



VEST ENERGY

# Revenue Forecast



2024



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# About VEST

## VEST Energy: Background

VEST Energy was founded in 2020, with a mission to **leverage the founding team's extensive energy market expertise to decarbonise the grid**, with a focus on batteries. Today we optimise a wide range of batteries across many counties of the UK.

## How we help

VEST brings the **extensive energy market knowledge** normally reserved only for much larger gigawatt-scale battery systems to make SME and industrial scale batteries economical.

We do this with our **advanced battery optimisation** approach. While a simple charge at night and discharge in the day is often called 'optimisation' by other providers, our ability to achieve the full range of revenues available to batteries can significantly improve their economics and save you far more money on your bills.

## Meet the Team



### Aaron Lally – Founder & CEO

Aaron founded VEST Energy after more than a decade trading UK and European electricity for industry giants like Barclays Capital, Mercuria, and Glencore.



### Jonathan Navon - Chairman

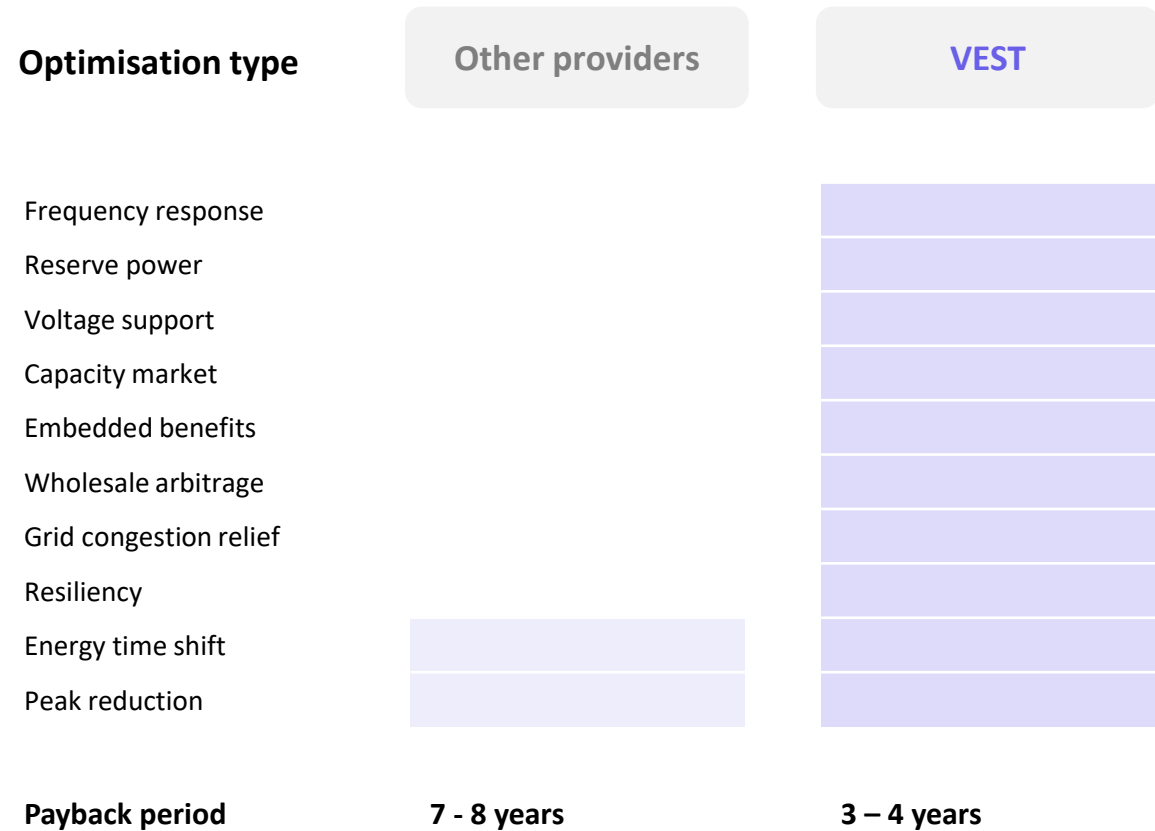
Jonathan is the founder and partner of CF Partners – an energy markets investment company which owns Brook Green Supply and other energy ventures in the UK.

