Bawley Point and Kioloa community microgrid update

December 2024

The Bawley Point and Kioloa community microgrid project aims to improve electricity reliability and resilience and help meet increased electricity demand during holidays

It brings together solar and batteries and new technology that helps operate its separate parts and conduct them like an orchestra. Here's some information Endeavour Energy wants to share about how it works.

Q: How does the microgrid work?

A: Microgrids exist all around the world. They are not new technology, but as locally generated renewable power has increased, these mini grids are becoming a better way to provide electricity to remote communities.
The Bawley Point and Kioloa community microgrid is a small, local network of electricity users connected by a local power source of solar and batteries and a large battery. The microgrid is connected to Endeavour Energy's network.

Q: Who developed the microgrid?

A: Endeavour Energy worked with the community to co- design the microgrid to help improve electricity reliability and resilience to extreme weather events like bushfires and to help meet increased local demand during holidays. Without it, the community would have needed a large substation that would not provide the same benefits a microgrid does.

Q: Is the microgrid working?

A: All individual components of the microgrid are working. However, there are works that still need to be completed to get the microgrid fully operational. At this stage, the grid- connected battery is already managing voltage levels in the local network to make the network more stable and allow more renewables (rooftop solar and batteries) to be connected. The communication between the grid battery and over 100 home batteries is also working well.

Q: What needs to be done to ensure it's fully operational?

A: The final step is to commission the Distributed Energy Resource Management System (DERMS), which is the control software that will monitor and orchestrate the individual components and automate the microgrid to make sure it all works together, when needed. This final step is planned for February after the holiday season. We've decided to wait until then because this process requires us to turn off the power for about six hours to complete the work safely.

Q: What residents should expect during the final commissioning?

A: Our team will need to turn off the power to around 1500 homes for about six hours. This is to safely test scenarios like power outages and different voltage levels. We will also be checking how the microgrid performs in 'island mode.' This special mode allows the microgrid to operate independently from the main electricity grid, ensuring a reliable power supply to the community during outages.

Q: Will the microgrid support the community in all outages? If not, why not?

A: While the community microgrid will provide a more reliable service to customers, it is important to remember that outages can and will still occur particularly during extreme weather events. The microgrid will reduce the frequency and duration of some outages but it will not completely eradicate them.
When unexpected outages occur, the time required to restore electricity depends on the location and nature of the fault.
For instance, if the issue is south of the grid battery our crews need to manually inspect the line to locate where the problem is. It will mean the line south of the grid battery will be de- energised for everyone's safety and it will take longer to restore power. Our goal is to ensure that even if an outage happens, the amount of time you are without power is reduced.

Q: What happened on 10 December when we had an outage?

A:: On Tuesday, 10 December, the Bawley Point power line tripped around 11:30am, interrupting power to around 1300 customers. Unfortunately, the other line into Bawley Point was undergoing planned works at the time, repairing a defective switch, leaving only one power line operational.
As part of our emergency response plan, we sent an SMS to customers with batteries who are part of the microgrid, to let them know we would activate their batteries to help absorb the excess solar and stabilise the grid.
We appreciate the co-operation and support of customers with batteries.

We are here to help:

We apologise for the inconvenience caused as we continue to learn how to best manage integration of these new technologies into the electricity grid. Please feel free to contact us directly on **131003** if you have any questions.