

9 November 2021

Mayur confirms +500MW solar capacity for its Special Economic Zone

Mayur Resources Limited (ASX:MRL) has completed a renewable energy study for its recently granted Special Economic Zone (SEZ) and the “shovel ready” Central Cement & Lime (CCL) Project in Papua New Guinea (PNG).

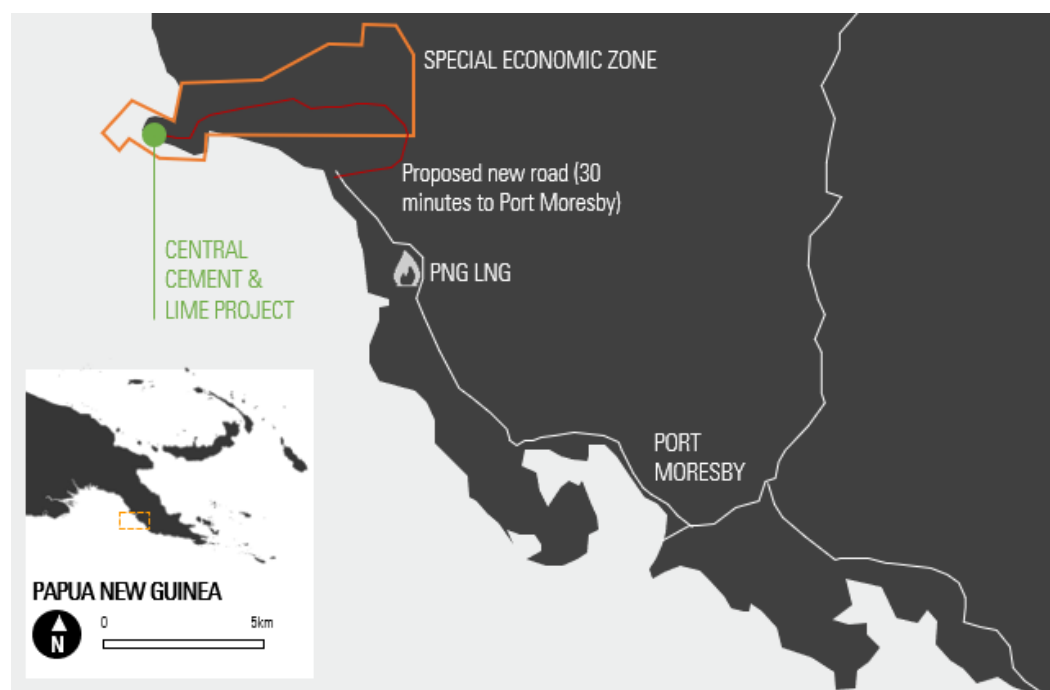
The study focussed on the provision of renewable solar power generation to supply :

- the CCL project located within the SEZ;
- other potential new industry that could be established within the SEZ; and
- existing industry adjacent to the SEZ.

The number one driver for undertaking this study has been to support Mayur’s vision of becoming the “Supplier of Choice” for carbon neutral lime and cement products in PNG, Australia and the Pacific. This aligns with Mayur’s strategic direction of integrating renewables across its project portfolio and the establishment of Mayur Renewables as an entity to deploy a clean energy platform within the Pacific region.

The study was completed by VECKTA (www.veckta.com) to examine the opportunity for large-scale renewable solar farm/hybrid power whilst leveraging the strategic advantages and location of the SEZ.

The study indicated that an installed solar power capacity of around 500 megawatts (MW) could be achieved within the SEZ, similar in size to PNG’s current total installed power capacity. The solar farm would not only provide a source of renewable energy for the CCL project, but also for use by other future large scale industrial users who would benefit from being in the SEZ, and power to local communities that currently have no access to electricity. Other opportunities include direct supply of renewable power to large nearby existing industrial users, and into the nearby Port Moresby transmission grid as and when demand arises.



*Nation building
in Papua New Guinea*



Production of large-scale solar energy, coupled with the benefits from the SEZ, is expected to enable the delivery of an energy tariff that is at least 50% less than current regulated electricity charges in PNG.