## What does VEST do for me?

Through our fully managed service, we apply advanced optimisation methods across **20+ revenue streams to maximise the returns on your battery.**

While other providers call basic day/night cycling 'optimisation', **VEST brings expertise normally reserved for grid-scale batteries to your business.**

With more revenue generated, the ROI on the battery purchase that you are considering is vastly improved with VEST.



## Why don't all battery providers do this?

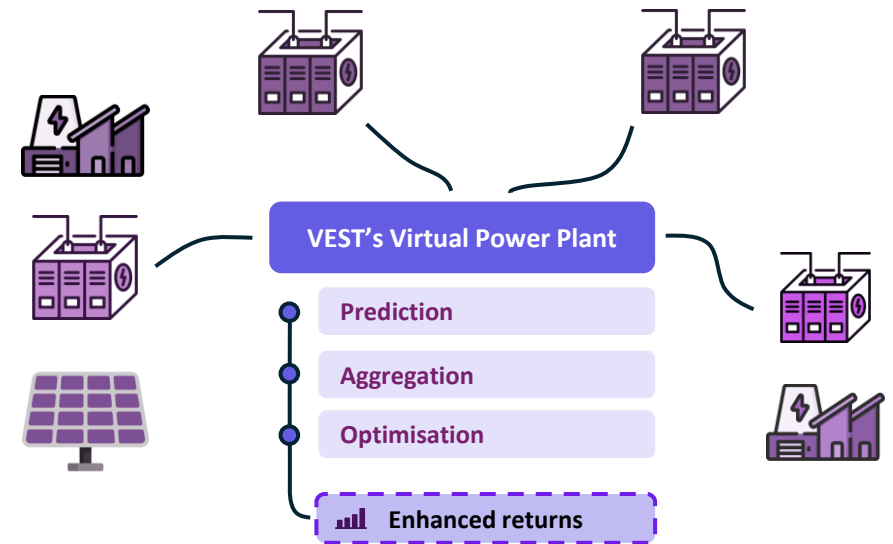
You need extensive energy market expertise to properly optimise a battery; this is outside the skill-set that battery manufacturers and others in the SME / industrial value chain have access to.

## How does VEST do it?

We integrate all the distributed batteries we provide and optimise into one large 'virtual power plant'.

This means that when you buy a battery from VEST, we integrate it into this virtual power plant that we can optimise in an aggregated manner.

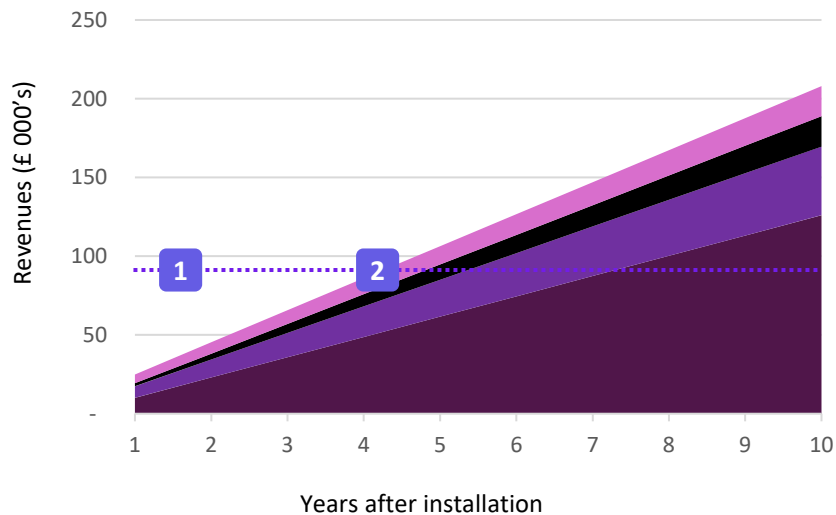
This gives your smaller battery access to all the economies of scale of being part of our larger network



