

Welcome



Today's webinar:

The Power of Batteries

Chaired by: Duncan Law Head of Policy and Advocacy, Community Energy England

Speakers:

- Richard Watson, Energise Sussex Coast
- Yang Lu, Envol Energy, delivery partners
- Zach Wishart, Energy4All



Energy Learning Network
Rhwydwaith Addysg Ynni

The Energy Learning Network (ELN)

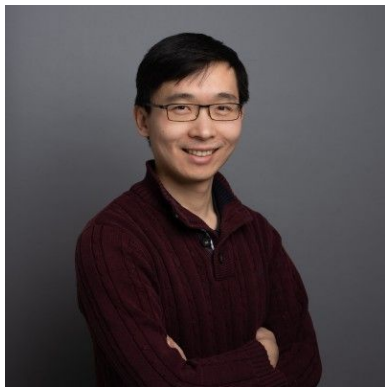


- This webinar is part of the ELN, a UK-wide initiative which provides support for community energy organisations.
- The Energy Learning Network is funded by the National Lottery Community Fund.
- Free insights, events, resources and connections for community energy organisations, alongside mentoring and peer learning opportunities.
- ELN is a collaboration between [Community Energy England](#), [Ashden](#), [Centre for Sustainable Energy](#), [Community Energy Scotland](#), [Community Energy Wales](#), and Northern Ireland's [Action Renewables](#).
- Read more about the programme [on our website](#).



Energy Learning Network
Rhwydwaith Addysg Ynni

Introductions



Yang Lu



Zach Wishart



Richard Watson



Agenda



1. The role of batteries on the electricity grid
2. What do we mean by a “Community Battery”?
3. What is Envol Energy doing to support community-scale batteries?
4. Community Battery operating and financial models
5. Energise Sussex Coast - Case Study
6. Q&A and Feedback

Batteries on the Electricity Grid

Batteries are a crucial component of the net-zero grid



Mostly deployed at
Grid-Scale or Domestic



Cabinet-size battery systems have become increasingly affordable - offering key advantages, particularly for Community Energy

Cost effective + easier grid connections + wide range of financial models

What is a Community Battery?

“A battery system owned by and operated for the benefit of the local community”

While other models exist, such as community ownership of domestic batteries.

For today - we will focus on community-scale battery systems (100kWh - 4MWh)



Department for
Energy Security
& Net Zero

Assessing the case for community batteries

A call for evidence

Closing date: 30 July 2026

Batteries are a new and rapidly evolving area of Community Energy.

- **We don't have all the answers!** Aim of today is to share our ideas and what we've learned.
- Encourage groups to **engage** and **explore** how batteries might be relevant for them
- Encourage **participation** in DESNZ Call for Evidence

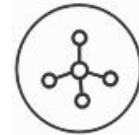
What is Envol Energy doing?

Battery deployments are complex

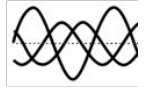
Using our expertise in AI and optimisation - Envol's mission is to help Community Energy adopt and benefit from community batteries



- Site identification and scoping
- Financial modelling and evaluation
- Project management and deployment



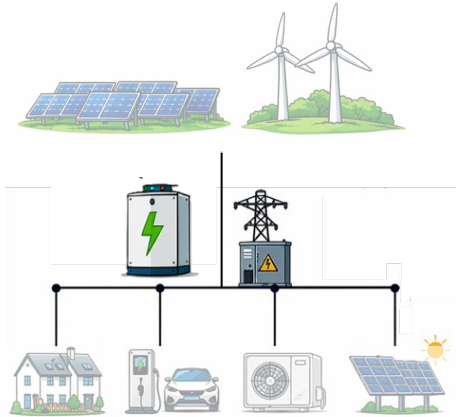
- Smart management of battery systems
- AI optimised trading and operations
- Maximise community benefit from batteries



- Innovating with DNOs to support local grid
- Create new local grid revenue streams
- Enabling other community energy projects

