Electric Ireland – Solar PV for Dairy Farms

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Agenda

1. Introduction to Electric Ireland
2. Electric Ireland & Solar PV
3. Focus on rooftop solar for dairy farm

1. INTRODUCTION

~1.3m Residential Customers

1.19m Electricity (~50% market share)
140k Gas (~20% market share)

~90k Business Customers

~ 32% Electricity market share
~16% Gas market share

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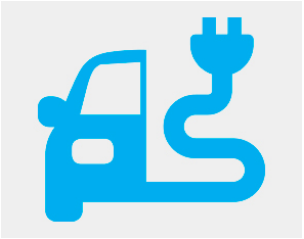
More than Electricity & Gas

Nest Thermostat

Climote

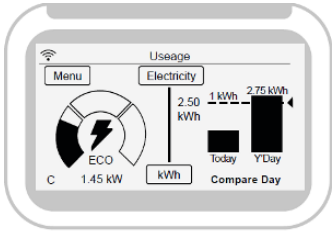
Honeywell Evohome



Home Charger

Solar PV & Battery

Boiler Service, Repair & Replacement



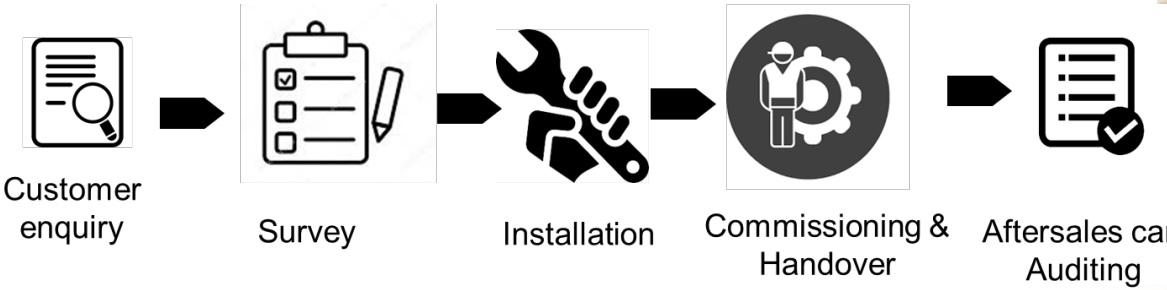
Smart Pay As You Go Electricity Meter

Digital Capability

2. ELECTRIC IRELAND & SOLAR PV

Electric Ireland track record with Solar PV

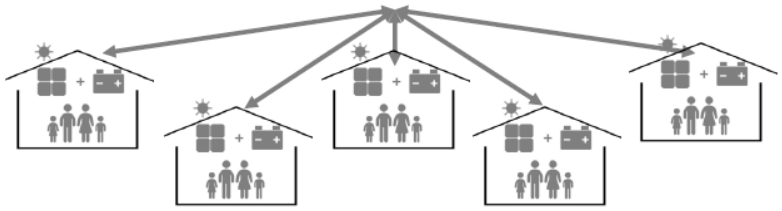
- Installing Solar PV since 2016
- Nationwide
- End to end service
- Also installing battery storage solutions
- Highest quality products and installation standards
- Health and safety a priority at all times
- Regular audits
- Competitive prices and interest free payment plans



Constantly Innovating in Solar PV & Storage

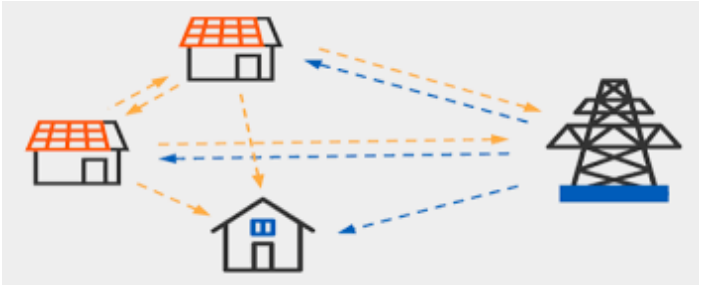
- Emerging business models being worked on and piloted by Electric Ireland – keeping customer needs at the centre of what we do

Virtual Power Plant (VPP)



Aggregation of electrical loads in homes and businesses to provide flexibility to electricity system for reward to customers

Peer to Peer Trading



Role out of smart meters will allow for new propositions to customers

- Watch our video on our exciting StoreNet project in Ballyferriter

https://www.youtube.com/watch?v=inLaZK8EByw

2. SOLAR PV FOR DAIRY FARM

Learnings from Trial

- Dairy farms have high energy usage which peaks twice a day at milking time
- PV generation is peaking at mid-day when demand is low
- Battery storage is necessary to best utilise PV generation
- Excess PV can also be diverted to heat water
- For maximum efficiency systems should be designed to minimise export to the grid
- Safety issues unique to farms
- Broadband issues on many farms. SIM routers needed for comms.