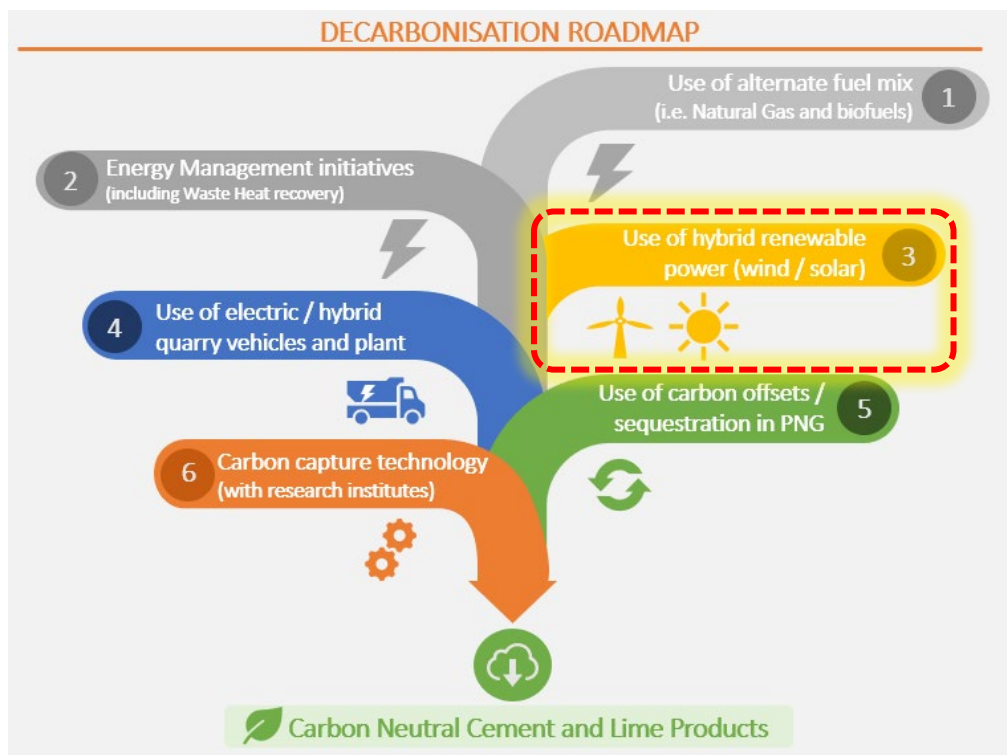
VECKTA's scope examined the total amount of solar energy that could be generated in the given area and the estimated levelized cost of energy (LCOE) for the system, at different load sizes and levels of renewables content.

VECKTA, powered by XENDEE, performed a techno-economic analysis of viable energy solutions using a Mixed Integer Linear Program (MILP) to determine the optimal mix, size, and hourly dispatch of an advanced Distributed Energy System. The optimisation was subject to over 500 constraints, including technical (e.g. hourly solar panel performance), financial (e.g. interest rate on debt, CAPEX, OPEX), physical (e.g. available installation space), and energy balance parameters.

Outcome 1 - Minimum 30% renewable energy available for Quicklime Plant (CCL Project - Phase 1)

The study confirmed a minimum 30% renewable electrical power for the CCL Project's Phase 1 Quicklime Plant. In combination with a co-located quarry, lime kilns and wharf, CCL will have a far lower carbon footprint than other competitors from day one of operations.

The study also confirmed that with a modest size Battery Energy Storage System (BESS) of 1 MWh (megawatt hour) the renewable penetration along with expanded solar capacity could increase to 40%. Mayur's ultimate intention is to be pragmatic and incrementally increase renewable penetration to 80% as the capital intensity of BESS systems reduces.



Pathway to carbon neutrality for the Central Cement and Lime Project

Other initiatives that will contribute to Mayur becoming Asia Pacific's first carbon-neutral cement and lime producer include using alternative fuels as well as electric vehicles and equipment, internationally verified carbon offsets, and carbon abatement as technologies for carbon capture mature. Mayur ultimately plans to migrate away from the use



of carbon offsets, where possible, and adopt a greater use of carbon abatement technology as and when they are demonstrated to be cost effective and commercially viable.

