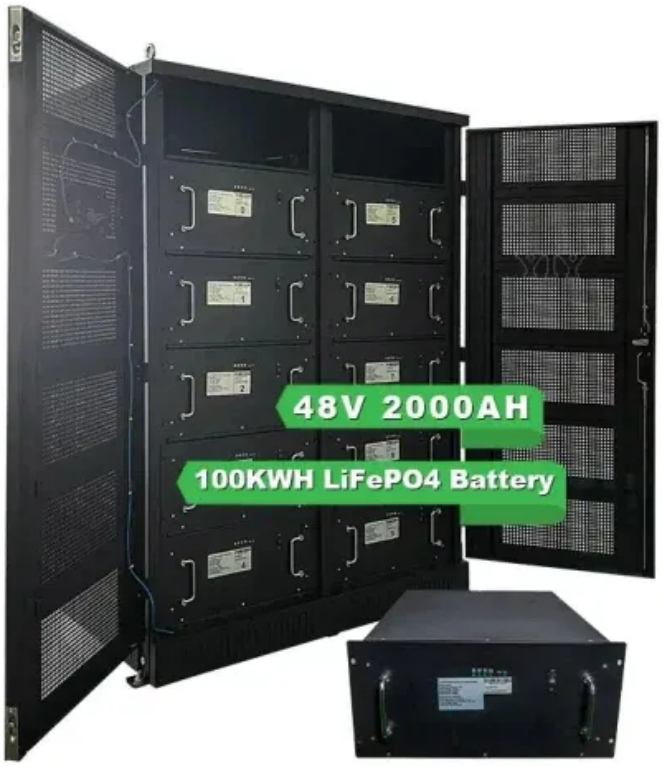
European Solar and Energy Storage Solutions

Agrivoltaic systems New Zealand



Overview

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.

Will agrivoltaic be New Zealand's First Utility-scale solar farm?

Integrating material cycles into the analysis of an accelerating energy transition for Aotearoa – New Zealand. 13th International Sustainability Transitions Conference, Melbourne, Stellenbosch, Washington DC. Raghuvanshi, P. (2023). Agrivoltaic project is all set to become New Zealand's first utility-scale solar farm.

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.

What is agrivoltaics in livestock farming?

Agrivoltaics is the integration of agriculture and solar energy production and seeks to find synergies between the two to create a complementary system. Agrivoltaics relates to all agricultural activities. However, for the purpose of this report, solar integration with livestock farming is the focus.

Do agrivoltaic systems protect highly productive agricultural land?

The protection of highly productive agricultural land is covered by the 2022 national policy statement for highly productive land and planning officials may

view conventional solar farms to be in conflict. We argue that well-designed agrivoltaic systems will resolve this conundrum.

Why are there no photovoltaic options available in Aotearoa New Zealand?

In addition, due to the complexity and current low demand, there are no photovoltaic options available in Aotearoa New Zealand. This is something that needs to be addressed given the forecast increase in photovoltaic installations in the country.

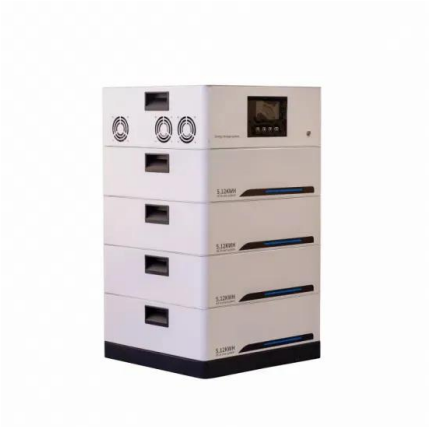
Agrivoltaic systems New Zealand

INTEGRATING SOLAR ELECTRICITY GENERATION WITH ...

configuration, we can install agrivoltaic systems that allow livestock to graze between and/or under the solar PV panels. The generated electricity can of course be for on-farm use, but with larger systems we can sell electricity back to the national grid. Our goal with agrivoltaics is therefore to create synergies that increase

Agrivoltaic Systems for Aotearoa New Zealand

DOI: 10.19080/IJESNR.2024.33.556357 04 International Journal of Environmental Sciences & Natural Resources Aotearoa New Zealand Agricultural Produce Appropriate for Agrivoltaic Systems An overlay of crop production on a previously reported GIS analysis [1], shows, as can be expected, that the solar resource is extremely good in areas ...

