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Batteries on Wheels: Unlocking value for customers through smarter charging

The Australian Renewable Energy Agency (ARENA) has today announced \$3.2 million in funding to Amber Electric (Amber) to trial battery electric vehicle (BEV) smart charging and provision of vehicle-to-grid (V2G) services with residential customers.

Through this Australian-first residential trial, Amber is developing a software solution to facilitate BEV smart charging and V2G bi-directional charging for its residential customers, including the installation of 100 smart chargers and 50 V2G chargers into participants' homes.

ARENA CEO Darren Miller said this was an exciting project that would provide insight into pathways for commercialisation of smart charging and V2G as well as uncover unique insights into consumer habits.

"With accelerating uptake of electric vehicles in Australia, this project will develop and demonstrate new ways for consumers to unlock value from their consumer energy resources and facilitate greater use of renewable energy".

At least 1,000 customers will participate in this trial across the ACT, NSW, QLD, SA and VIC over the next two years with the V2G scope expected to kick-off in mid-2025. The solution will be built into Amber's existing customer application to enhance its service offering, unlocking more value for BEV owners while accelerating the renewable energy transition.

ARENA's funding will help to support the development and implementation of the software solution and the rollout of the chargers. This project will allow trial participants to turn their vehicles into "batteries on wheels" further supporting grid stability and the integration of renewable energy.

Amber co-CEO Dan Adams said V2G and smart charging technology has the potential to be one of the most groundbreaking technologies to enter the Australian energy sector.

"This technology represents a transformative leap for energy storage in Australia, and the energy system as a whole. By integrating electric vehicles with the grid and the wholesale energy market, we can reduce costs for consumers whilst accelerating the transition to renewable energy.

"Our customers will be able to directly compete with big coal and gas generators just by smart charging and discharging their EV battery. This innovation not only strengthens our energy infrastructure but also aligns with a commitment to a sustainable future."

Amber's project will demonstrate the effectiveness of their wholesale electricity cost pass-through model when paired with optimised use of BEV chargers, rooftop solar and home batteries to increase customer savings and enable greater utilisation of renewable energy at times when it is generated.

Insights gained through the project may inform policy across Australia and encourage other industry participants to follow in Amber's efforts.

The ARENA-funded [V2X.au Summary Report](#) (delivered by enX) highlights that the proper implementation of V2G infrastructure, when complemented with supportive network tariffs, can have significant benefits for consumers.

The report also considers that bidirectional EV charging is potentially one of the largest and lowest cost sources of energy storage.

Amber's \$7.7 million project will provide insight into the scalability of its initiative, potentially further supporting grid stability and reaching more consumers.

As part of the project, enX will lead an independent verification of Amber's modelling to confirm potential

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For more information

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customer savings and assess the ability for smart charging and V2G to support grid stability and the renewable transition.

The funding has been awarded under the [Driving the Nation Fund](#) which invests in cheaper and cleaner transport with a focus on supporting the uptake of battery electric vehicles through innovation in public charging and innovation in management of charging.

Since 2020, ARENA has announced grant funding of \$97.4 million towards the decarbonisation of transport including public charging infrastructure, fleet decarbonisation and innovation in charging.

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