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Innovative virtual power plant on trial

A "virtual power plant" will be created as part of an innovative solar and battery technology trial designed to support Wellingtonians in the event of a natural disaster.

Leading energy generator and retailer Contact Energy has joined forces with Wellington Electricity and Wellington City Council to install solar and battery systems in a number of homes so residents can continue to use electricity even if the electricity grid suffers an outage.

The technology will allow the residents to harness the power of the network of solar generation and batteries and be rewarded for the energy they produce when the electricity grid is under pressure at peak times.

Customers can also view and manage their energy use in real time via an app on their mobile phones. In the future, the companies involved in the partnership hope the technology could be used to give customers the choice of sharing stored energy between homes.

Five homes in Wellington's Wadestown area are taking part in the two-year trial and an additional 25 homes in suburbs on the southern side of the city have recently joined a second phase.

The locations for the trial have been chosen where the electricity network will benefit from the additional energy and resilience which local solar and battery systems provide.

Vena Crawley, Contact's Chief Customer Officer, said: "For Contact, it's about using innovative and highly flexible energy technology solutions to enhance the resilience of our communities in the event of a natural disaster such as an earthquake.

"This smart network of customer-located batteries will maximise the benefits this technology can deliver for customers.

"This technology trial is being built and tested using the credentials of three partners coming together to provide a collaborative solution.

"Contact is evolving fast, and thinking beyond energy to deliver on customers' expectations now and in the future. This trial reflects our commitment to testing new smart and real-time energy solutions, enabled by technology, to help our customers and build resilient communities."

For Craig Burt and his family, their participation in the trial in Wadestown has been an eye-opening experience on the role technology will play in the home of the future.



"We had always intended to install Solar PV panels to the house. At construction stage, we pre-wired for the installation of these panels and being presented with the chance to participate in the trial was too good an opportunity to pass up.

"The system seamlessly recharges the battery, supplies energy to the house and sends any excess energy back to the grid. You can keep track of energy usage via the app developed by Contact Energy, it allows a 10 minute analysis of electricity used, solar energy generated, energy sent to and used by the battery and the batteries' current state.

"It's great to know that when there is a sunny day, the house has been running off the panels and we have power stored in the battery for use overnight. It often provides enough energy to still have energy in the battery in the morning.

"The solar battery system provides over one-third of our electricity usage during summer and just under a quarter of our usage during winter months. This obviously provides great long-term financial benefits."

Greg Skelton, Wellington Electricity Chief Executive Officer, added: "Wellington Electricity is a keen contributor to the project which will help us understand how to better integrate new technology into the network.

"New technology, such as solar and batteries, provides a glimpse into a future where our network will be required to manage customer loads, generation and storage as a platform that continues to provide safe and reliable service.

It is an opportunity to evaluate new technology solutions to support peak demand rather than the traditional investment of providing bigger infrastructure. Improving resilience through smart systems is in keeping with Wellington's innovative culture and liveable city pedigree."

Wellington Mayor, Justin Lester, is a big supporter of the trial and the use of these new technologies.

"After an event like an earthquake, energy independent homes can become community assets, helping ensure our city continues to function. This project allows us to test what works best for Wellington before we're faced with such an event.

"Simple things like being able to charge your phone so you can keep in touch with friends and family are absolute priorities after a natural disaster and that's where the batteries come in.

"Homeowners in the trial have agreed to share their stored power with neighbours in the event of a disaster or prolonged outage. It's so important to get to know your community before disaster strikes, the trial will be a catalyst for valuable neighbourhood connections.

"The fact that these innovative technologies also draw on renewable energy resources just adds to the benefits of the project."



There's also a further Wellington connection to the project, with the app customers' use leveraging a real-time smart meter data product developed by Wellington technology company Embrium.

Customers taking part in the trial will also receive an LPG bottle as an additional source of fuel for cooking, lighting and hot water heating in a power outage, are supplied with a 200lt water storage tank and offered a home energy audit to identify opportunities that will help them further reduce their energy bills. All these services are made available from Contact and its partners to help trial customers get the most out their energy.

Further information on the initiative is available www.skysolar.co.nz/contacttrial.

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