

Case Study

Going off Grid





GOING OFF GRID

The Great NZ River Ride is a scenic 70km river ride that runs between Ngaruawahia and Horahora, 20km south of the Mighty River Domain at Lake Karapiro.

The route weaves through rural and urban landscapes, taking in waterfalls and historic Maori sites as well as trendy shops, cafes and wineries. Crossing the Waikato River at Horotiu is

the 130-metre long and 3-metre wide Perry Bridge which connects the northern section of the ride with the south.

LIGHTING THE BRIDGE

Over 1000 users – cyclists and walkers – are projected to use the Horotiu section each week and while the main access is expected to be during daylight hours, the Te Awa project team wanted to the bridge area to be safe. So they approached WEL Networks to discuss lighting options.

WEL Innovation Engineer Cam Chapman explains the team was happy to assist but it was established early in the process that installation and ongoing maintenance costs would be too high using traditional methods.

WEL decided to find a more cost-effective solution.

Over recent months they had been testing the feasibility of providing solar power to communities by installing 76kW of solar panels on the depot roof, so they knew this source would be a cost effective sustainable option and even more so if they set up an onsite storage system. This was the thinking behind the bridge project.

The complete power supply includes two 100-watt wind turbines and two 250-watt solar panels mounted at the base of the bridge, with a 9-kilowatt hour battery ensuring enough power is readily available to power the bridge lights when activated remotely.

While the energy used by the lights is “minimal” – the equivalent of one standard pole streetlight – the off-grid approach costs about 25 per cent less than connecting the lights to the network.

“In a way this energy is free. We’re harnessing all this renewable energy and using it in the evening from the batteries.”





INDUSTRY COLLABORATION

Collaboration with LZ New Zealand solidified the off-grid approach as they brought extensive LED lighting experience, and research into off-grid generation and storage systems, to the project.

That opened an opportunity to combine LZ's off-grid solutions with WEL's smart meter capability.

LZ New Zealand's expertise in LED lighting aligns seamlessly with WEL's vision to provide innovative, sustainable energy solutions.

WEL's research into solar energy will give communities more choice when it comes to power options and is a more economical solution to running lines on large-scale projects and in rural settings.

For example, power costs for local marae can be quite high. WEL Networks could build a [solar] farm for them where they generate all of their own energy.

Cam says 'We have to embrace distributed generation, understand it and develop it as products and services for the community. Once we understand how it works, we can scale it up. With large projects, or if people want to go off grid, we can support that. It certainly provides exciting energy opportunities for our business in the future.'

ABOUT WEL NETWORKS

At WEL Networks, we're delivering innovative energy solutions which enables our communities to thrive and keep the lights on 24/7.

We've been serving the Waikato for 100 years, distributing power from the national grid, connecting over 160,000 people to electricity services through 89,000 installation connection points.

Based in Hamilton, we play an essential role in the region's economic and social development by identifying and investing in new technologies that will modernise our network and future-proof our region.

We're excited to be broadening our horizons as we diversify from a traditional lines company into a multi-utility.

This has driven our company's growth strategy and in recent years has seen us exploring not only new ways of ensuring our customers can receive safe and reliable energy, but expanding our commercial interests to include a majority share in local fibre company Ultrafast

Fibre Limited, electric vehicle fast charging stations, and energy efficiency projects like smart meters, storage and solar power.

Each year we invest around \$81 million in maintaining our network of power poles, lines, and underground cables stretching across the Waikato keeping our network in a safe and reliable condition. To deliver this programme of work we employ around 240 people with a range of expertise; from Live Line Mechanics, Faults Technicians and Technical Planners, to in-house Health & Safety professionals, Accountants and Human Resource management.

With the WEL Energy Trust our sole shareholder we're proud to be 100% owned by the community we work, live and play in.



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