

# Community Microgrid Feasibility Study Update



March 2024

## Improving reliability and quality of supply in fringe of grid communities – are microgrids the answer?

That's just what our Community Microgrid Feasibility Study is investigating – and we are getting closer to discovering the answers.

### Digital meter rollout

Ergon Retail has recently installed digital meters at a number of premises in Clairview and Stanage Bay to support the feasibility study's customer energy use study.

Around 100 digital meters were installed across each community, which gives the project team an understanding of how much electricity the communities use, as well as useful information like seasonal and peak usage patterns.

Digital meters can also help make life easier for our customers, reducing the need for meter readers to arrange access, as well as providing a range of benefits and resources to manage your electricity use. You can find out more about digital meters on Ergon Retail's website here: [Digital meters - Ergon Energy](#)

### What's been happening with the Feasibility Study?

#### Microgrid Technical Analysis

The nature of a feasibility study means that a lot of the work on the project is not visible to the community. It's a bit like staging a play – there's plenty going, but a lot of the action goes on behind the scenes.

Our Microgrid and Isolated Systems Test or MIST facility, has been a hive of activity in recent months. The MIST is a sophisticated, energy research and development hub located in Cairns. It houses state of the art technology, like our Real Time Digital Simulator (RTDS) – see figure 1.

This piece of kit can run highly complex simulations and tests on solar and batteries, microgrids, standalone power systems, even hydrogen energy storage and carbon reduction. So, it's the perfect location to simulate and test how a microgrid might operate on our 3-phase and single wire earth return (SWER) networks at Clairview and Stanage Bay.



Fig 1 – The Fringe of Grid team discussing the simulations they will perform with the RTDS.

Although out of sight to most, the fringe of grid team has been hard at it, conducting a range of technical assessments that focus on how a microgrid would interact with the electricity networks at Clairview and Stanage Bay. They're investigating the elements of intelligent microgrid operations, like control and communications, safety and protection, and ways to ensure stability in a network connected microgrid.

#### MIST Laboratory Prototype and Testing

The project reached a major milestone recently, with the delivery of our custom-made battery and inverter system to the MIST. This gear is the heart of the microgrid that would kick in when the power from the grid is out.

Just like a giant high-tech Ikea project, the team at the MIST have started the complex assembly of the grid-forming inverter and battery racks – see figures 2-4. Once assembled, they will be hooked up to the MIST’s grid-connected network, solar PV, protection systems and the RTDS simulator.



Fig 2 – Jake and Dave from the Fringe of Grid team working on the inverter for the Microgrid Feasibility Study.



Fig 3 – Testing a battery unit before installing it in the battery rack.



Fig 4 – Dave and Jake are installing the first of the 23 battery units into the battery rack.

Once the inverter and batteries are assembled and they are connected to the MIST’s equipment, the team can really get their teeth into the microgrid research and development, creating microgrid prototypes in the MIST lab, which will be used to simulate how the systems would operate if they were in the ‘real world’.

As part of this phase, the team will run an extensive range of tests to see how the microgrids would operate and respond in a range of ‘real life’ scenarios.

They will be testing elements of the system like the communications and protection equipment and making sure that the microgrid would provide a stable and reliable power supply to the communities.

The findings from this phase of the project will provide insights into how we might deploy and integrate the technology into our 3-phase and SWER networks.

The findings will help to shape business processes, safe operating practices and standards, protection schemes to ensure network and community safety and cyber security, as well as vital elements like how our field crews might interact with the equipment.

We expect this stage to take a couple of months.

### Our feasibility study’s next steps.

While we have already learned a lot through our early analysis, there are plenty more answers to unlock in the MIST as the team progresses the lab testing. We’ll be capturing some of the team’s work in the MIST lab on video, so keep an eye out for our behind the scenes in the MIST video.

When the microgrid testing is completed- around the end of April - the team will then compile all the information we have learned during the Community Microgrid Feasibility Study in a report, sharing our findings and our recommendations.

Not surprisingly, the report will be quite technical in nature, so we’ll share an easy-to-understand version with the community.

### Keeping up to date

To keep up to date on the project, to provide feedback, or to **register for future updates via email or SMS**, please scan this QR code or visit our project web page [Clairview & Stanage Bay microgrid feasibility study - Ergon Energy](#)



You can also contact Kate Austin our Senior Community Engagement Advisor, on 1300 653 055 or email us at: [NetworkProjectEngagement@energyq.com.au](mailto:NetworkProjectEngagement@energyq.com.au)