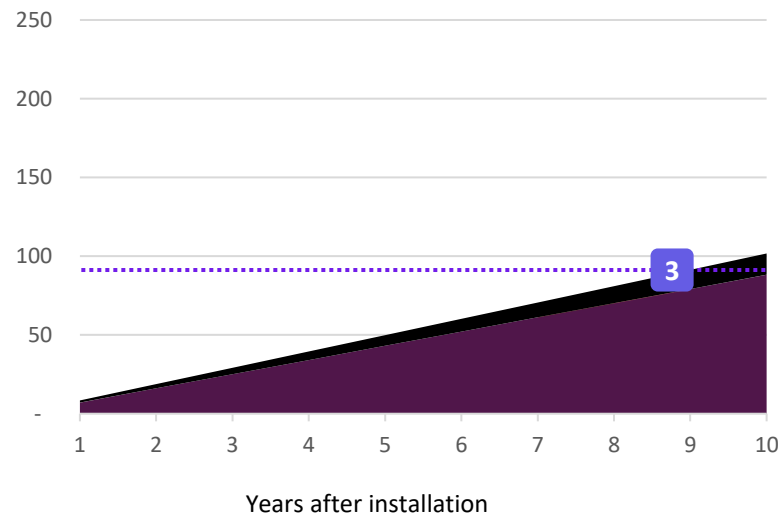
## Case study: a manufacturer in the East Midlands

The customer was purchasing a solar installation when this incremental battery revenue forecast was undertaken.

### Battery with advanced optimisation



### Battery with basic optimisation



- Load shifting moves electricity usage to different times of day to save money.
- Wholesale trading: trading energy in bulk on the electricity market.
- Distribution use of system savings: savings on charges otherwise payable for using the electricity network.
- Ancillary services: extra government-provided payments for helping balance the power grid.

## Analysis

- 1 Battery cost: £94k
- 2 VEST-optimised payback: 4y
- 3 Basic optimisation payback: 8y

VEST's advanced optimisation gives this site (and all sites) access to:

- ✓ More load shifting income through superior battery hardware, cycling up to twice per day.
- ✓ Higher corresponding DUoS.
- ✓ Wholesale market revenues with 24/7 trading.
- ✓ Ancillary services revenues from government-issued flexibility contracts.

**This cuts the payback period significantly.**



Type	Description	Revenue stability
Load shifting	<b>Shift the load to a more profitable time</b> and stay within your export limits.	<b>High</b> This is based on your site's consumption patterns.
DUoS savings	DUoS and other <b>transmission costs can constitute up to 25% of your bill</b> . We use your battery to cover site demand and reduce imports during peak periods to reduce these charges.	<b>High</b> These correlate closely with your load shifting.
Wholesale trading	VEST's <b>proprietary algorithmic trading models</b> buy when power is cheaper (storing it in your battery) and sell when it's higher (discharging it from your battery) on a 24/7 basis.	<b>Medium</b> Increasing levels of renewables create price volatility, which VEST captures for you as profit.
Ancillary services	VEST enters your battery into <b>government-provided long-term contracts in the capacity markets</b> to help balance the grid, as well as into daily ancillary service tenders. These come with complex constraints that require VEST's expertise to maximise associated revenues.	<b>High</b> Some such contracts have 15 year terms, and others are for as little as one year.



Up to 79% of batteries' revenues come from streams that are stable over time when VEST's advanced optimisation is applied.

