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## Test driving electric vehicle home charging technologies

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has today announced \$2.9 million for AGL Energy Services (AGL) to undertake a large scale electric vehicle (EV) charging trial across New South Wales, Queensland, Victoria and South Australia.

As part of the \$8.25 million trial, AGL will recruit 300 EV owners to demonstrate a range of smart and managed charging solutions including:

- 200 smart chargers will be installed at EV owners' homes where they will be remotely monitored and controlled to help move charging to off-peak times when cheap renewable energy is available or to respond to constraints on the grid.
- A software based smart charging trial involving 50 EVs to test the ability of EV charging to be controlled by communicating directly with the car without the need for separate smart charging hardware.
- 50 EVs will participate in a vehicle to grid (V2G) trial to assess the ability and commerciality of EVs to become a source of energy storage and provide energy back to the grid when required.

AGL is contributing \$5.3 million towards the trial which also involves project partners JET Charge, Chargefox and FlexCharging and a cohort of distribution networks. ARENA's funding will support charging hardware costs, installation costs and software development.

The project will be the first time V2G EVs will be deployed in a residential context in Australia. It will also be the first time smart charging has been deployed in Australia via software, potentially removing the need for additional smart charging hardware in the future.

The mix of alternative charging types has been selected by AGL on the basis of current technology readiness, with smart chargers being the most mature technology and the main focus, while V2G and software based smart charging are less mature but offer considerable potential for the future.

AGL aims to accelerate the commercialisation of the orchestration of EV charging by examining the key sources of uncertainty and investment risk such as the commercial model, technology approaches, customer behaviour and market structure.

The trial also will help to inform electricity retailers, customers and DNSPs of the potential for EV charge management and how those benefits can be recognised and valued. The project will provide detailed insights into customer behaviour to inform how best to maximise customer participation and value for the customer.

ARENA has previously supported the rollout of two fast charging EV networks across Australia by Chargefox and Evie Networks. This year, ARENA has also supported Origin and ActewAGL to trial different technologies and approaches to accelerate the commercialisation of managed EV charging and V2G services respectively.

Together, these ARENA-funded EV projects explore various technology solutions, service providers, end users and geographies, helping to demonstrate and inform the market on how EV charging can be managed at higher levels of uptake, with the lowest cost and greatest benefit to consumers.

ARENA CEO Darren Miller said these trials would allow EVs to benefit the wider electricity system, and would support the integration of EVs into the system as uptake increased.

"As more Australians switch to EVs, it will be important to manage and orchestrate EV charging to avoid potentially costly impacts on peak demand, associated network charges and grid security issues. EVs also provide economic opportunities for consumers through the potential of reduced electricity costs through higher network utilisation and the potential to generate revenues that would reduce the cost of car ownership.

"We hope trials like this will provide valuable insights into how EVs can provide value for money for consumers, but also help to transition our electricity network going forward."

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As outlined in the Australian Government's first Low Emissions Technology Statement, ARENA will also continue to support consumers choosing new vehicle technologies through the administration of the Future Fuels Fund. The Future Fuels Fund will help businesses and regional communities take advantage of opportunities offered by hydrogen, electric, and bio-fuelled vehicles.

AGL General Manager Decentralised Energy Resources Dominique Van Den Berg said AGL was excited to partner with ARENA to understand when and how customers charged their EVs, which will become a larger part of the energy market as their take-up increased.

Ms Van Den Berg said the trial would be the first time in Australia that people could use their EVs to power their houses and export excess energy to the grid.

"This trial will demonstrate how we create value using customers' distributed energy assets like batteries and share the value with them," she said.

"We'll be talking to customers during the trial to understand how they feel about smart charging so we can improve their experience.

"Although the trial is limited to 300 customers, it will help us to shape future energy offers to EV owners."

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