. The fact sheets should include discussion of how some technology choices for compliance may also unlock other future revenue streams through improved energy management and orchestration.

SwitchDin thanks the WA Government for the opportunity to provide feedback to these regulatory changes and we look forward to working with you to deliver suitable solutions for the future benefit of Western Australia.

Best regards,

Andrew Mears
Chief Executive Officer