

## SolarTech Power Solutions

# New Zealand Polycrystalline Solar System Integration



## Overview

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Why do PV solar systems vary in New Zealand?

varies substantially by location in New Zealand due to weather patterns, naturally throughout a day, and by season and latitude with sun angle. Combined with the low efficiency of PV modules and electrical losses, the capacity factor of PV solar systems in New Zealand varies substantially, as shown in Figure 5.

Can MBIE forecast utility-scale solar energy generation in New Zealand?

For this study MBIE specifically requested a forecast of utility-scale photovoltaic (PV) solar electricity generation in New Zealand to 2060. The starting point to develop a utility-scale PV solar generation forecast is to forecast utility-scale PV solar capacity, then convert that to energy.

How can agrivoltaics benefit Aotearoa New Zealand?

With increased interest in energy generation of utility-scale solar photovoltaic (PV) systems in Aotearoa New Zealand, agrivoltaics provides the opportunity to increase the productivity of land, contribute to the generation of renewable energy without displacing food production, and potentially optimise farming and environmental outcomes.

How many solar panels are installed in New Zealand?

In October 2022, Electricity Authority data showed 43,641 solar systems installed across New Zealand, adding up to 240 MW. This makes up an estimated contribution of under 1% of total electricity consumption. Globally, solar PV uptake has increased significantly over the past decade.

Could utility-scale solar development become economic in New Zealand?

One of the key findings from this study is how rapidly utility-scale solar development could become economic in New Zealand. For example, if all economic utility-scale solar systems were built within the existing grid

capacity, there could be several gigawatts of development in the space of 5-10 years.

Can solar power improve agriculture in Aotearoa New Zealand?

Based on overseas research, there are potential benefits for integrating solar production with agriculture in Canterbury and other regions of Aotearoa New Zealand. These include livestock wellbeing and productivity; pasture and crop production, particularly in dryland areas; and an increase in overall land productivity.

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