## Buying a BYD battery from VEST

BYD are the world's largest battery manufacturer and VEST's exclusive partner. With a BYD battery bought from VEST, you can benefit from:

- **Advanced optimisation readiness**, with built-in hardware that allows VEST to apply its advanced optimisation methods.
- **Fire suppression** designed to align with your existing business insurance.
- **European distribution**, so parts are always easy to access.
- **Lithium iron phosphate chemistry**, for superior stability and safety.
- **No cobalt or nickel in the batteries**, which frequently come with ethical sourcing issues.

## Unit sizes available

### As a battery cabinet

< 100kW

100kW

200kW

### On a 20ft skid (can be containerised)

400kW

600kW

800kW

### Multiple 20ft skids / containers

1MW

1.2MW

...

25MW

### Duration

2h

4h

6h

8h

**Sizing your battery:** VEST provide a full revenue analysis as part of your quote, in which we find the optimal battery size for your site based on multiple factors.

## Key stages



Your business is looking to save on energy bills



Solar provider: desktop analysis of your site

VEST: advanced battery revenue analysis



Solar provider or VEST: G99 application submitted



Full site evaluation performed & order placed



Technical implementation

We work with your solar provider to ensure you receive the optimal battery size, and **provide a detailed revenue forecast**, showing you exactly how your battery will generate income. Our technical team can undertake the 'G99' grid application for you or work with your solar provider to do it.

If you've already done a G99 and are considering a battery, **we are experienced with discussing the benefits of your battery with your distribution network operator** and can often get a green light to proceed even when it wasn't included in the G99.

## Customer challenges

A manufacturing plant in the South of England wanted to reduce their electricity bills, move to net zero through greener electricity consumption, and to **solve grid constraint issues** they were suffering on site.

Given the high usage on site, reducing demand and energy costs was crucial for the site. The site qualified for TRIAD payments historically which allowed the site to be paid a significant sum for reducing demand at peak times on the grid.

The site is able to consume greener energy and also operates against an existing grid constraint to allow the site to maximise onsite consumption without restriction from the grid.

## VEST's solution

VEST Energy assessed the site's viability and worked with the manufacturing plant to understand the revenue available and to select the correct technology for a 2.5MW facility. This solution was tailored to optimise energy use and cost, to **earn significant TRIAD payments**, and support the manufacturer's sustainability goals.

## Site information



2.5MW / 2.5MWh battery



Manufacturer



South of England

## Financial performance

- ✓ **£1.6m** of revenues over the past 6 years.
- ✓ At today's battery prices, the battery would have made **5x the initial investment** and it would have **paid itself back in 9 months**.



*A great level of service and VEST go above and beyond to operate and maintain our battery.*

## Customer challenges

The business **wanted to achieve net-zero emissions** and align with the UK's carbon neutral goals. The business wanted to consider which technologies could help them do this while also presenting an attractive business case.

## VEST's solution

VEST ensured that the site could **participate lucratively in the local constraint markets** (a new and increasingly import revenue stream for behind the meter batteries), an interesting revenue source especially given the constraint zones across Wales with the inability to transport power across the country due to increased connection of renewable generation.

VEST Energy assessed the mineral sites needs and recommended a 4MW battery storage unit. This solution was tailored to optimise energy use and cost, reduce grid reliance, and support the mineral site's sustainability goals.

## Site information



4MW / 4MWh battery



Mineral site



Wales

## Financial performance

- ✓ **£2.8m** of revenues over the past 5 years.
- ✓ At today's battery prices, the battery would have made **4.5x the initial investment** and it would have **paid itself back in 12 months**.

## Customer challenges

A chemical processing plant based in the North of England faced high energy bills and the need to make their electricity supply more green.

Despite **having renewable generation on site (solar and wind)** that work effectively, they independently chose a sub-standard battery storage system to be installed on site. They selected the incorrect technology type and as a result, struggled to integrate the battery effectively onsite and suffered significant downtime. They **came to VEST to mitigate operational issues** and maximise revenue from the battery unit.

