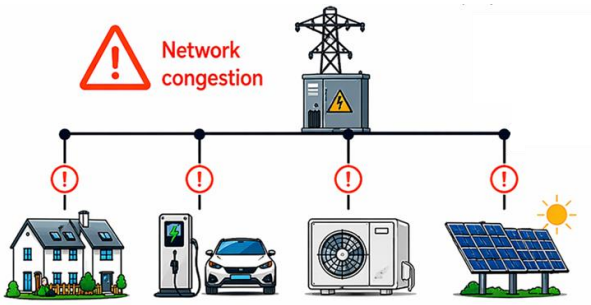
Community-scale battery storage for a net-zero grid

Battery storage is critical for **affordable, resilient, net-zero electricity** – by storing up excess renewable power when abundant and deploying it when we need it most.

Community-scale batteries also **support the local grid,** which is struggling with increased pressure from EVs, heat pumps and rooftop solar.

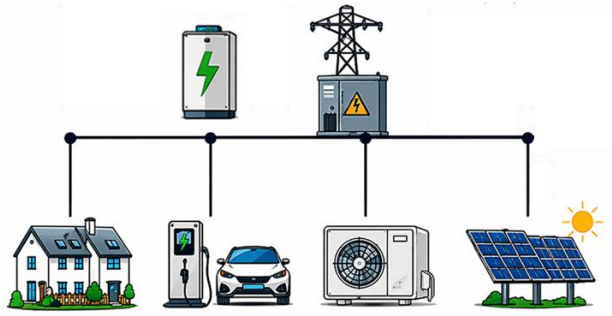
Network today



National-level flexibility signals can cause **unintended local constraints**

Growing interest in **Smart Local Energy Systems**, but adoption is limited

Network with local battery storage



Envol's community-scale batteries **proactively help the local grid**

Community batteries can form the heart of **Smart Local Energy Systems**

Energise Sussex Coast case study: Community Batteries at new housing development

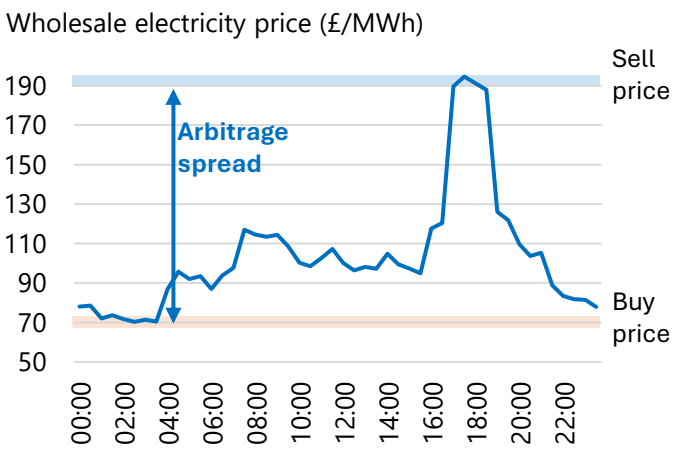
Planned installation

- **1.4MWh** total storage capacity
- Serving **200 houses** (7kWh per household)
- Installed alongside **700kW rooftop solar**

Expected outcomes

- **~£700k** lifetime community fund contribution
- Reduced burden on **local network**
- **Local energy sharing** to be part of next phase

Existing, mature revenue



New local grid services

- **5-6-year project payback** period, with **~2.5x total project return** across 15 years
- **20 tonnes of CO_2 saved** per site annually, equivalent to 100-120kWp of solar
- Typical installed cost of **~£60k per site**

Community-scale battery storage alongside solar

Battery storage alongside solar helps **optimise how generated power is used**. This means more power is supplied to the offtaker, or sold to the grid when electricity prices are highest. In some cases, systems can also use excess battery capacity to trade power directly with the grid to **generate additional returns**.

Many sites that would otherwise be uneconomical are **viable with a battery**, e.g. where the offtaker has irregular usage patterns or significant solar export.

