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# Powering a remote island with sustainable electricity

Providing efficient and sustainable electricity 24/7 for fishermen and farmers in a remote village in Kenti Island, Myanmar.

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Schneider Electric Access to Energy (A2E), in collaboration with Techno-Hill Engineering have won another flagship project in Myanmar where the objective is to provide efficient and sustainable electricity 24/7 for fishermen and farmers cultivating rubber trees in one of the four villages on Kenti Island.

### Village electrification projects in Myanmar

The Department for Rural Development (DRD) of Myanmar has identified 40 000 villages to be electrified through microgrids. Over the last two years, Schneider Electric has been actively involved with various stakeholders in Myanmar to get more involved with these village electrification projects. The Schneider Electric teams have been working with local partners to ensure they have all the technical and training support they require to successfully participate in any of these projects.

One of these local partners, Techno Hill Engineering, won a project from DRD for the electrification of one of the villages on Kenti Island. Thanks to the backing from the World Bank, the project was awarded a 60% subsidy which helped them seal the deal.

### Why it makes sense for the village to go this route:

The village, of 300 households, used to be powered off a diesel generator. The generator was privately owned and the owner would sell power to the village from 6 – 10pm at 700 MMK (~\$0.53) per kWh. Thanks to the deal structured around the Nanogrid system (solar + battery storage + diesel generator) the villagers are now able to purchase power 24/7 for a cost of 350MMK (~\$0.27) per kWh. That's a 50% reduction in the cost of power with the added convenience of having access to power 24/7 – where they only used to have access to power 4 hours per day.

In addition to the \$ per watt charge for the electricity from the Nanogrid, the villagers paid about 250,000 MMK (\$153) connection fee that allowed Techno Hill Engineering to recover about 20% of the Capex of the project. For households that could not afford this, a NGO provided micro-loans at no interest to help them get connected to the grid. These customers are expected to cover this cost over 24 months at an installment of about 14 000 MMK per month (\$10.60).

## Goal

Provide efficient and sustainable electricity 24/7 for fishermen and farmers cultivating rubber trees in one of the four villages on Kenti island, Myanmar.

## Customer Profile

Founded in 2014, Techno-Hill Engineering has been providing solutions and services in Telecom, Electricity Power, Construction and Oil&Gas industry. Website: <http://www.techno-hill.com/>

## Solution

Nanogrid solution using the Schneider Electric Conext™ XW+ hybrid inverters, Conext MPPT charge controllers and Conext ComBox.

## Results

The Nanogrid solution improved the living standard of the villagers and helped fishermen to grow their businesses. Techno-Hill plans to double the installed capacity, which will allow more customers to connect to the Nanogrid.

To ensure the system is well maintained, and the pre-paid electricity model is enforced, Techno Hill trained and hired some local villagers who ensure the basic maintenance of the microgrid as well as the revenue collection of pre-paid electricity by charging customer's RFID cards.

Reaching an agreement in terms of the overall project architecture, governance, tariff, and financing contribution for this unique PPP model, took a year of negotiations between Techno Hill and the Village Committee of Kenti village. With this first model clearly defined, and lessons learned from the negotiations, it should be a lot quicker to roll out other projects of a similar nature in the vicinity in the future.

### The nanogrid solution they installed

To build the microgrid solution for the village, A2E decided to use Conext™ XW+ hybrid inverters and other equipment. The Nanogrid solution they installed provides 63kWp of solar capacity connected to the battery bank through 14 Conext™ MPPT charge controllers. The 6 Conext™ XW+ inverters providing power to the village are connected to a 288,000 Ah battery bank. There is a 70kVa diesel generator on site as backup for periods of poor weather or long-lasting storms. The site also uses a Conext™ ComBox for local and remote monitoring.

The Nanogrid is powering up the 300 households,



other public buildings, several businesses and 45 street lights through a 2.5km long distribution line.

### Next Steps for the villagers on Kenti island

The Nanogrid solution was well received by the villagers. Wealthier households on the island have asked for access to more electricity so that they can run air-conditioning in their homes. Some of the fishermen have also already asked for more so they can buy more powerful freezers and cold chambers and grow their businesses. Soon, Techno-Hill will be doubling the installed capacity after receiving the approval from the DRD. This will allow more customers to connect to the Nanogrid.

“The village is now able to access to electricity 24H from our Minigrid - where they used to have only 4H/day.

I would like to thank Schneider Electric for their supports and commitments throughout the project.”

— Barani Aung, Managing Director of Techno-Hill Engineering



## Residential Off-Grid Solution

Learn more about the Conext XW+ and how its complete residential solution can help you gain energy independence.

Watch our Conext XW+ product video.



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