## VEST's solution

After taking control of the site, VEST integrated seamlessly with the unit and reduced downtime by 29%, with the revenues significantly increasing as a result of correct optimisation of the battery that **maximised revenues while protecting the health of the battery unit.**

## Site information



5MW / 5MWh battery



Chemical plant



North of England

## Financial performance

- ✓ **£760k** of revenues over the past 2.5 years.
- ✓ At today's battery prices, the battery would have **paid itself back in 2.5 years**, astonishing given the operational and technical failures of the unit.

# Site analysis

### The site

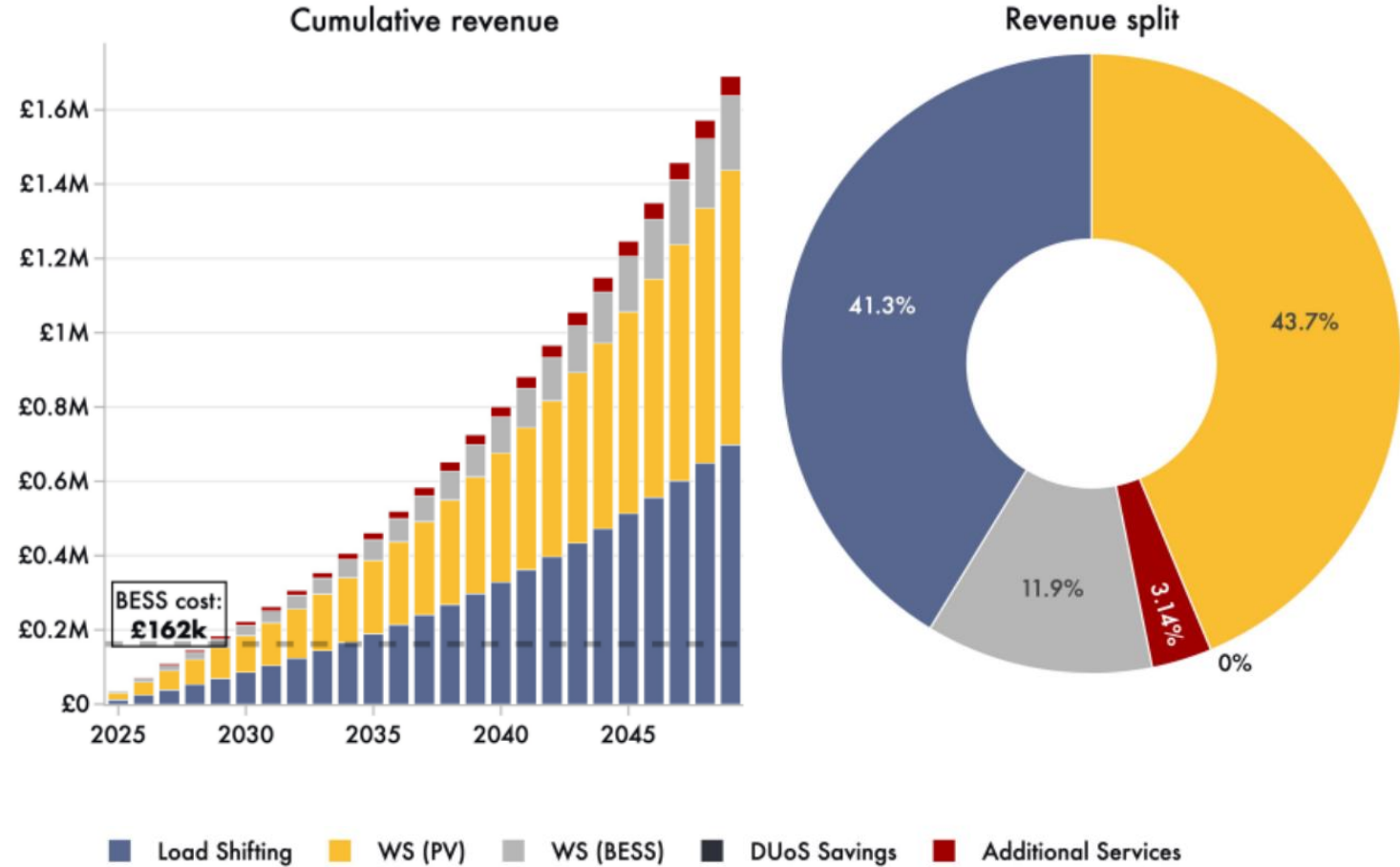
are seeking to install **520 kWp** of solar and a battery energy storage system ('BESS') on a site near