Market opportunities for low carbon lime and building projects throughout the Asia Pacific region, particularly Australia and New Zealand, will grow rapidly as companies strengthen their commitment to sustainability and develop Environmental, Social and Governance (ESG) principles.

Managing Director, Paul Mulder said “As the first to deliver carbon neutral cement and lime through the innovative use of technology, renewables and internationally verified carbon offsets, our business will have a major advantage within the Australasian building products, mineral processing, water/waste treatment and pollution abatement markets. We have to ensure our approach is bankable, pragmatic, realistic and over time adopt different levels of carbon reduction, offset and capture initiatives so that we continue to be competitive and be able to provide a high-quality reliable product to our customers”.

“Importantly, this move to reduce our carbon footprint from day one aligns with the broader ESG commitments made by many of our downstream customers who are also seeking to reduce emissions across their respective supply chains.”

Outcome 2 - potential for more than 500MW of solar energy within the Special Economic Zone

VECKTA assessed the entire SEZ (an area of 52 km²) and identified potential for more than 500 MW of solar PV generation. The study was conducted to assess different scale and renewable penetration options to identify the levelized cost of energy (LCOE) for each option that can be targeted in the immediate, medium and long term.

The medium to long-term opportunity for solar power in the SEZ, is the provision of a new cost-effective renewable energy supply enabled by a supportive fiscal environment and large economies of scale to deliver far cheaper power in Port Moresby. This would also contribute to the aspirations and commitments of the PNG Government to increase the electrification rate to 70% by 2030.

Excluding generation by private industry, the installed capacity on PNG’s public electricity grids is approximately 550MW. This serves a population of 9 million people with an electrification rate of only 13% of the population.

Detailed design, engineering & solar layouts and landowner collaboration and consents will now be progressed to determine the maximum and optimal size of the system, how this will be staged over time shall be determined by demand from the CCL project, the wider SEZ, adjacent industry and when/if the national power company (PNG Power Limited) requires such power for the local grid network.

Next steps with stakeholders

Mayur has already met with the Provincial Government in September 2021 to progress the development of the proposed solar energy farm within the boundary of the SEZ. Shared initiatives have been agreed to maximise land use and to involve landowners early in the process in developing businesses in the SEZ. Opportunities for partnerships will not just be limited to jobs and spin-off businesses related to the CCL Project but also include complementary and additional new businesses promoted by the SEZ.

Mayur will utilize the VECKTA marketplace platform to continue to progress this project by identifying and procuring the optimal scopes of work and suppliers as efficiently and effectively as possible.



This announcement was authorised by Mr Paul Mulder, Managing Director of Mayur Resources Limited.
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ABOUT MAYUR

Mayur Resources is focused on the development of natural resources in Papua New Guinea. Our diversified asset portfolio spans iron sands, lime and cement, battery minerals and renewable power generation. Mayur also holds a 43% interest in copper gold explorer/developer Adyton Resources, a company listed on the TSX-V (TSXV:ADY).

Mayur's strategy is to serve PNG and the wider Asia Pacific region's path to decarbonisation by developing mineral projects that deliver higher quality, lower cost, and "net zero" inputs for the mining and construction industries, as well as constructing a renewable energy portfolio of solar, wind, geothermal, carbon mitigation, and battery storage.

Mayur is committed to engaging with host communities throughout the lifecycle of its projects, as well as incorporating internationally recognised Environmental, Social and Governance (ESG) standards into its strategy and business practices.

ABOUT VECKTA

VECKTA integrates the world's most advanced energy system engineering tools with an end-to-end marketplace to integrate and accelerate the development of distributed energy systems (DES) and microgrid projects. VECKTA empowers businesses and communities to quickly and easily baseline their energy situation today, customise a solution specific to their needs (cost, reliability and/or emissions) and then seamlessly engage and contract the best equipment, services, and capital providers in the market to finance, deploy and operate it sustainably and profitably.