Head Office
Level 3, 469 LaTrobe Street,
Melbourne VIC 3000

16 May 2019

Warwick Anderson
General Manager, Networks, Finance and Reporting
Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601

By email: SAPN2020@aer.gov.au

Dear AER SAPN Review team,

Re: SA Power Networks 2020-25 Regulatory Proposal

GreenSync welcomes the opportunity to provide input to the AER on SA Power Networks 2020-25 Regulatory Pricing Proposal. We note, and appreciate, the AER's assessment to ensure that consumers are provided with the least-cost and highest efficiency outcome.

GreenSync is a Melbourne-based energy-tech company that develops software solutions to connect millions of distributed energy resources and create more dynamic grids. Our technology enables flexible and decentralised electricity grids via new marketplaces for distributed energy.

We are proud to have created deX (the Decentralised Energy Exchange) - a software platform that transforms the capacity of the grid and increases the penetration of renewable energy. Through deX, we're setting the standard to bring stability to the grid and more clean, reliable and affordable energy to everyone. Our deX platform and deX Vision product provide fast-tracked multi-technology DER integration, asset registration and delivers networks:

- Operational visibility
- Forecasting
- Market mediation; and
- Dispatch capabilities.

Importantly, our software also enables consumer permitted asset combination and service contracting by networks, retailers and aggregators via VPPs or other platforms.

The trends over the next five years in DER capabilities and software as a service, which underpin our business and products, present challenges and opportunities to businesses like SA Power Networks (SAPN). We are providing input on this proposal as we have a relevant perspective to provide to the AER's in relation to their review of the SAPN 2020-25 Regulatory Proposal.

Our comments canvass:

GreenSync Pty Ltd
info@greensync.com
https://greensync.com
ABN : 68 141 586 003

- Technology trends
- Relevant collaborations
- Prudent, consumer-oriented implementation

Technology trends

Given the foreseeable technology developments over 2020-25, SAPN is making the case for a portion of its expenditure proposal and revenue request to *"alleviate network issues as a result of the continuing growth in DER"* .[1] We agree with them on the need to enable service and asset operations evolution in response to customer choice.

We note that today, every inverter that is installed in Australia has the ability to detect what's happening around it and to respond according to pre-programmed parameters. This is generally referred to as a static setting and it enables system-responsive behaviour to raise or lower voltage. About a million systems installed post 2015 should have this capability. About another million installed prior to this point in time do not. Neither allow visibility or direct control by other parties.

We do not believe that 'letting consumers trip off', which assumes static inverter settings will continue to be the 'go to' approach, is an acceptable option going forward. In six years', by the end of the 2020-25 regulatory period, it is foreseeable that a substantial portion of DER service, product capability and related integrations, optimisation and market services will be costed, operating and (more) transparent to regulators.

All credible analysis indicates that behind-the-meter DER assets will continue to be installed, by choice, by residential and commercial customers in such numbers that by 2050, 45% of the generation mix will come from customers.[2] We also recognise that this could be a low estimate.[3]

We are in the middle of the decade in which systems in the electricity grid - including customer owned DER, system operations, network operations software and everything in between - will move, or be moved, to a primarily digital, IOT-connected world.

What is becoming possible, via IOT and API-based communication flows between different things, is dynamic communication that can allow assets to provide services, flexibly, in response to requests. These requests can be tied to network security requirements for their behaviour, and to service-based (digital) contracts for network support (eg. ancillary services/FCAS, voltage support, active/reactive power etc.), system support (RERT etc), and wholesale services (demand response, supply arbitrage, reliability/firming support etc.)

As a software provider with technology available to support networks, empower customers and drive a service-oriented model, we agree that interoperability will become important during the 2020-25 period. We appreciate that in assessing the SAPN proposal, the AER's challenge is to validate the approach

[1] Australian Energy Regulator. 2019. Issues Paper: SA electricity distribution determination - SA Power Networks 2020 to 2025. P. 13.

[2] ENA & CSIRO (2017). Electricity Network Transformation Roadmap.

[3] Note: this projection doesn't account for incentive programs announced over 2018-19 by governments (Victoria, New South Wales, Federal Labor (if elected))

in line with the need to ensure the most prudent, cost efficient approach that will deliver improved customer outcomes and efficient (lower) costs.

There is a growing recognition of the role of collaborative technology trials in informing future regulatory structures, cost-bases and future service values. While we are still at the front of this wave, these early steps have further emphasised that blunt approaches (export limitations, restrictions and 'assumed' rights to control) are not aligned with customer expectations for fairness, equity and choice.

We commend SAPN for their innovate approach in pursuing trials to help them identify what might be possible for them, and for consumers. They have worked with a number of providers, including GreenSync, in pilot scale and trial capacities to identify options, capabilities and approaches that can be designed to better enable DER operation within their network. Our relevant collaboration with them is outlined in the next section.

Relevant collaborations

GreenSync has worked closely with SAPN, and Simply Energy, on the VPP-X Project, building deX Vision capabilities that provide SAPN with operational visibility, dispatch request and mediation functions over energy storage assets enrolled in Simply Energy's virtual power plant (VPP) which is integrated via our deX software platform. This pilot project will deliver some 8MW of assets by its completion in 2019.

Through the project with GreenSync and Simply Energy, SAPN was the first network in Australia to use, and inform development of, our deX Vision product. Through this collaborative project, we have created baseline capabilities and functionalities which can be added to and built upon over time as scale grows. SAPN has no doubt gained valuable insights into the potential for DER capabilities to support the network from this world-leading project.

SAPN is currently using deX Vision to gain visibility and coordination over a specific technology type (Tesla Powerwall 2s). The capabilities and functions set the baseline to enable SAPN to co-ordinate the operation of these DER and help consumers get more value from their energy storage assets by providing Simply Energy with potential to contract aggregated DER services with other market participants - including SAPN.

Through 2019, additional technologies will be added into the deX ecosystem for this project and others, lowering the need for time and resources otherwise required for establishing integrations.

Prudent, consumer-oriented implementation

Consumer orientation is a key principle for the Regulator and Networks. Regulators and networks want to ensure that every dollar spent is not done before it is needed.

We understand that SAPN intend to use its 'low voltage networks spend' to enable or use:

- Inverter settings (under AS4777) to respond to voltage
- Inverter settings for active/reactive power (Volt/Var)
- Flexible export management
- New tariffs

- Procurement of network services from VPPs etc.
- Active sub-station control

GreenSync agrees that a suite of approaches from networks will be required and that enabling visibility of DER connected to the network is a vital early step and that this unlocks many other tools and options for networks and customers. One such tool is the flexible export management noted above. We understand SAPN is establishing a connection approach which will set operational visibility as a precondition and allow SAPN to request flexible responses from these assets.

As a technology provider, we are confident that the network can deliver for consumers and the system by accessing cost-efficient software services over the proposal period that would support them to establish and implement these tools and build pathways for DER service contracts (via VPPs etc). Of course, there are also network side software system integrations, business processes and system improvements required.

In summary we consider that

- Customer access should be considered from an equity perspective
- There is a justifiable need for change to respond to broad technology trends as well as emerging and evolving DER technology capabilities
- The tools required to respond to those changes are fundamentally unlocked by DER visibility and interoperability available in advanced technology
- The implications from a consumer perspective on access to market opportunities should be considered as well as network system management

For queries in relation to these comments, please contact Bridget Ryan on 0402 115 589 or bridget.ryan@greensync.com.

Your sincerely,

Bridget Ryan
Policy and Government Lead