The BESS size that optimally maximises overall returns across the period in consideration while maintaining a reasonable payback time is **200 kW / 932 kWh**.

### Economic summary

This BESS would **pay itself back in 5 years** with VEST's advanced optimisation. Revenues from intelligent load shifting alone would result in a 10-year payback.

BESS cost	Total revenue	Net profit	IRR
£ 162,000 <small>+ VAT</small>	£ 1,690,000	£ 1,530,000	25.5 %



Note that we have used a Typical Meteorological Year for the region in modelling solar returns.



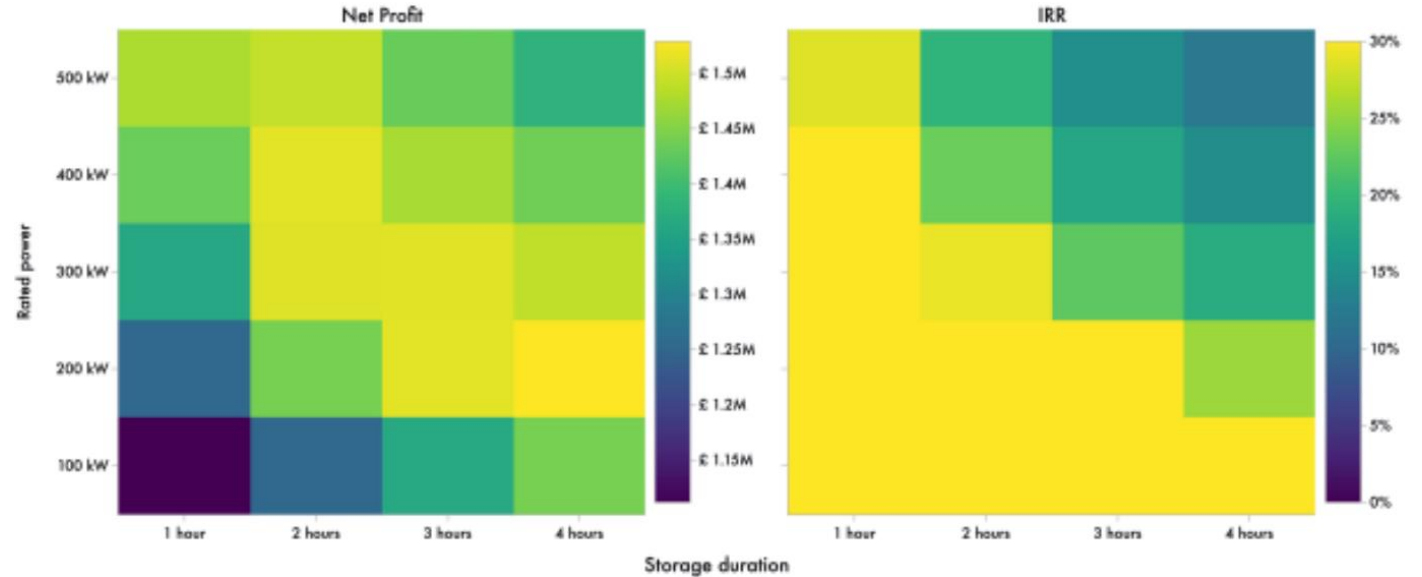
## Battery options

### The 'right' size of system

Smaller systems tend to yield a greater IRR but provide lower absolute levels of profit over the course of the battery's lifetime.

