10th July 2020

Energy and Technical Regulation
Department of Energy and Mining Government of South Australia
Submitted to ETRConsultations@sa.gov.au

Re. Consultation on the Proposed Smart Meters in South Australia

Dear Energy and Technical Regulation Administrators,

Thank you for the opportunity to provide a submission on the Consultation on the Proposed Smart Meter Minimum Technical Standards in South Australia.

Schneider Electric provides **energy and automation digital** solutions for **efficiency and sustainability**. We combine world-leading energy technologies, real-time automation, software and services into integrated solutions for Homes, Buildings, Data Centers, Infrastructure and Industries.

As a global provider of solutions that support customers and grids in their Distributed Energy Resources (DERs) management, we would be happy to meet and discuss how we can support South Australia grid challenges through our advanced grid and Virtual Power Plant (VPP) platforms.

Thank you for considering our response.

Yours sincerely,

Caroline Ottmann
Director Strategy and Market Insights
Schneider Electric Pacific

South Australia is in a unique position with the highest solar and battery uptake across the country. In 2019, approximately 34% of South Australian dwellings now have rooftop photovoltaics (PV) systems installed, which is the equal highest level of penetration in Australia.[1]

Overall, Schneider Electric supports the intent to increase visibility, control and flexibility of the Distributed Energy Resources (DERs).

Schneider Electric is currently working with electric utilities and government across the world and in other Australian states to develop solutions for grid stability and flexibility. Schneider Electric would like to extend their support to South Australia government to address the grid challenges mentioned in the consultation.

1 Smart Metering

With the growth of DERs and now facing net zero demand, South Australia's smart metering roll out is critical to provide networks benefits and enable more advanced energy management.

1.1 Smart Metering Roll Out will provide network benefits and enable more advanced energy management

Overall, Schneider Electric supports Smart Meter technology roll out, including flexible smart meter configuration requirements as being a solution that enables visibility, control and flexibility.

Schneider Electric supports that customer's sites could be configured to have flexible loads (such as hot water systems) and general loads (such as the customer's lights, fridges, etc.) separated from distributed generation (such as solar generation). This would allow de-energisation (and later re-energisation) of the customers solar generation or hot water remotely whilst allowing the customer's other load to remain operating unaffected.

The UK market is a good example of the roll out of smart metering, with SMETS2 roll out currently in progress to provide consumption visibility to the consumers. The data will be then used to manage the utility costs for consumers.

Smart metering are also critical to enable flexibility in the residential energy management. Rolling out smart metering will enable consumers to install smart load management systems for Electric Vehicles chargers as well as enable more advanced energy management through multiple connected devices (appliances, pool pumps, solar, lights, etc.). With the highest solar penetration, South Australia could lead the way in Australia with an end-to-end residential energy management solution encompassing solar, battery and home devices in demand response or flexibility programs.

1.2 Minimum technical standard requirement

Schneider Electric supports the intent of what the government is trying to achieve with additional controls, visibility and flexibility in the network.

The proposed new minimum technical standard requirement may drive additional cost on consumers. A more advanced analysis of cost/benefit may be considered before deciding to have it as a mandatory minimum requirement.

Schneider Electric also recommends that smart gateway must have open standards and flexible smart meter configuration requirements.

[1] AEMO South Australian Electricity Report November 2019

2 Other solutions can address the grid concerns

AEMO advice suggests that the South Australian power system is already facing serious security risks, and deeper record low demand periods are anticipated in spring 2020.

Some complementary solutions could also be considered to address grid concerns. With the growth of decentralised energy generation, the development and use of flexibility and load management capabilities by the electric utilities could address grid constraints, provide flexibility services and ensure grid stability. Schneider Electric is currently working with distribution networks across the world and with other Australian states to address similar challenges and to new flexibility and stability solutions. Schneider Electric is offering its assistance to the South Australian Government to discuss opportunities to address their grid concern in a comprehensive approach.

More broadly Schneider Electric is able to provide support through the engagement of our broad customer base and by leveraging the breadth of our businesses including but not limited to Buildings, HealthCare and Clipsal Solar businesses.

2.1 Other solutions can be deployed to address the grid concerns

Schneider Electric's solutions include the Advanced Distribution Management System (ADMS) in place at SA Power Networks, and can extend through Distributed Energy Resource Management Systems (DERMS) for dispatch and capacity management as well as a world leading Virtual Power Plant (VPP) technology.

Technologies such as DERMS, Energy Profiler Online and Flexibility platforms are proven solutions used by leading utilities to support initiatives and tariff innovation. Specifically flexibility, load management, solar curtailment and batteries management capabilities will become increasingly important as EVs also enter the market.

Lastly ensuring appropriate Grid Connection standards for Technologies are in place with appropriate communication protocols and APIs will be at the crux of grid flexibility and network management.

This can also support market operations, however priority must remain with the Distribution Service Provider foremost as they are unique in having complete visibility of all market data, supply / demand forecasts, customer connections and grid constraints. As such the Distributions System Providers should play a key role in directly managing DERs to ensure network security and maximised renewable and DER penetration.

