

The Power of History Just Got Brighter

CHALLENGE

Design solar system to offset high energy consumption while complying with strict Museum and Trust requirements

SOLUTION

Replace string inverter plans with all-AC Enphase Microinverters that are mounted directly to the modules

RESULT

Increase in system size from 42kW to 50kW

Expected production of 66,000kWh annually



“Enphase Microinverters maximised system size and production greater than any string inverter.”

—David Keppel
Managing Director
What Power Crisis

Auckland Museum wanted to go solar, but was constrained by strict building regulations. Enphase Microinverters were used to preserve the Museum as a heritage-listed and iconic building.

Solar Takes Weight Off Carbon Load

New Zealand, its place in the Pacific, and the story of its people are showcased in the Auckland Museum. Exhibits, galleries, tours, and events all play part in the Museum's tribute to New Zealand, racking up large and expensive electricity bills each month.

Multi-coloured lighting systems and projections are run both inside and outside the Museum, soaking up a significant amount of electricity per year.



Enphase Microinverters made it easy for What Power Crisis to meet strict regulation guidelines that preserve the Museum's appearance and structure.

The Museum calculated its annual energy consumption and quickly began working with renewable energy service provider What Power Crisis to install a solar system that offset its high energy demands.

Microinverters Offer Greater Reward

The first proposed design plans utilised string inverters. But issues quickly arose and the limited flexibility of string inverters hindered the success of the installation. The advantages of microinverter technology soon became clear, leading both the installer and Auckland Museum straight to Enphase.

The most significant reason for choosing Enphase was its compliance to installation guidelines set by the New Zealand

Historic Places Trust that restricted all holes and hooks from puncturing the roof. With Enphase, the installer was able to weigh down the system rather than attach it. The Trust also prohibited DC wiring from running down the inside of the building, which was easily avoided by the microinverter's all-AC cabling. The project finally began after an extensive nine-month approval process.

Shading also played a key role in the decision to swap string inverters for microinverters. To ensure the majestic appearance of the Museum is preserved, the system was designed under a one-metre parapet so it would not be seen from the road. The unavoidable shading during different times of the day would diminish the system's overall production if string inverters were used, and in turn, would make the ROI unattractive.

"Depending on the time of day, several outer panels are unavoidably shaded. It was a nightmare trying to keep 10 to 20 panels on a single string from being affected by those on the outside," said David Keppel, managing director of What Power Crisis. "The system performance and ROI we now see with Enphase Microinverters would not have been nearly as good if we had stayed with string inverters."

Enphase technology even allowed Auckland Museum to maximise its rooftop space and increase its system size from 42kW to 50kW.

"With Enphase, we could expand the system out to the edges of the roof and add more modules. Once again, string inverters could not measure up," said Keppel.

INSTALLATION SUMMARY

Client **Auckland Museum**

Location **Auckland, New Zealand**

Installer **What Power Crisis**

System Size **50kW**

Microinverters **Enphase M215**

Modules **Renesola Virtus II 260W**

About Enphase Energy

Enphase Energy revolutionises solar power generation with industry-leading technology innovation. Enphase's proven microinverter technology maximizes production of each module, which works together with advanced communications hardware and an intelligent software platform to deliver a reliable, high-performance solar array.

To find how Enphase can help cut your energy bills and carbon footprint, visit enphase.com/au.