The 'right' size of BESS will depend on the customer's appetite for levels of profit, speed of payback, and capital deployment.

### Net profit / IRR heatmaps



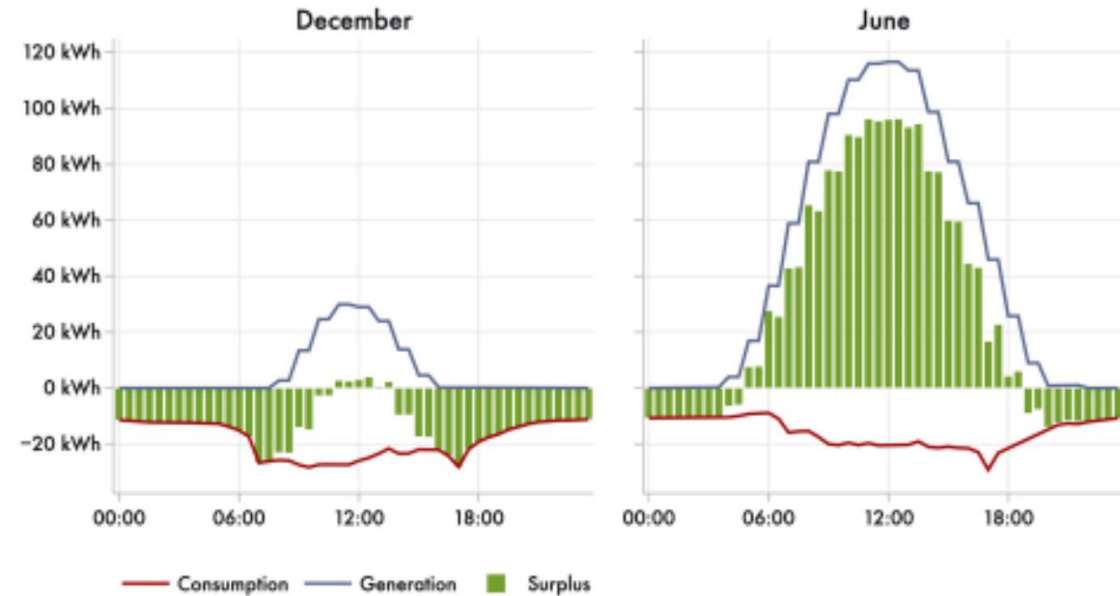
## What makes us confident about these numbers

### We simulate the battery as if we were operating it...

This means that we analyse down to a half-hourly granularity across the full 25 years of the forecast provided.

We account for every consumption and generation profile based on solar patterns on a given day of the year and on the site's consumption data provided.

We use the profile of half-hourly historical wholesale prices applied to a longer-term price forecast.

