

Solar Powered Robots Brighten The Day For Cows

CHALLENGE

Install a safe, low voltage solar system suited to a wet environment with 24/7 reliability that doesn't pose any disturbance to cattle.

SOLUTION

The Enphase Microinverter System delivers maximum output whilst keeping voltage below 48 V DC, all with IP67-rated hardware.

RESULT

7% greater yield and a failure-resistant architecture achieved through the Enphase Microinverter System.



“DC systems, even when optimised, have a single point of failure which some customers just can't risk. Enphase's architecture means it pretty much never goes down.”

— Bernie Dombroski
Managing Director
30 North

The most high-tech form of dairy farming, robotics, requires the most economical and intelligent energy to match. At the Hexter Family Farm, ROI goes hand-in-hand with cow health and happiness, so the solar system didn't just need to impress management, it needed to win over their four-legged friends.

Solar helps robots help cows

Meet the “SmartShed”, a converted herringbone cow shed powered by robotics on the Hexter Family Farm in Morrinsville, New Zealand. Outside of milking times from 4-8am and 4-6pm, the robots labour diligently to keep the cows clean, comfortable and happy with automated brushing stations, individual health monitoring and well-maintained feeding systems. This union of moo and machine is part of a wave of high-tech dairy farming solutions that are providing farm owners across Australia and New Zealand with strong returns and the ability to operate during traditionally labour-short periods in winter. However, despite its advantages, robotics require a considerable amount of energy, the cost of which will only become more of a burden as energy prices continue to rise.

But on the bright side, with solar PV, the Hexter family realised that they could not only cut costs, but also provide a safe and comfortable environment for its cows. Approved by Worksafe New Zealand, solar installer 30 North began its work on a 10kW installation. 30 North knew they would have to make the most of the limited roof space available with the aim being to generate as much solar power as possible. They chose the Enphase Microinverter System for its superior performance in low light conditions and its ability to maximise the output of individual solar modules.

“We don’t play the guessing game. We don’t over promise. That’s why we offer only the highest quality systems to our customers.” said Bernie Dombroski, Managing Director of 30 North.

Microinverters are big on safety

With milk production negatively affected by each cow’s nervous reactions to sparks and sounds, the safety and reliability of the farm’s electrical system is vital to productivity. Not only was it essential that the solar PV system be low voltage AC but, also the farm’s very heavily metallated and wet environment meant that only the safest solar system would be suitable. With an all-AC system and detailed monitoring and pre-emptive maintenance system, Enphase’s smarts guaranteed 30 North and the Hexter family peace of mind.

INSTALLATION SUMMARY

Client **Hexter Family Farm**
Location **Morrinsville, New Zealand**
Completion Date **August, 2015**
Installer **30 North**
System Size **10 kW**
Microinverters **Enphase M215**
Modules **CS6P-255P Canadian Solar**

Smart Solar + Smart Storage

Following the success of their initial 10kW system, the Hexter family farm is looking to install Enphase AC Battery storage to let their solar work 24/7 alongside their robotics. The Enphase Storage System means a whole new world of possibilities for people who were previously only consuming half the power from their solar systems, unable to store it for use in the evening. Until now.



With Enphase, each solar module provides enhanced ROI for the robotic farm without the dangers of cumulative voltage inherent in all string inverter systems.

About Enphase Energy

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

Learn more about the benefits of the Enphase Microinverter System. Visit enphase.com/au