Community battery operating models

Standalone community-owned battery



Standalone battery - sharing power within the community



Integrating with existing community energy sites



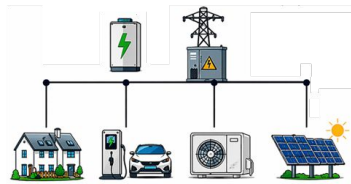
Solar: None/low vs high

Consumption: Low vs high

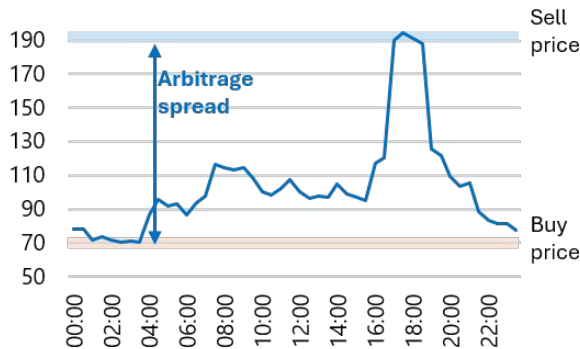
Community battery operating models

Standalone battery - Front-of-the-Meter

- Battery connected on it's own grid connection
- Can be co-located with ground mounted or roof-top solar to increase solar profitability
- Generates revenue from trading energy directly on the grid and providing grid services



Wholesale electricity price (£/MWh)



~ 5 year project payback period - 15 year battery life

20 tonnes of CO₂ saved per site annually, equivalent to 100-120 kWp of solar

Typical installed cost of ~£60k per site for a 250kWh battery system

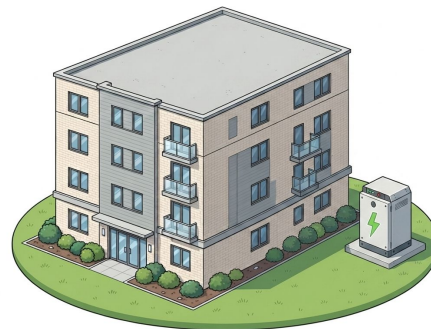
Community battery operating models

Standalone battery - shared community asset

Standalone battery - but able to function like a shared pool of energy storage for households in the community (e.g. P441)



Provides access to batteries for housing which might not be suitable for domestic batteries (e.g. flats, social housing etc.)



- ★ More cost effective to install and maintain vs. domestic batteries
- ★ Provides benefits of batteries + LCTs for low-income and vulnerable energy users

Community battery operating models

- **Large cheap rooftop PV opportunity**

- High Solar generation
- Low consumption

Battery will mainly do export arbitrage, storing low value generation to export into the peak of demand

- On-site usage may be met by battery or a normal import contract.
- Can also do grid trading or flexibility services, especially in the winter, but can be complicated by final consumption levies

Very similar model to a solar farm with storage



Community battery operating models

- **Site struggling with import bills**
 - Low or no solar
 - High consumption, ideally predictable

Battery will do import arbitrage, storing cheap power from the grid to use at peak times.

- Could also do grid trading or flexibility services, but likely to be minor in this case

Is it community energy?



Community battery operating models

- **‘Behind the battery’ community site**

- Low consumption
- Probably no or low solar site
- Relatively large grid connection

Battery will do grid trading, while also supplying the site with energy when required

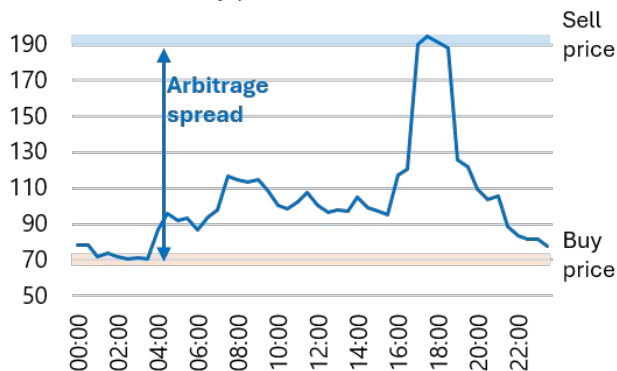
- Grid trading and flexibility are the main role of the battery. Asset metering required to avoid final consumption levies
- Taking over the grid connection in return for supplying some cheap energy
- Behind the meter usage is a minor part of the battery role



