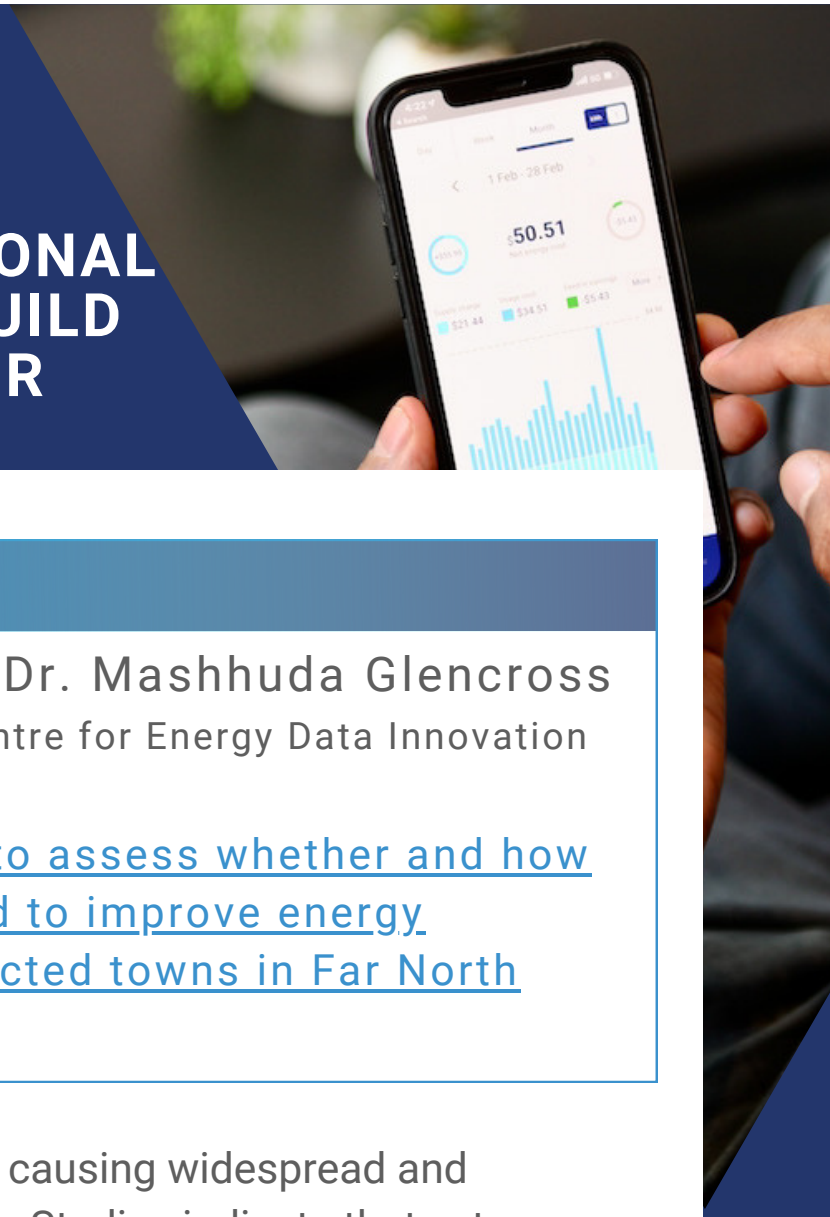
Powersensor Case Study #2

UQ GAINS DATA VISIBILITY FOR REGIONAL TOWN MICROGRID BUILD USING POWERSENSOR



PROJECT BRIEF

Dr. Stephen Snow and Dr. Mashhuda Glencross
University of Queensland Centre for Energy Data Innovation

Using Powersensor data to assess whether and how a microgrid could be used to improve energy resilience of cyclone affected towns in Far North Queensland.