2.2 Western Power 100 MW Challenge Reference

Western Power are facing similar challenges from high renewable penetration, and in response have launched the 100MW challenge. The 100MW Industry Challenge will see Western Australia partner with businesses in WA, either directly or through our channel partner network, to provide load flexibility to support system low days. [2]

As a result, Schneider Electric has joined forces with Western Power in a pilot project to enable WA businesses to manage their distributed energy resources (DER) through the electricity network with financial compensation while providing support for the network.

Western Power's Pilot as part of the 100MW challenge[3]

"Currently, rooftop solar PV across our network has the potential to contribute to 45 per cent of our system needs at certain times of the day - one of the highest percentages in the world. With households and businesses now not only consuming energy from the network but also supplying energy we've begun to transform the grid to ensure its more sustainable, adaptive and responsive for the future." Western Power CEO Ed Kalajzic

Western Power's pilot aims to demonstrate that by providing flexibility services to pilot participants, commercial and industrial costs will reduce helping address voltage issues while enabling grid flexibility and greater renewable penetration into the energy system.

Delivered through a flexibility services program, the pilot will see WA businesses through energy retailers managing their DER, such as solar PV, batteries and manageable loads like heating and cooling systems, in return for compensation by Western Power.

Schneider Electric will provide Western Power with a technology platform to manage flexibility services, which will include features such as participant portfolio management, user interfaces for program partners and transaction management.

Western Power CEO Ed Kalajzic noted that "Western Power was at the forefront of delivering a more flexible, smarter and lower carbon energy future for West Australians. By connecting renewable energy sources such as solar and wind and using smart technology, we've begun to progressively transform our network into a flexible grid that seamlessly connects batteries and microgrids. These advances will become a relevant benchmark for other distribution networks globally."

Schneider Electric would encourage SA Power Networks to engage with commercial and industrial customers to offer flexibility services and capacity payments for flexibility. This can be achieved through digital platforms and demand management software at a low cost per business end-point with substantial benefit. This solution can also be deployed rapidly and with minimal customer impact, but significant customer benefit. The remote energy management systems will provide increased levels of visibility allowing commercial and industrial program participants to balance their use from the grid and their own energy resources, such and PV and Storage.

[2] https://westernpower.com.au/our-energy-evolution/projects-and-trials/100mw-industry-challenge/
[3] http://www.ecovoice.com.au/schneider-electric-joins-forces-with-western-power-on-innovative-energy-flexibility-approach/

2.3 CLASS project, UK Reference

CLASS project that SE jointly did for ENW in Manchester, UK.

What is CLASS project?

CLASS (Customer Load Active System Services) is a low-cost solution which uses innovative voltage control to manage electricity consumption at peak times.

By installing cutting edge 'voltage controllers' in the substations, ENW could save customers in the North West around £100 million over the next 25 years – and £300 million across Great Britain.

During the 12-month trial, the new voltage controllers were installed at 60 substations serving 485,000 people. Detailed research carried out during the trial showed that customers didn't notice any change in their electricity supply.

Why is it relevant to South Australia?

CLASS main feature is Voltage management via Zone Substations which is highly relevant to SA Power Networks (and other utilities in Austrial) as CLASS can help utility reduce customer costs and manage voltages using Zone Substations assets.

This approach is a low cost solution which can be used to meet many of the challenges that are faced by today's electricity networks. It can be used to balance supply and demand, maintain system stability and ultimately ensure security of supply.

Learn more here: https://www.enwl.co.uk/zero-carbon/innovation/key-projects/class/

2.4 Schneider Electric Capabilities Overview

Schneider Electric can deploy ADMS, DERMS, Energy Profiler Online (EPO), and the energy industry's first truly integrated flexibility management application suite that sifts the highest value from all DERs, including distributed generation, battery storage and demand response resources.

The following capabilities exist:

- Delivering comprehensive, "dispatchgrade" demand-response management.
- Providing the broadest solution to connect and manage any type of DER, from any vendor (DERMS).
- Aggregating myriad DERs into a virtual flexible resource that can be controlled and monetized in energy markets in real time (VPP).

Schneider Electric's Energy Profiler Online (EPO) is a cloud-based SaaS solution designed to provide energy data presentment, utility engagement, and demand response for a utility's commercial and industrial (C&I) customers. Today, this important customer segment is rapidly changing the way they approach energy consumption and costs, and utilities must effectively address their evolving needs. EPO allows utilities to provide meaningful data analytics, historical tracking, ongoing communications, and demand response programs through one easy-to-use digital platform.

Schneider Electric has a diverse customer base in South Australia, across commercial, social, institutional, industrial and residential segments. Schneider Electric has an extended install base of building management solutions, industrial controls and other connected devices across the different sectors. Schneider Electric is willing to leverage its customer relationships and broad capabilities to address South Australia grid challenges.

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