



MARCHMENT HILL

- consulting -

Lessons Learned Review of Renewable Energy Projects for a Water Utility

the challenge

Our client, a water and wastewater utility, had been exploring the benefits of utilising renewable energy to support their energy requirements utilising hybrid off-grid energy projects and “behind the meter” projects such as rooftop solar. They had undertaken several projects to test available solar and battery technology and various project package options.

MHC was engaged as an external organisation tasked with undertaking a lessons learned review of a number of projects involving complex hybrid off-grid energy, or rooftop solar technology. The expected outcome of this review was the identification of a number of holistic themes emanating from all projects, which were to be accompanied by clear recommendations for improvement and next steps for implementation.

what Marchment Hill did

For this review, MHC’s approach was to use a generic asset acquisition process, with steps from Initial Planning through to Operation & Maintenance, as a logical flow to follow for investigation of each individual project with internal and external stakeholders.

Asset Acquisition Process
1. Initial Planning
2. Optioneering
3. Business Case
4. Design Specification
5. Tendering
6. Delivery
7. Commissioning & Handover
8. Operation & Maintenance

Internal and external project stakeholders that covered the breadth of this process were interviewed by MHC in person and via questionnaire to identify any successes and challenges encountered in each process step, with MHC also undertaking a review of relevant and available project documentation.

MHC identified several holistic challenge themes relevant to lessons learned across the reviewed projects:

1. The push for adoption of solar and battery technology within water and wastewater projects had financial merit, however, lacked the intrinsic support of senior management.
2. Motivated stakeholders existed both internally and externally to the utility, however, they were not supported by fully developed and endorsed processes to deliver renewable energy projects.
3. The water utility and their delivery partners required further development in their technical capability and levels of maturity in order to successfully deliver complex renewable energy projects.
4. The projects delivered to date had lacked sufficient financial scale to be able to carry a disproportionate overhead compared to total project cost.
5. The contract and commercial model adopted for delivery of renewable energy projects was appropriate for traditional water and wastewater asset construction projects, but not suitable for comparatively new and unfamiliar renewable energy technologies.

MHC developed a series of recommendations and a high-level implementation plan relating to the following:

1. Establishment of a Renewable Energy Working Group, commissioned to develop a Renewable Energy Policy and lead the development of various improvement initiatives related to more efficient and effective delivery of renewable energy projects.
2. Specifically, implementation of improvements to the capital program prioritisation process to better promote renewable energy projects, and development of appropriately customised design specifications for renewable energy project packages.
3. Building an appropriate contract and commercial model for (i) hybrid off-grid energy projects, and (ii) rooftop solar projects.

The communication of MHC's recommendations and high-level implementation plan was conducted in a collaborative joint workshop session involving our client and their delivery partners.

the benefit

The lessons learned review helped our client identify critical changes to their approach for selection, acquisition and delivery of renewable energy projects, with many lessons learned also being applicable to broader business processes.

The high level of consultation with internal and external project stakeholders adopted by MHC consultants throughout the review:

- Ensured a high degree of commitment to the recommendations of this review, and
- Cultivated a working and problem-solving partnership between our client and their delivery partners, which was a necessary component to developing an appropriate future contract and commercial model.