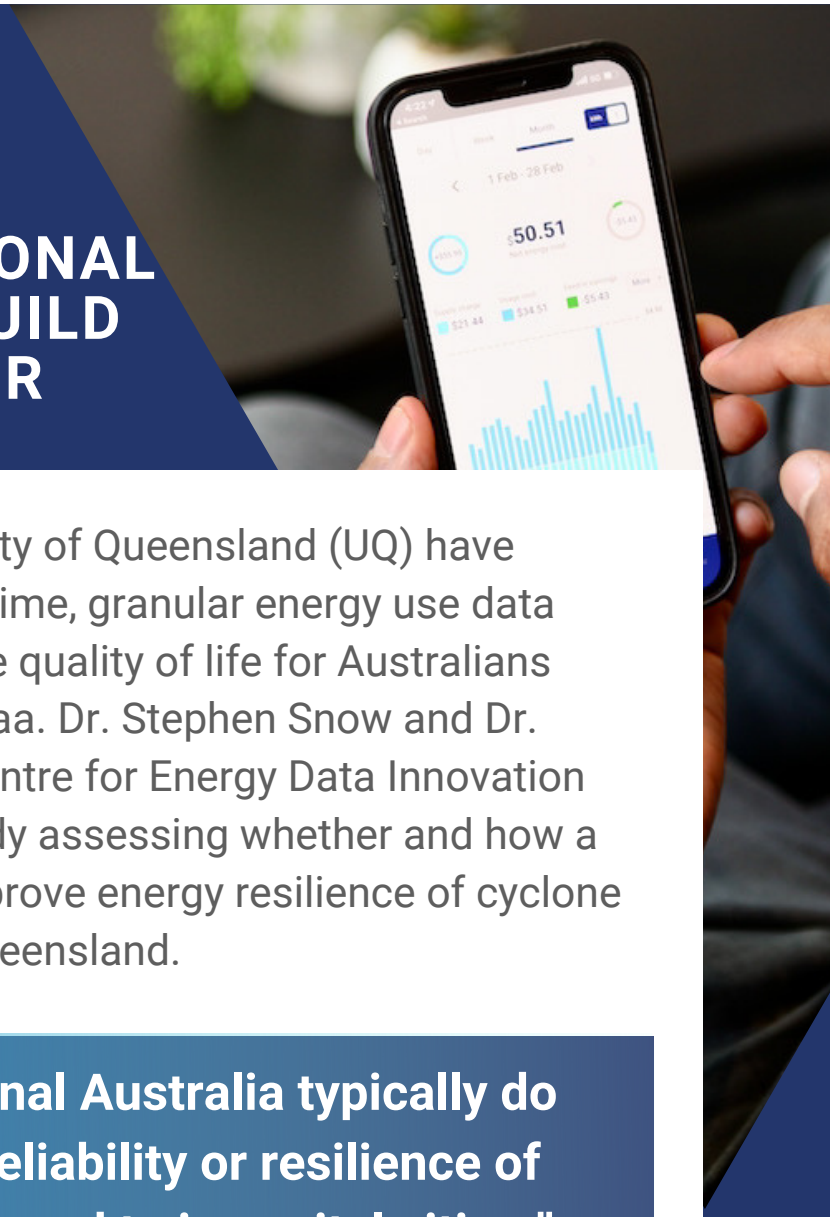
Rising global temperatures are causing widespread and unpredictable weather patterns. Studies indicate that extreme weather events such as heat waves, storms and cyclones are likely to become more frequent or more intense with continued climate change.

Energy grids must respond to these challenges using renewable energy that increase resilience in the face of climate challenges.

A recent UQ study aims to increase the resilience and reliability of power supply to cyclone-vulnerable towns in regional Australia.

