

CASE STUDY

Dairy Farm

Over 1,000 head of cows producing 30,000 litres of milk per day

Objectives

- *Significant reductions of energy costs*
- *On-site generation*
- *Energy efficiency*
- *Reduction of carbon emissions*



Industry

Agriculture / Industrial

Technology

Battery Storage System to work in conjunction with existing PV system

- RI-ENERGYSET-50kW-100kWh BESS

Operation

AC-Coupled (not directly connect PV), Self- Consume with off peak charging.

Equipment on site

- Existing 150kW PV Array with 3no Grid Tied Inverters
- G100 50kW Protection relay and contactors for inverters (PV & BESS)
- Back-up generator with ATS

Challenge

The client is one of Scotland's largest dairy farms with a heard of over 1000 cows which produces up to 30000 litres a day. Based in the Scottish countryside, the site has a large existing solar installation.

The farm operates 24hrs a day, 365 days a year. The farm was predominately looking to maximise its on-site generation to provide cost savings as well as reducing its impact on the environment. Reducing exported energy by storing it for high demand periods.

Additionally, they wanted to charge from the grid overnight and then run the early milking shift from BESS, taking advantage of the cheaper tariff.

Solution

After a full and thorough site survey of the site requirements and analysis by the solar installer they recommended the installation of a 50kW/100kWh RI-ENERGYSET (BESS) from Rayleigh Instruments.

Operation

The BESS system is pre-configured to charge off-peak and discharge during peak load period as well as charging from excess PV generation that would normally have been exported back to the grid. 200kWh is used daily from this system alone.

Fully remotely monitored using our market leading platform **rayleighconnect™**.

Results

The Rayleigh Instruments battery unit, has enabled the site to maximise its on-site renewables through the process of excess generation storage and peak shifting, which provided a 24% reduction in energy costs.



All in one 3 Phase outdoor
battery and inverter cabinet -
50kW/100kWh