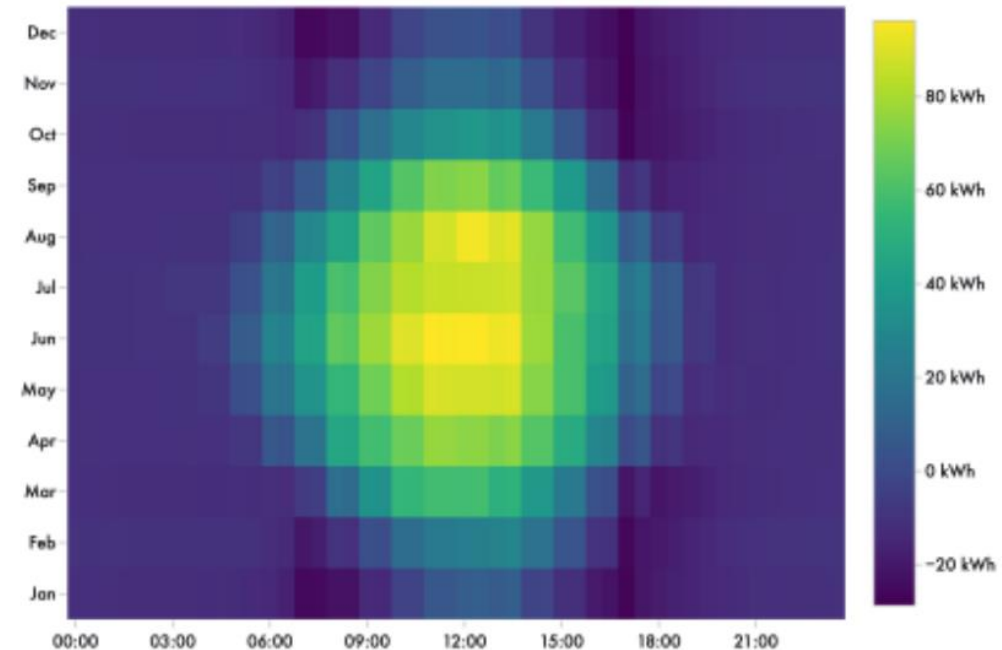


## What makes us confident about these numbers

### We take full account of the solar surplus available to the BESS

Included in our forecast is the solar surplus which is used to charge the battery.

We don't use any high-level averages – we model this down to a half-hourly level.



## What makes us confident about these numbers

### We don't do basic load shifting – we do it strategically

In practice, this means that instead of exporting cheaply, you are using the battery to offset far more expensive imports at the most expensive times of day. We calculate the figures associated with this rigorously.

When we cover site demand, we cover it when the wholesale markets would be at the most expensive (unlike the energy management systems used by other providers), using our proprietary forecasting tools based on decades of energy market trading expertise.

This means that we extract as much money as possible from both load shifting and wholesale market trading with the double peaks in the wholesale markets.

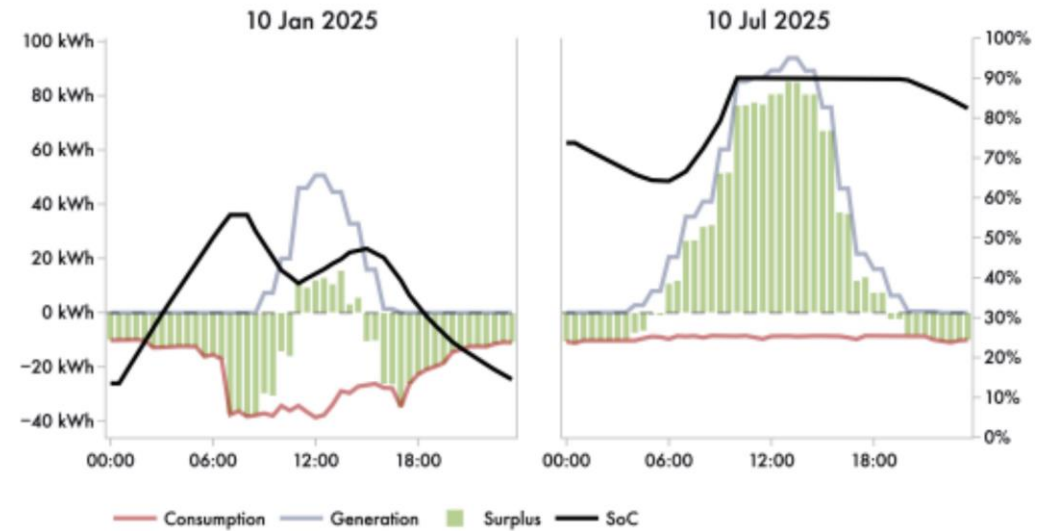


## What makes us confident about these numbers

**We do multi-constraint simulations to ensure we maximise revenue and preserve the health of your battery**

We don't just programmatically charge fully in the night – we do this based on a full, multi-constraint optimisation analysis and simulation of the day to come.

Our algorithms take into account all the constraints of the site, our proprietary day-ahead half-hourly pricing forecasts, and solar generation and site load forecasts.



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