Case study: Community centre with 100kWp rooftop solar

Without battery: 15yr payback period

200kWh battery: 8yr payback period

Case study: 300kWp solar farm

Without battery: £20k p.a. revenue (assuming 7p/kWh SEG)

100kWh battery: £31k p.a. revenue

300kWh battery: £43k p.a. revenue

Is it always beneficial to install batteries alongside solar?

There is **limited benefit** from connecting batteries alongside solar when the **offtaker consumes most power generated**. In these cases, it is typically better to connect any batteries on a **separate grid connection** for front-of-meter trading.

Community-scale battery storage for local energy sharing

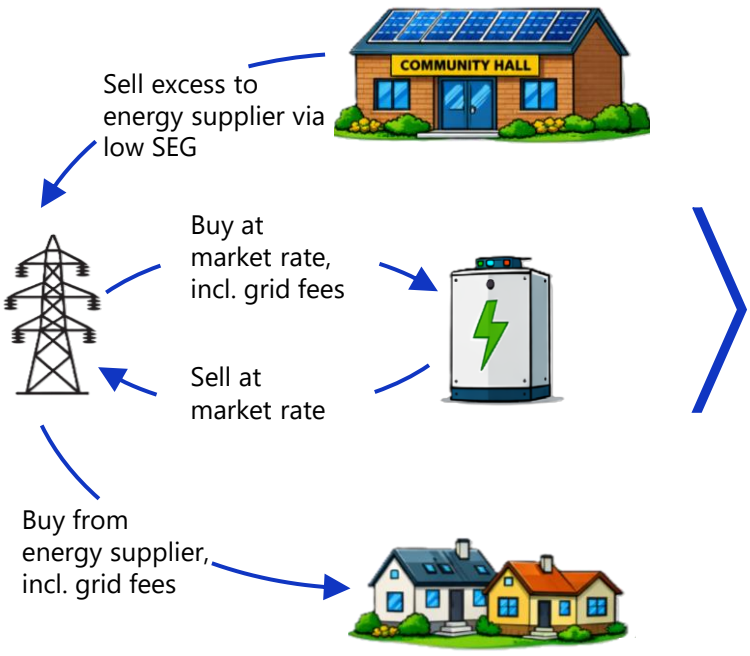
The new P441 Balancing and Settlement Code modification, expected for Summer 2026, will unlock **local energy sharing within a primary substation node**.

This will mean that locally generated power used locally will not have to pay for the network usage further upstream, as it does today - **reducing costs for consumers and giving more back to generators**.

Battery storage (either standalone or collocated with generation) can play a key part in **ensuring these networks operate efficiently** and that **all power generated can be used locally**.

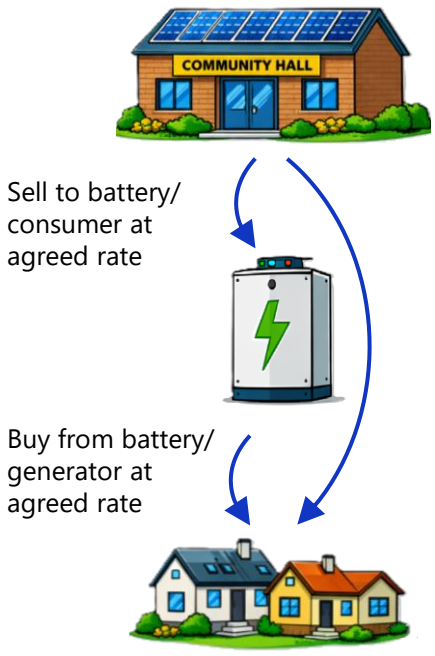
Before

Energy suppliers are paid full price for all power delivered; grid operators are paid as if all power uses their entire network.



After

Energy suppliers are only paid for the power they bring in; grid operators are only paid for the network which is actually used.



Case study: Rugby/ football club solar for the community

Situation

- Rugby and football club each have a large roof for solar, but **limited offtake options**
- They also want to **serve their local community** and become an energy hub

Proposed solution

- Rooftop solar and battery installed on both the rugby club and **power sold to local residents**
- Residents benefit from **cheaper electricity**, delivered **when they need it**

This is one of several possible trial sites under active discussion with Energy Local.