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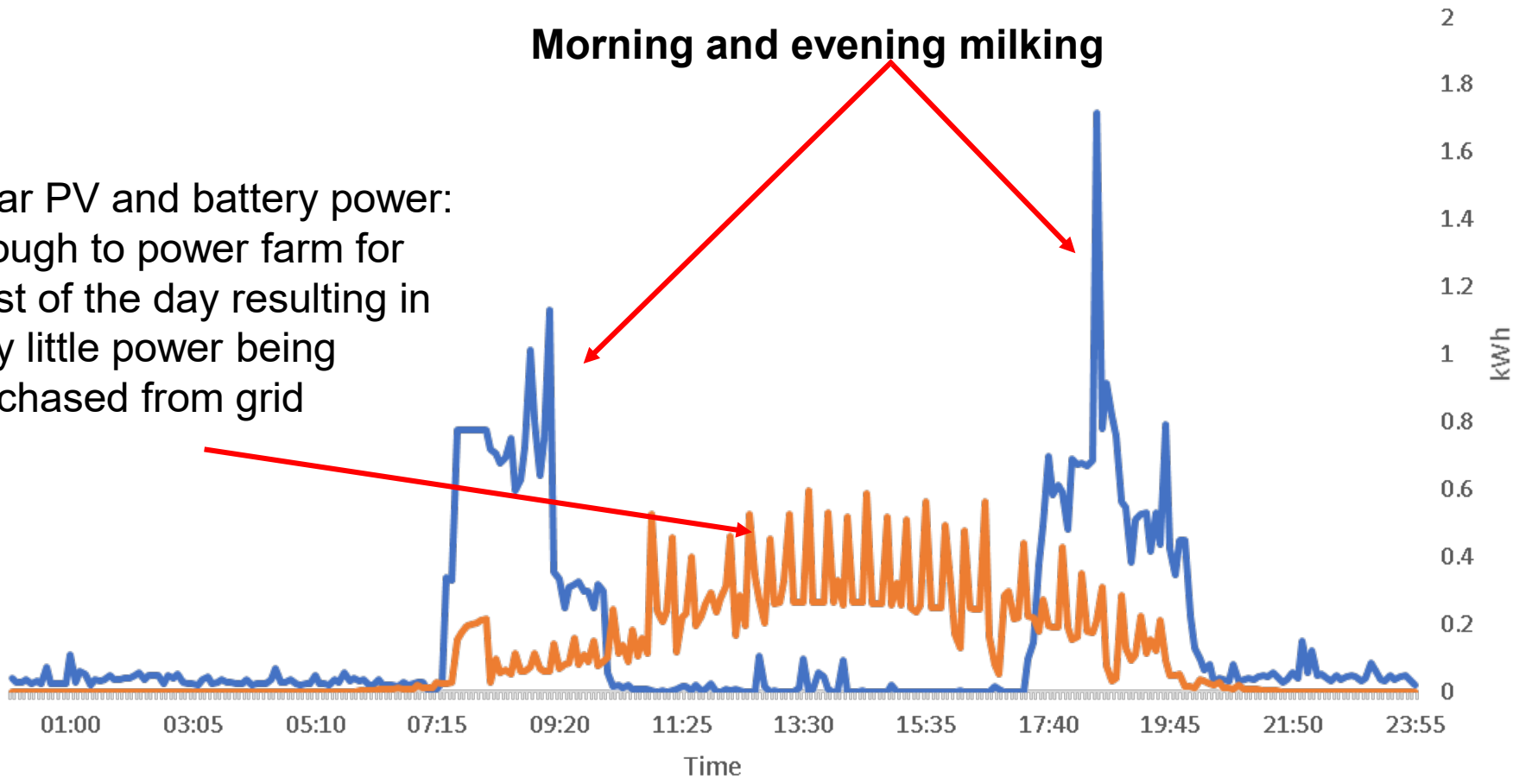
