

SEPTEMBER 2021

SUMMARY REPORT

LOCAL POWER FOR THE PEOPLE



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UNLOCKING THE CLEAN ENERGY OF THE FUTURE



"THERE IS SIGNIFICANT VALUE IN UNDERTAKING EARLY TRIALS IN LOCAL BATTERIES...IT IS CLEAR THAT THE TIME TO ACT IS NOW."

- EXECUTIVE SUMMARY

A key challenge in achieving net zero in Noosa by 2026 is the integration of higher levels of rooftop solar on the grid. Local batteries are an emerging solution to such capacity constraints.

Innovative energy solutions, including local batteries, are at the core of positioning Noosa as an innovation hub in the 21st century. A hub for new models of business and a place where the needs of our community - for clean energy and climate action - are met.

EMERGING OPPORTUNITIES

Local batteries will offer many benefits to the people of Noosa, from helping us achieve our **100% renewable energy target** to unlocking more grid capacity for **future electric vehicles**. Our report shows that the benefits of batteries are multi-faceted, contributing to positive economic, environmental and social outcomes.

Energy Queensland expect a doubling of rooftop solar by **2030 to meet their 50% renewable energy target**, requiring at least 8GWh of energy storage to maintain security of supply and up to 16GWh to maximise the energy delivered from increased solar. The time for batteries has come.

The core **economic value streams** for a local battery include:

- Energy shifting (daily storage behaviour) which produces value from demand management, freeing up capacity and local voltage support.
- Responding to sudden changes in the supply or demand balance, unlocking the commercial value of additional energy markets.
- Power quality benefits.
- Back up supply to serve loads in emergencies and improve reliability.

Additionally, the costs of battery systems are falling by 10-15% per year, continuously improving the commerciality of batteries.

OVERCOMING THE CHALLENGES

Local batteries are at the trial stage, with promising results but there are still challenges to be overcome, including:

- High upfront capital and ongoing costs of batteries, with all battery trials so far requiring grants.
- An effective battery system will be accompanied by other technologies, like advanced metering infrastructure.
- Certain battery ownership models may limit which markets the battery can participate in, and thus the overall commerciality of the battery.
- Ensuring value for money as the battery degrades over its lifetime.

Key recommendations from our report to address these challenges are summarised on page 4.



HOW WOULD A LOCAL BATTERY WORK?

CURRENT AND EMERGING MODELS FOR COMMUNITY ENERGY STORAGE IN NOOSA



BATTERY ELECTRICAL ENERGY STORAGE (BESS)



VIRTUAL POWER PLANTS (VPP)



VEHICLE TO GRID (V2G)

In Noosa, there are several Zone Substations that would benefit from the addition of a local battery, including: Noosaville, Tewantin, Cooroy, Black Mountain and Peregian.

A major opportunity identified in our report is exploring whether any of these sub-stations would benefit from a local battery trial, in partnership with Energy Queensland and Energex. Energy Queensland are commencing 5 trials sites in the Ergon area of 8MWh batteries co-located with Zone sub-stations. We have asked that Noosa be the first site in the Energex region as the trial expands.

But the local opportunities of batteries extend beyond our Zone substations, and to the low voltage part of the network where customers connect, where significant reverse flow occurs at pole and pad mounted transformers.

In our report, we discuss in detail the potential of developing technologies like vehicle to grid and virtual power plants, that would directly empower Noosa households to participate in battery trials. We also have the opportunity to design BESS projects that most benefit Noosa, through collaboration with players like the Yarra Energy Foundation and trials in areas with major roof spaces, like shopping centres.

It will be critical to work constructively with Energex and other partners who have access to the market. In particular a viable local battery will likely require support from Energex or Energy Queensland for network integration and tariff reform.



SUMMARY OF RECOMMENDATIONS

FULL RECOMMENDATIONS CAN BE FOUND IN THE MAIN REPORT

1. Continue to build constructive relationships with stakeholders, such as Energex, Energy Queensland and the community.
2. Continue to pursue information and data collection.
3. Develop a lobbying strategy to advance ZEN's work and community interests, including connecting potential delivery partners with Energex.
4. Open discussions with potential delivery partners, such as Yarra Energy Foundation and others.
5. Consider the suitability of different business delivery models including microgrid, aggregator, virtual power plants and BESS applications.
6. Consider whether ZEN or Noosa Shire Council should become the local aggregator or virtual power plant operator.
7. Investigate other delivery models used by Councils.
8. Develop a privacy-protected local register of Distributed Energy Resources to support a future aggregator enterprise.
9. Develop a greater understanding of how local batteries interact with the grid and network issues.
10. Deliver a co-design workshop with key stakeholders to explore project delivery option.
11. Continue to scout for best locations for Local Batteries.
12. Investigate the suitability of areas with large roof spaces.
13. Further develop criteria around the location of a Local Battery.

An aerial photograph of a coastline. On the left, a rocky beach with dark, smooth stones meets the sea. The water is exceptionally clear, showing a vibrant turquoise color with visible underwater rocks and reefs. The sky is a pale, hazy blue. The overall scene is serene and natural.

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