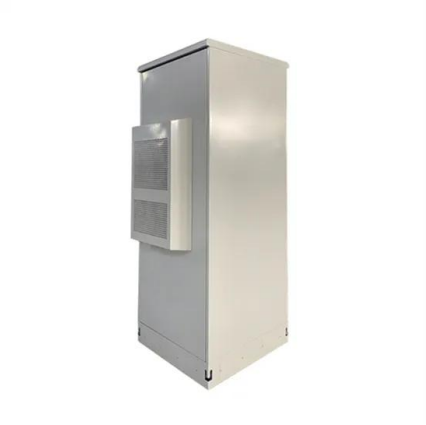


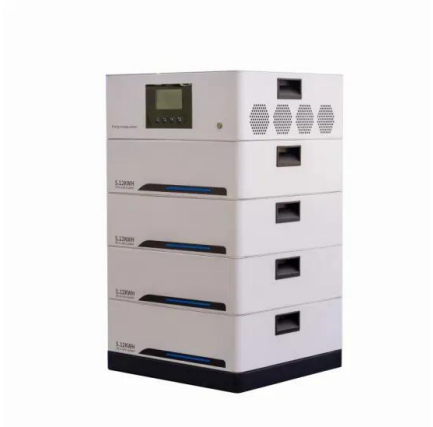
Floating photovoltaic systems: potential implications for Aotearoa New ...

AgriPV systems: potential opportunities for Aotearoa-New Zealand. 3rd world congress on agrivoltaic systems; Piacenza, Italy. Ministry of Business, Innovation, and Employment (MBIE). 2021.

Agrivoltaics: Integrating Solar Energy Generation with ...

Land suitability for agrivoltaic systems in Aotearoa New Zealand [11]. Over 80% of agricultural land in Aotearoa New Zealand was found as good or fairly suitable (around 10 million hectares). The total amount of grazing grassland with a good suitability rating is significantly larger than cropland. This suggests that



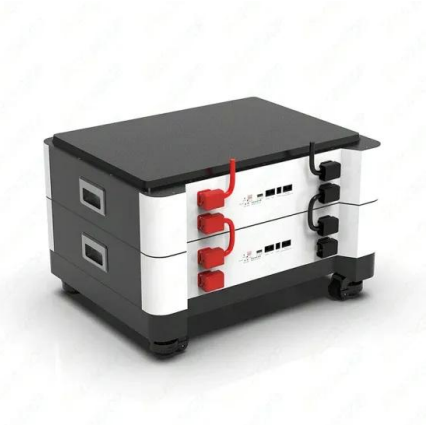


Solar farms can eat up farmland--but 'agrivoltaics' ...

Infrastructure Minister Chris Bishop has signalled the process will "make it easier to consent new infrastructure, including renewable energy". We advocate a suitable option for New Zealand lies in "agrivoltaics"--using agricultural land ...

Agrivoltaic Systems for Aotearoa New Zealand

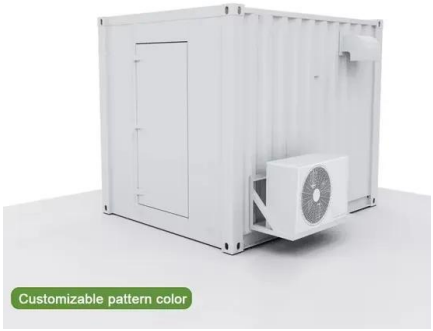
This short communication investigates the potential opportunities to develop such systems by focussing on the mentioned, more technical factors and considering the aspects of the agrivoltaic technology together with agricultural production in Aotearoa New Zealand - to pave the way forward for the implementation of appropriate agrivoltaic



Agrivoltaics

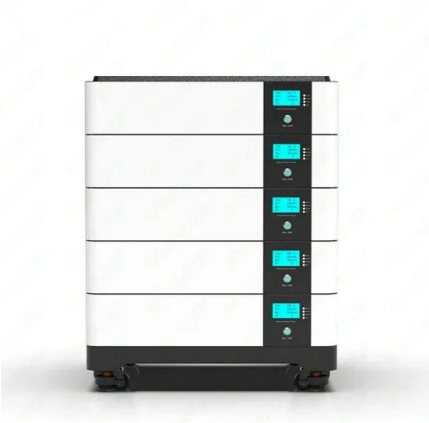
Sheep under solar panels in Lanai, Hawaii. Agrivoltaic practices vary from one country to another. In Europe and Asia, where the concept was first pioneered, the term agrivoltaics is applied to dedicated dual-use technology,