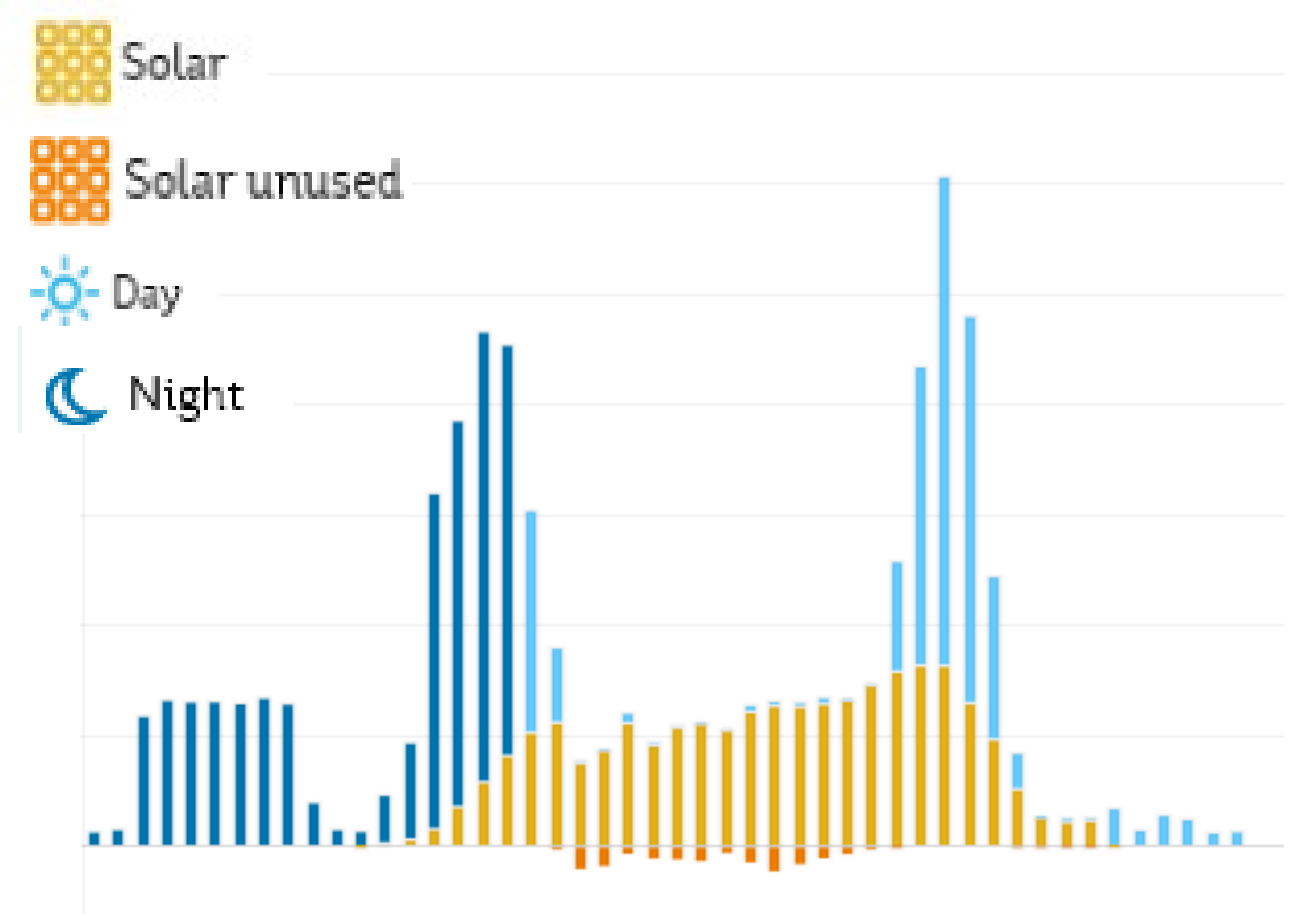
Solar PV Generation vs Electricity Demand

