

9.7 MWRC Distributed Battery Energy Storage System

REPORT BY THE DIRECTOR CORPORATE SERVICES
TO 17 APRIL 2024 ORDINARY MEETING
GOV400105, A000000

RECOMMENDATION

That Council:

1. **receive the report by the Director Corporate Services on the MWRC Distributed Battery Energy Storage System;**
2. **endorse the preliminary concept to establish a distributed battery energy storage system (battery initiative);**
3. **requires staff to seek grant funding to support the battery initiative;**
4. **require a report be brought back to Council with a Capital Expenditure Review based on the attached commercial plan; and**
5. **amend the budget as follows, if grant funding is successful:**
 - 5.1 **2024/25: \$3,645,000, funded from \$3,645,000 grant; and**
 - 5.2 **2025/26: \$2,159,000, funded \$1,305,000 grant funding and \$854,000 from unrestricted cash.**

Executive summary

Mid-Western Regional Council ('Council') have invested in a 5MW solar generator located adjacent to the Sewerage Treatment Plant at the Mudgee (Blain Road) Waste Treatment Precinct. The powerplant will be used to provide renewable electricity to all council sites via an Energy Retailer in a Power Pass Through model.

The solar generator has been designed to incorporate a large-scale 'Mother' battery so that it is possible to supply energy outside of solar hours and also to better adapt to energy market conditions. Wholesale energy costs vary greatly throughout the day and the central solar array battery is an important tool in de-risking market participation and optimising project performance.

Battery storage is also proposed to be distributed across 4 load sites to provide the multiple benefits as set out in the attached commercial plan. This report seeks to obtain endorsement to progress with this battery initiative, and seek grant funding to support this important next step in Councils sustainable energy solution.

Disclosure of Interest

Nil

Detailed report

Project Proposal

Council has invested in a 5MW solar generator/array (located adjacent to Mudgee's Sewerage Treatment Plant at the Blain Road Mudgee Waste Treatment precinct). Council's Community Batteries Project proposes to leverage the investment Council is already directing toward energy self-sufficiency.

The powerplant will be used to provide renewable electricity to all council sites via an Energy Retailer in a Power Pass Through model. The solar generator has been designed to incorporate a large-scale battery so that it is possible to supply energy outside of solar hours and also to better adapt to energy market conditions. Wholesale energy costs vary greatly throughout the day and the central solar array battery is an important tool in de-risking market participation and optimising project performance.

Battery storage can also be distributed across several smaller sites and provide a similar role in 'playing the market'. That is, charging when energy is least cost and running site loads to avoid buying electricity when it is expensive – usually in Peak periods from 7 – 9am and 5 – 8pm. Batteries installed at sites can also have other benefits including improving power quality, reducing peak demand charges, better site energy monitoring, associated load control, redundancy/resilience if capable of off-grid or back-up mode, and the capacity to earn retail rebates for demand control and network services.

Through the community batteries project, Council will test the ability of a central battery paired with distributed batteries to provide the multiple benefits described above. The project purpose is to test the hypothesis that Councils with distributed assets (loads) can operate Central and Distributed Energy Resources to deliver:

- Internal benefits including cost control, decarbonisation, site/asset optimisation, resilience.
- External benefits including Energy Network services, regional decarbonisation, reputational advantage.

A larger "mother" DC-connect battery will be placed at Council's solar array to support smarter energy supply to Council and community loads, meeting peak periods to reduce consumption costs and network demand. 4 smaller "child" batteries will be installed Behind the Meter at critical potable water infrastructure including the Mudgee, Gulgong and Rylstone Water Treatment Plants (WTPs), and the Kandos Water Pumping Station. These batteries will deliver energy security/resilience to key Council facilities and communities whilst improving the region's environmental and financial sustainability.

The batteries located at the pumping station and WTPs will be key to providing resilience by being a backup energy source at the pumping station and WTPs which provide essential potable water supply to the region's towns and villages. The batteries will help keep the community safe if there are power outages.

There are alternate/back-up sites in the region that have been investigated and are ready to replace one or more of the indicated sites (for child batteries) if needed. Grant funding will enable Council to deploy and install batteries in strategic locations so climate emergency resilience is delivered to key facilities and infrastructure.

Community Plan implications

Theme	Good Government
Goal	An effective and efficient organisation
Strategy	Pursue efficiencies and ongoing business improvement

Strategic implications

Council Strategies

Not Applicable

Council Policies

Not Applicable

Legislation

Local Government Act 1993 section 23A

Local Government Capital Expenditure Guidelines

Financial implications

The total budget required for the battery initiative is \$5,804,000. It is proposed to seek grant funding, up to \$4,950,000. A budget adjustment is required in order to accept the grant funding, if successful.

If Council is unsuccessful at obtaining grant funding, the commercial plan will be further reviewed and a report brought back to Council to consider the cost impact and feasibility under a loan funded scenario. This work will be included in a full Capital Expenditure Review.

Once the battery initiative is progressed, a budget adjustment to impact revenue, energy costs, operational and maintenance costs and depreciation will be required. Until it is known if the project will proceed (grant funding obtained), these entries are not proposed for inclusion.

Budget Year	Operating Performance Ratio	Own Source Revenue	Building & Infrastructure Renewal
2024/25	-	✘	-
Future Years	✓	✓	✘

Associated Risks

A Risk Register and Risk Management Plan have been developed for this proposal. The highest risk items are:

The environmental risk of fire from external hazards and natural disasters, including severe storms, floods and bushfire, build up of gases or battery malfunction. The controls for this include meeting Australian Standards for exposure, locating the batteries close to managed facilities, ensuring emergency plans are in place, implementation of monitoring programs and bushfire management protocols in the nearby vicinity.

Battery malfunction causing damage to network/public infrastructure. The controls for this include ensuring batteries are installed and commissioned as per supplier and DNSP requirements. Ensuring regular maintenance and compliance checks. Ensuring offsite monitoring of usage and generation occurs to pick up any minor issues before they compound/worsen.

The WHS risk of workers, contractors, and the community. Cybersecurity threats and vulnerabilities. Controls for this include adequate security and monitoring and protection of the devices.

With appropriate controls, all high rated risks are reduced to moderate or below risk.

LEONIE VAN OOSTERUM
DIRECTOR CORPORATE SERVICES

4 April 2024

Attachments: 1. MWRC Battery Integration Strategy and Commercial Plan (the commercial plan). (Confidential - separately attached)

APPROVED FOR SUBMISSION:

BRAD CAM
GENERAL MANAGER