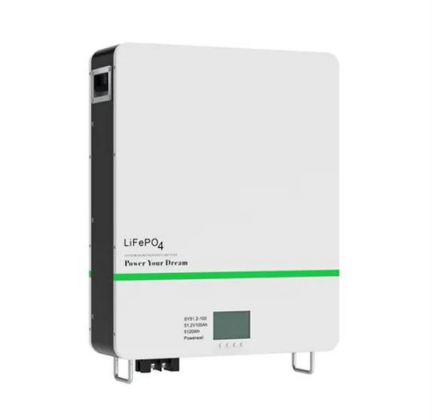
generally a system of mounts or cables to raise the solar array some five metres above the ground in order to allow the land to be accessed by farm ...



Agrivoltaic, a Synergistic Co-Location of Agricultural and Energy

Agrivoltaic systems, which consist of the combination of energy production by means of photovoltaic systems and agricultural production in the same area, have emerged as a promising solution to the constraints related to the reduction in cultivated areas due to solar panels used in agricultural production systems. They also enable optimization of land use and ...





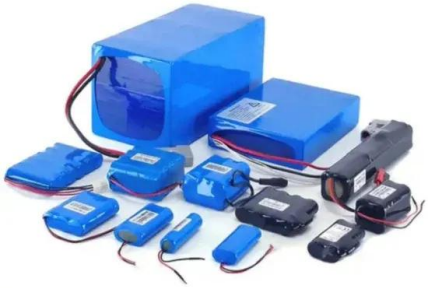
Agrivoltaic Systems for Dairy Farming in Aotearoa New Zealand: ...

Large areas of livestock farmland in Aotearoa New Zealand are deemed suitable for the implementation of agrivoltaic systems that combine effective agriculture production and solar photovoltaic electricity generation.

A Review of Agrivoltaic Systems: Addressing Challenges and

Agrivoltaics is a relatively new term used originally for integrating photovoltaic (PV)

systems into the agricultural landscape and expanded to applications such as animal farms, greenhouses, and recreational parks. The dual use of land offers multiple solutions for the renewable energy sector worldwide, provided it can be implemented without negatively ...

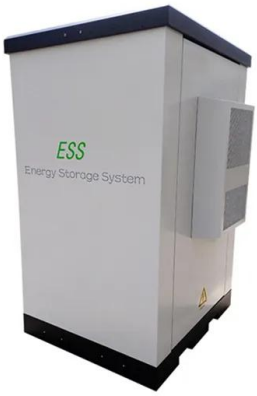


Agrivoltaics: Integrating Solar Energy Generation with ...

The objective of this study is to provide further insights into open-field agrivoltaic system configurations and their potential implications for livestock farming in the context of Aotearoa New Zealand, particularly the Canterbury region. Over half ...

Agrivoltaic project set to become New Zealand's first utility-scale

New Zealand government-owned Genesis Energy and renewables partner FRV Australia have purchased an advanced 52 MW agrivoltaic solar project on New Zealand's South Island. If the project meets its 2024 operational target as anticipated, it will be the country's first utility-scale solar farm.



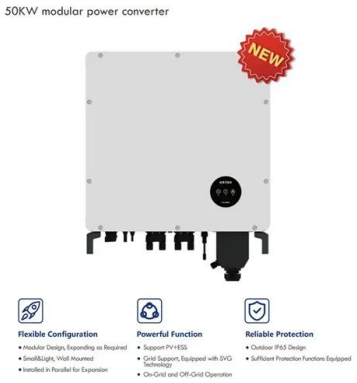
Solar farms can eat up farmland--but 'agrivoltaics' could mean the ...

Infrastructure Minister Chris Bishop has signalled the process will "make it easier to consent new infrastructure, including renewable energy". We

advocate a suitable option for New Zealand lies in "agrivoltaics"--using agricultural land for both renewable electricity generation and farming. Addressing concerns over land-use change

Trina Solar powers New Zealand's largest solar farm with ...

Additionally, ample space between panel rows and a 6.5 foot tracker height facilitates agrivoltaic farming, allowing solar energy generation alongside agricultural activities. including modules, trackers, and energy storage systems - to advance New Zealand's zero-carbon future." Gary Holden, Managing Director of Lodestone Energy states



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