Solar PV and battery power: Enough to power farm for most of the day resulting in very little power being purchased from grid



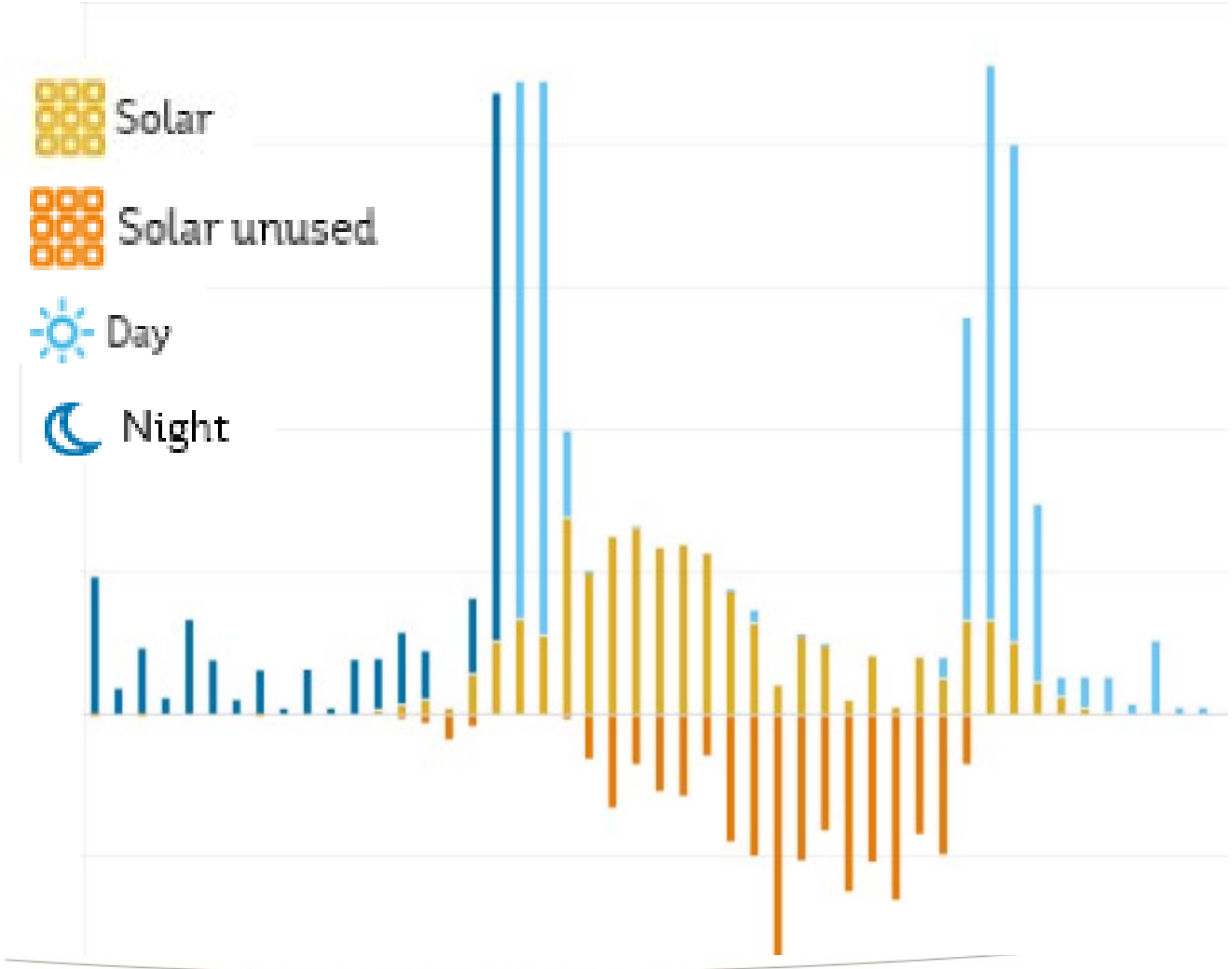
Dairy Farm – 6kWp Solar PV – 5kWh Battery (DC) – July



During July:

- Imported from grid 1730kWh
- Solar generated 679kWh
- Energy exported 30kWh (4%)
- Energy sent to hot water tank 104kWh

Dairy Farm – 6kWp Solar PV – No Battery – July



During July:

- Imported from grid 1630kWh
- Solar generated 621kWh
- Energy exported 155kWh (25%)
- Energy sent to hot water tank 285kWh