Powersensor Case Study #2

UQ GAINS DATA VISIBILITY FOR REGIONAL TOWN MICROGRID BUILD USING POWERSENSOR



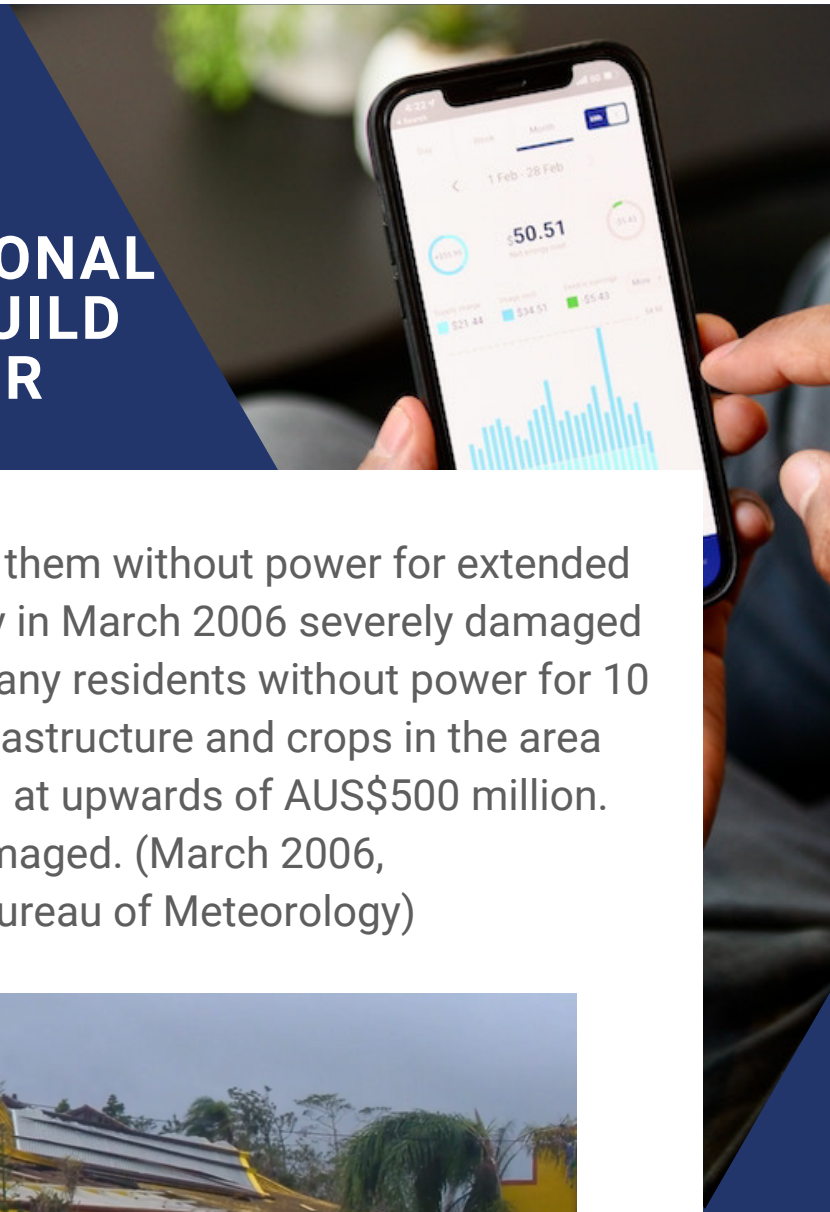
Researchers from The University of Queensland (UQ) have leveraged Powersensor's real-time, granular energy use data capabilities to help improve the quality of life for Australians living in the town of Millaa Millaa. Dr. Stephen Snow and Dr. Mashhuda Glencross of the Centre for Energy Data Innovation have recently completed a study assessing whether and how a microgrid could be used to improve energy resilience of cyclone affected towns in Far North Queensland.

"Small towns in regional Australia typically do not enjoy the same reliability or resilience of power supply we are used to in capital cities,"

"Small towns in regional Australia typically do not enjoy the same reliability or resilience of power supply we are used to in capital cities," said Dr Snow. "The impact of power outages is far greater now than it was previously, given the transition to working from home and our reliance on smartphones and other electronics." The town of Millaa Millaa is located in Far North Queensland 98km south-west of Cairns, and like many rural towns in Queensland is vulnerable to storm damage during the wet season. Storm damage in these parts of Queensland can be

