

LORD HOWE ISLAND BOARD

Business Paper

OPEN SESSION

ITEM

Renewable Energy Program Update

RECOMMENDATION

It is recommended that the Board note the renewable energy program update.

BACKGROUND

In 2012, the Lord Howe Island Board (the Board) adopted the Lord Howe Island Renewable Operations – Energy Supply Road-Map (the Road Map), to reduce the Island’s reliance on diesel fuel for electricity generation. The Road Map was developed with the important assistance of the community based Sustainable Energy Working Group (SEWG).

The Road Map set the ambitious target for the island of 63% renewable energy by 2017. Funding for the project is provided through a \$4 million grant from the Federal Government via the Australian Renewable Energy Agency (ARENA), a \$5.9 million loan from NSW Treasury (to be paid back via diesel fuel savings), and \$0.5 million from the Board. With funding seemingly secured, work continued on the next phase of the implementation of the Road Map. A requirement of the funding from ARENA was that the project achieves a minimum 1 megawatt (MW) of new renewable energy.

Consultants Jacobs were engaged by the Board in 2014 to lead the technical elements of the project, and community consultation. Jacobs completed a Technical Feasibility Study in March 2015 which examined the mix of solar panels, batteries and wind turbines. The study showed that using 450 kW of solar panels (around 2,000 panels), a 400kWh battery and two small 275kW wind turbines, will reduce the Island’s diesel fuel consumption from 541,000 litres per year to around 180,000 litres per year, a 66% reduction. This combination also provides 67% of the Island’s annual electricity needs, exceeding the target set in the Road Map.

Solar, Battery and Control System Contract

The tender for the solar, battery and control system contract package of work was advertised on NSW e-tendering between 15 June and 24 August 2016. The assessment of the tenders by Jacobs and the Board is complete and a preferred contractor is known. ARENA and their consultants AECOM undertook a review of all tenders and the tender assessment in November \ December 2016, ultimately reaching the same decision.

However ARENA delayed the awarding of the contract by the Board until after their Go\No Go decision about the future of the project.

Wind Turbines

Environmental Assessment Process

A referral of the wind turbine component to the Federal Government under the *Environment Protection Biodiversity Conservation Act* was lodged on 29 September 2016. On 2 June 2017 the Federal Minister for the Environment and Energy, after calling the referral up for his decision, determined that the “proposed action of constructing and operating two wind turbines on Lord Howe Island would have unacceptable impact on World Heritage values and the National heritage values of the Lord Howe Island Group”.

This decision means that it is not possible to proceed with the wind turbine component at this stage.

ARENA Funding

A meeting was held with representatives of ARENA in late June 2017. The purpose of the meeting was to discuss the future of the renewable energy project now that the Federal Environment Minister has determined that the wind turbines would have an unacceptable impact on world heritage values.

The ARENA representatives indicated that they did not believe that the ARENA Board would support continued funding for the project in its current form, without the wind turbine component. This is because the ARENA funding is targeted to innovative renewable energy solutions which can serve as demonstration projects for other like areas, in Lord Howe Island’s case, for other remote locations. The proposed hybrid renewable energy project consisting of solar, wind, battery storage and back-up generator with a diesel saving of up to 70% per annum, was seen as an innovative solution to providing renewable energy in a remote location.

However, without the wind turbine component, the project with just solar and battery storage, saving 35% of diesel fuel is not seen as sufficiently innovative.

CURRENT POSITION

After extensive negotiations, ARENA has now approved the funding for the development of further options, comprising solar and other renewable approaches, which may be acceptable to their Board and lead to a variation in the Board’s funding agreement with ARENA.

Consultants Jacobs have been engaged to undertake this work and report on the project economics and potential demonstration value of the following points:

1. “Wind Ready - Optimised Solar”
 - 550kW solar generation and a 400kW/400kWh battery
 - Designed to accommodate the future connection and control of up to 550kW of wind generation
 - Capable of 100% instantaneous solar penetration (i.e. operating in diesel off mode).
2. “Maximised Solar”
 - Area previously reserved for the wind turbines to be developed as solar arrays in addition to the area used for solar in Option 1.
 - Battery optimised to accommodate the increase solar generation and minimise curtailment
 - Capable of 100% instantaneous solar penetration (i.e. operating in diesel off mode)

3. Assessment of potential for 100% Renewables
 - Assessment of substitution of diesel for biodiesel including: cost, availability and impact on existing diesel generators.
4. Assessment of the potential for enabling technologies to improve project performance, economics, renewable energy penetration, power quality/grid stability/reliability or demonstration value.
 - Demand Management (e.g. incorporation of curtailable loads like pumps or air conditioning or a fleet of electric vehicles (potentially controlled as a load or generator)).
 - Solar forecasting technologies (e.g. sky cam)
 - Advanced micro grid control technologies

This work on the options is expected to be completed by the end of December 2017.

Budget

The total cost of the project from July 2014 to date is \$2.4 million. Expenditure has been frozen since ARENA indicated that it was reconsidering the funding agreement with the Board.

To date ARENA has provided funding of \$500,000, and NSW Treasury provided \$60,000 to meet the cost of the preparation of the business case, leaving a shortfall (overspend) of approximately \$1.85 million. This overspend includes approximately \$500,000 that has been spent on the supply of road base materials for the access road construction, which is now on hold. Pending a decision on the future of the renewable energy project, these materials will be diverted to other road projects on the Island and the funds recouped from other capital project budgets.

In order for ARENA to approve the additional alternative investigation works by Jacobs they have made a change to the existing Deed of Agreement for the funding through a Deed of Variation which has inserted a new Milestone 5: Alternative Scenarios Report and pushed back the other Milestones consecutively up to Milestone 12. Approximately \$100,000 has been earmarked by ARENA for the further investigation works.

Invoices amounting to \$600,000 (ex GST) have now been sent to ARENA for both Milestone 4 and Milestone 6.

RECOMMENDATION

It is recommended that the Board note the above information.

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