Opportunity for Solar PV in Dairy Farms

- Approx. 18,000 dairy farmers in Ireland
- 6kWp with or without 10kWh battery is a good easily implementable solution for typically sized dairy farms
  - 20 panels, 32m^2
- Benefits:
  - reduce energy bills for farms + hedge against energy inflation
  - Reduction in farm CO^2 emissions
  - Solar PV and battery tax deductible
  - Grants available through TAMS
  - Panels come with 20 year warranties. Low maintenance.
  - Payback typically 6-8 years

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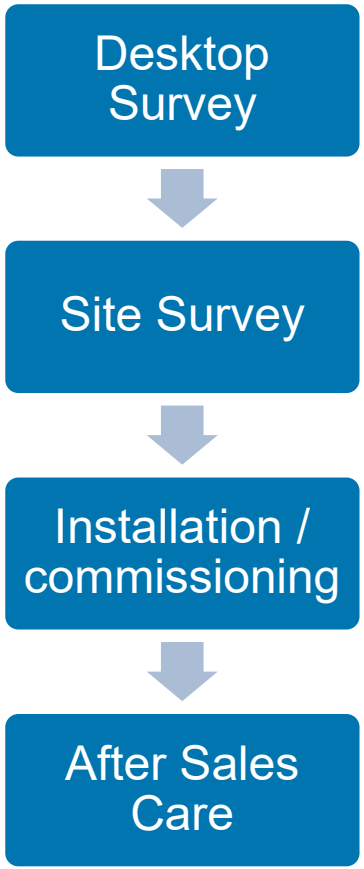
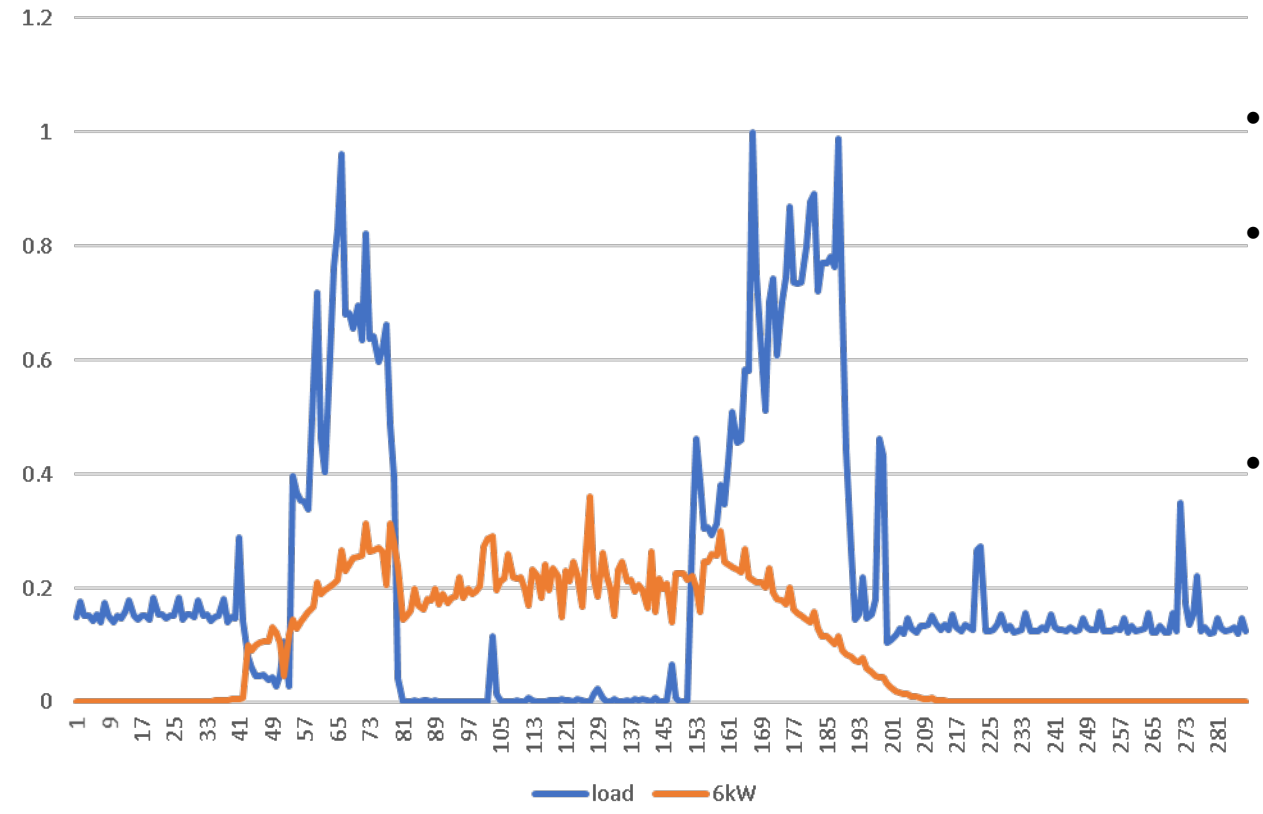
The customer journey



