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Pioneering rooftop solar trial to prove benefits for customers, retailers and networks from energy transition

Australia's renewable energy future will see new opportunities for retailers and electricity networks to collaborate to help customers to maximise the value of their own energy resources.

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has announced it is providing \$1.02 million in funding to SA Power Networks, alongside partner retailers AGL and Simply Energy, to develop and trial the capability for retailer solar management offers to work in concert with networks' flexible connection offers (or 'dynamic operating envelopes') to enable a seamless experience for customers with Consumer Energy Resources.

While rooftop solar is the largest generator in South Australia, most systems are not responsive to market signals. Retailers Simply Energy and AGL aim to change that with innovative offers that reward customers for enabling their solar to be responsive to wholesale energy market pricing.

The focus of the \$2.1 million project will initially be on helping inform design of the integration between these new customer offers and SA Power Networks' Flexible Export connections for rooftop solar, which will be progressively rolled out as a standard service offering from July 2023. Combining flexible export connections with innovative retail market offers aims to maximise the opportunity for customers to participate in the market while ensuring power flows don't exceed the technical limits of the network. In the future, there is the potential to extend this approach to support other "behind-the-meter" equipment (Consumer Energy Resources or CER), such as batteries and even electric vehicles.

If successful, the solutions developed could be adopted in other states in the National Electricity Market and potentially unlock wholesale market and network benefits.

Demand and generation flexibility offers opportunities to reduce energy costs, moderate peak and minimum demand and move energy loads to when there are high amounts of renewable energy. It can be implemented in real time in response to market signals, generation shortfalls or network constraints.

ARENA CEO Darren Miller said the smart management of rooftop solar is a potential long-term solution to ever increasing amounts of renewable energy entering the market.

"SA Power Networks' project represents a small, but focused trial that will help inform the design of future mechanisms for the orchestration of rooftop solar PV as well as other customer owned energy assets."

"By having retail customers from AGL Energy and Simply Energy involved, this will highlight how Australia's growing solar PV capacity can be managed in a way that delivers state-wide benefits," Mr Miller said.

SA Power Networks EGM Strategy & Transformation Mark Vincent said: "SA Power Networks has been working across the energy sector with inverter manufacturers, solar companies, energy retailers and regulators to develop a smart way (Flexible Exports) to allow even more solar on our network so that everyone can benefit from the availability of cheaper daytime energy. In the longer run, we are enthusiastic about how customers can benefit from actively participating in the energy market and assist in managing the peaks and troughs of demand. This trial is a crucial step in understanding how we can take that next step."

AGL Chief Customer Officer Jo Egan said AGL's involvement in this first-of-its-kind solar project would give AGL the opportunity to explore how customers could be rewarded for enabling access to their solar system, allowing it to respond to market conditions with the highest shares of rooftop solar generation.

"AGL is excited to be designing future mechanisms for the orchestration of rooftop solar PV as well as other behind the meter assets. AGL believes flexible export limits for distributed energy resources will be one way

to manage constraints and optimise available capacity. This will ultimately give customers new incentives and access to solutions that continue to decarbonise how we live.”

Simply Energy Solutions General Manager Ryan Wavish said: “Simply Energy is excited to explore this opportunity to enable home solar systems to become responsive to market signals. This innovation will enable solar customers to get even more value from their systems, while supporting the increased uptake of renewables and network efficiencies that benefit all customers.

This project joins our extensive portfolio of work embracing customer participation in the energy transition through home solar and battery systems, electric vehicles, controllable hot water systems and community batteries.”

About the trial

The SA Power Networks-managed trial will focus on two new technical options for the integration of retailer signals with distribution network service provider’s (DNSP’s) dynamic operating envelopes in order to manage DER under the Common Smart Inverter Profile – Australia (CSIP-AUS) communications profiles.

The two retail partners in the project, AGL Energy and Simply Energy, will each demonstrate and test the commercial application of two respective technical models. By developing a retail product and enrolling 50 customers each, they will provide incentives for customers for reducing their solar exports in response to market price signals.

The project will test the market design and technical solutions, as well as address cyber security concerns, while also learning about the customer experience.

Customer voluntary acceptance of solar savings products will also be examined and reported on, as well as the ability for the two technical models to work concurrently allowing for alternate operational approaches by retailers.

The project details are currently under development and field trials are expected to commence in late 2023. The project is expected to be completed in November 2024.