Powersensor Case Study #2

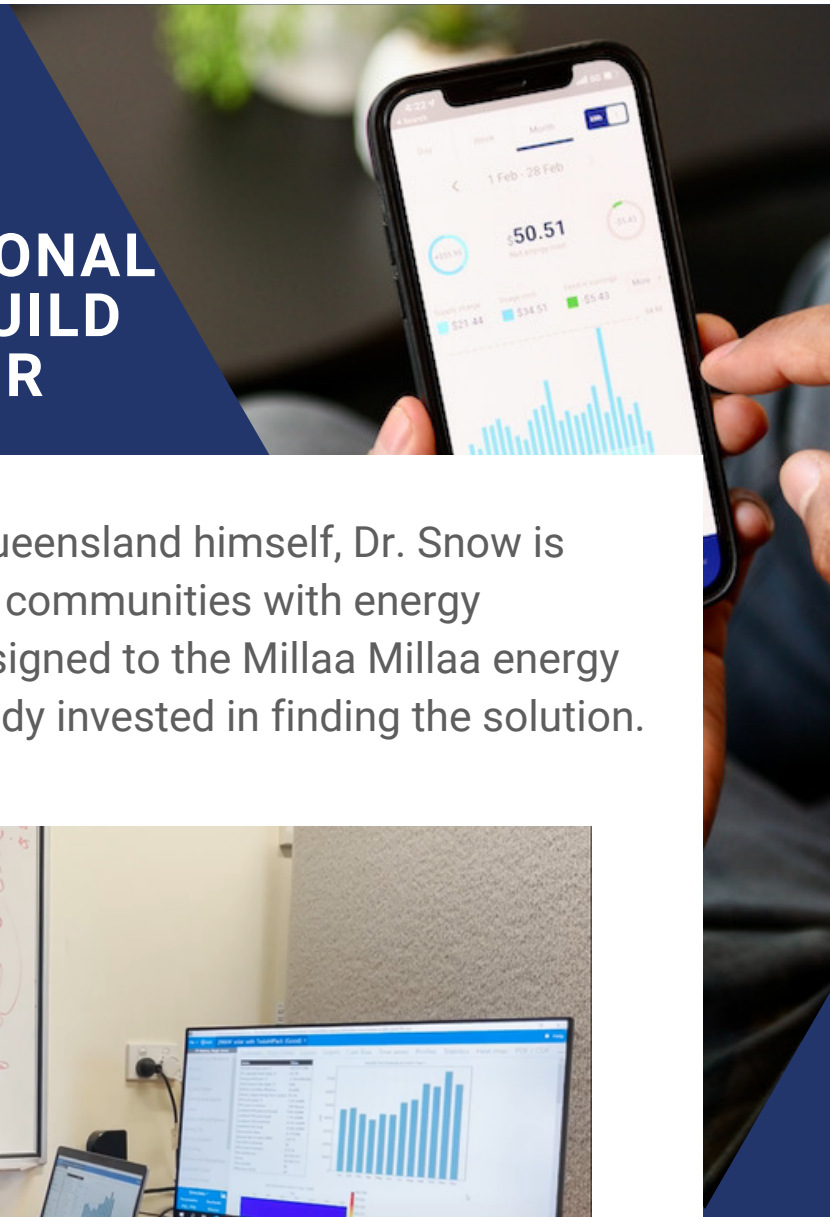
UQ GAINS DATA VISIBILITY FOR REGIONAL TOWN MICROGRID BUILD USING POWERSENSOR



especially devastating, leaving them without power for extended periods. Tropical Cyclone Larry in March 2006 severely damaged the local power grid and left many residents without power for 10 days. Extensive damage to infrastructure and crops in the area around Innisfail was estimated at upwards of AUS$500 million. About 10,000 houses were damaged. (March 2006, Commonwealth of Australia, Bureau of Meteorology)

Powersensor Case Study #2

UQ GAINS DATA VISIBILITY FOR REGIONAL TOWN MICROGRID BUILD USING POWERSENSOR



Having grown up in regional Queensland himself, Dr. Snow is passionate about helping rural communities with energy resilience. So when he was assigned to the Millaa Millaa energy resilience project, he was already invested in finding the solution.

Snow and Glencross successfully applied for the Energy Consumers Australia Advocacy & Research grant, which allowed them to purchase Powersensor units for their research. “Powersensor represented an affordable and scalable option because of the ability to install without an electrician,” said Snow.

Powersensor Case Study #2

UQ GAINS DATA VISIBILITY FOR REGIONAL TOWN MICROGRID BUILD USING POWERSENSOR

In order to model a microgrid for Millaa Millaa, detailed and granular data was needed to measure the specific energy needs for the area. The energy network was not able to provide the level of detail needed in the data, so energy monitoring through Powersensor was essential to the project.

The level of detail provided by the network of Powersensor solutions allowed the researchers to identify electrical loads and assess the power quality in Millaa Millaa. The real-time data collected from Powersensor also allowed the researchers to document the location, frequency and duration of blackouts and brownouts occurring throughout Millaa Millaa on a regular basis. With the granular detail provided, they were even able to identify outages that lasted less than 10 seconds. With this information, they were able to successfully model appropriate solar and battery solutions to keep the town's essential services running, even in the case of an emergency situation like Tropical Cyclone Larry.

Powersensor Case Study #2

UQ GAINS DATA VISIBILITY FOR REGIONAL TOWN MICROGRID BUILD USING POWERSENSOR

After holding community meetings with the Millaa Millaa Lions Club, Snow and Glencross are looking to submit the feasibility study they have prepared through this research to ARENA for consideration under their Regional Australian Microgrids Pilot Project (RAMPP) funding scheme.

If successful in funding from ARENA, UQ will undertake more detailed electrical studies and further monitoring with Powersensor as part of the final design phase prior to construction. The intended outcome will be a microgrid, providing the Millaa Millaa community with a reliable and renewable energy source for years to come. If successful, this project could be scaled to other communities, altering the landscape of reliable electricity in regional Australia.

DISCOVER POWERSENSOR

Learn more about our patented products and become an accredited Reseller Or Installer at powersensor.com.au, or scan the QR code to visit our product page.