- Done remotely to see farm layout, roof sizes, aspect etc. to establish viability for specific location
- Visit by engineer to check existing electrical installation, to assess specific design requirements, if upgrade works required, check for health and safety hazards, check roof condition etc.
- Typically done over 3 days at times to minimise disruption to the working farm. Scaffolding required. Health & safety a priority.
- Low maintenance solution. Energy monitoring available to see solar generation. 20 year warranty for panels, 10 year for battery.

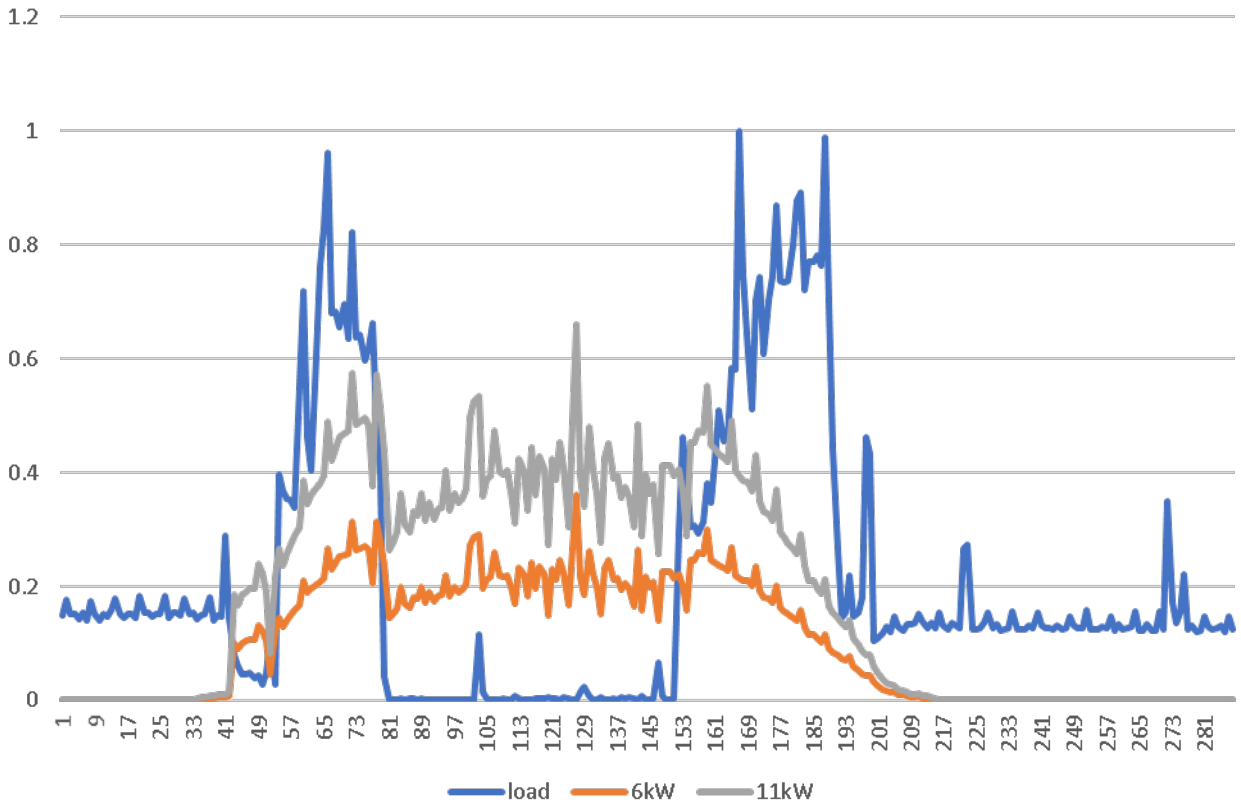
Case for larger arrays?



- 6kWp + 5kWh battery
- Sufficient to power farm for most of the day
- Minimises export to grid

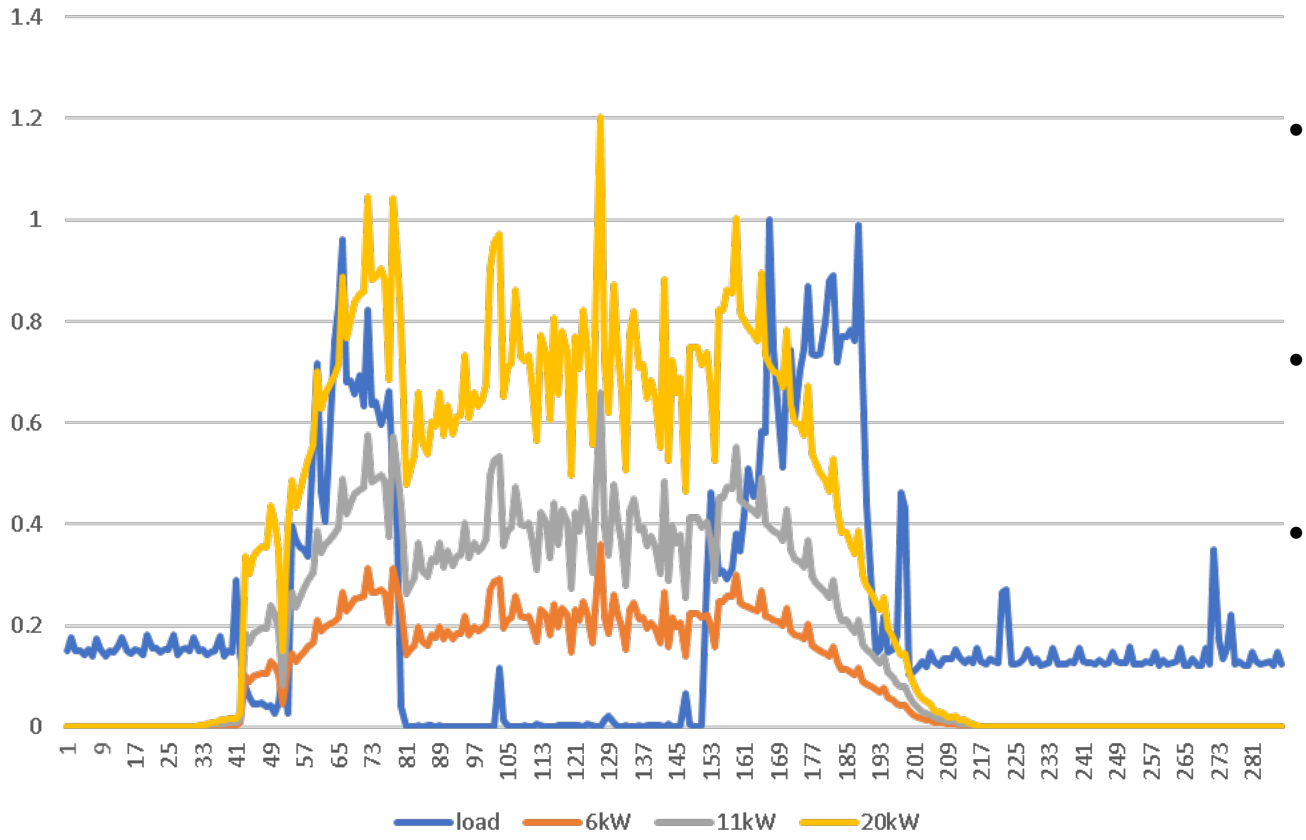
load 6kW

Case for larger arrays?



- Larger battery required (15kWh)
- Planning permission required
- If single phase supply, approval required from ESBN

Case for larger arrays?



load 6kW 11kW 20kW

- Likely to be a lot of export even with larger battery
- Planning permission required
- Approval required from ESBN

Opportunity for partnership with co-ops and Ireland's dairy farmers

- Opportunity for co-ops to partner with Electric Ireland to deliver Solar PV + Battery solutions to co-op members

- Electric Ireland have proven track record in Solar PV + Battery installations and offer end to end to solution

- Partnership with co-ops with opportunities for:
  - Co-branding
  - Discounts for co-op members
  - Option for payments via milk cheque

Electric Ireland looks forward to working with you in the future!

END