Financial Models

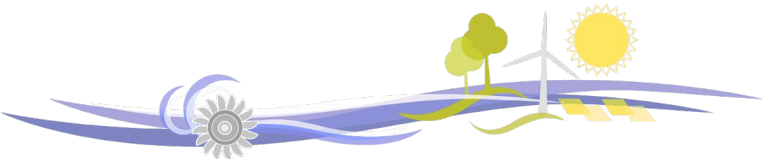
- Export arbitrage
 - Improves as solar PV increases and negative prices become more common
 - Fixed rate solar export PPAs are already reducing in value
 - *Is the increase in income big enough to justify the battery?*
- Import arbitrage
 - Helps sites with little solar potential
 - Can reduce standing charges
 - *Is the reduction from a normal import tariff big enough to give savings and pay off the CapEx?*
- Grid trading
 - Works on import/export price differences
 - Intermittency and high prices tend to benefit
 - *Final demand levies need resolving*
- Flexibility
 - *Is this a main business case?*

Wholesale electricity price (£/MWh)



Financial Models

- Start up risks
 - Difficulties accessing the full revenue stack, flexibility can be challenging to get paid for
 - Consumption levies being charged on import but not paid on export, reduces arbitrage spread
 - Little long term certainty on financial modelling, difficult for share offers
 - Mismatches on income forecasts, battery lifespan and PV project lifespan
- Market development risks
 - Low prices
 - Large scale deployment of storage or demand side flexibility, would cannibalise revenues
 - Smart controls on EV charging, heat pumps etc.
 - Vehicle2grid could flood the market with storage?



Case study - Blackfriars Development

Planned installation

- **1.4MWh** communal battery storage capacity
- Serving **200 houses** (7kWh per household)
- Installed alongside **785 kW rooftop solar**



The year of: **innovation**

This year Energise Sussex Coast has embarked on its most ambitious project yet. This £1.2 million project will fund free solar and community batteries for a new housing development of 200 homes including 130 social homes in Battle.



Blackfriars draft designs HT 2D-Terraced Full Solar PV view

6

1. We fund the solar and community batteries by using a mix of grant funding and community shares.
2. The tenants get free solar electricity (forever!)
3. We generate an Income from selling grid flexibility services provided by the community battery and the electricity that's exported back to the grid.
4. We pay back our community investors
5. Any "surplus" gets put into a community benefit fund which is used to benefit local residents.



This project is part of the Battle Solar Town project which aims to generate 25% of Battle's electricity needs from locally-generated solar electricity.

7

Q&A for our speakers

Please use the Zoom Q&A function. Common talking points and questions to discuss:

How reliable is
battery revenue?

How long do
batteries last?

Safety and
reliability

Raising finance
and bankability

What different
revenue streams are
available and how
easy are they to
access?

Operational
complexity

Feedback

1. Fill out the poll that will appear on your screen.
2. Please fill out our [feedback survey](#) - link in the chat, or follow the QR code.



Call for Evidence



A note to other community energy respondents

You can use this document as guidance for your response. It is very important that you **do not copy and paste** as this devalues both our and your response. It would be possible to say something like, 'I have seen Community Energy England's response to this question and I endorse it'.

If you have suggested additions for CEE's response, please add them in the relevant section. Track changes are enabled. Please sign your contribution if google doesn't do it automatically. You can also add comments by highlighting a bit of relevant text and clicking the speech bubble icon 'add comment'. Likewise sign your comment if google hasn't. Please ensure the text is as near as possible consultation response language. ie is written from CEE's point of view, in full grammatical sentences, makes a case, is evidenced and if appropriate or possible contains a 'Recommendation'. Do cite your own experience or examples.

Colour coding of questions

Red text indicates questions that are targetted at organisations with community batteries (or in some cases well advanced in developing a project)

Amber text indicates questions that could be answered by organisations with existing community batteries AND organisations at any stage of planning a community battery project.

Green text indicates text that any community energy person or organisation, moderately interested in batteries may be able to answer usefully.

If your organisation has batteries or is actively planning a battery project we would encourage you to **make your own detailed submission**. Please add basic info and general observations to inform our response. You can refer to your own submission 'for more detail'.

Feedback form

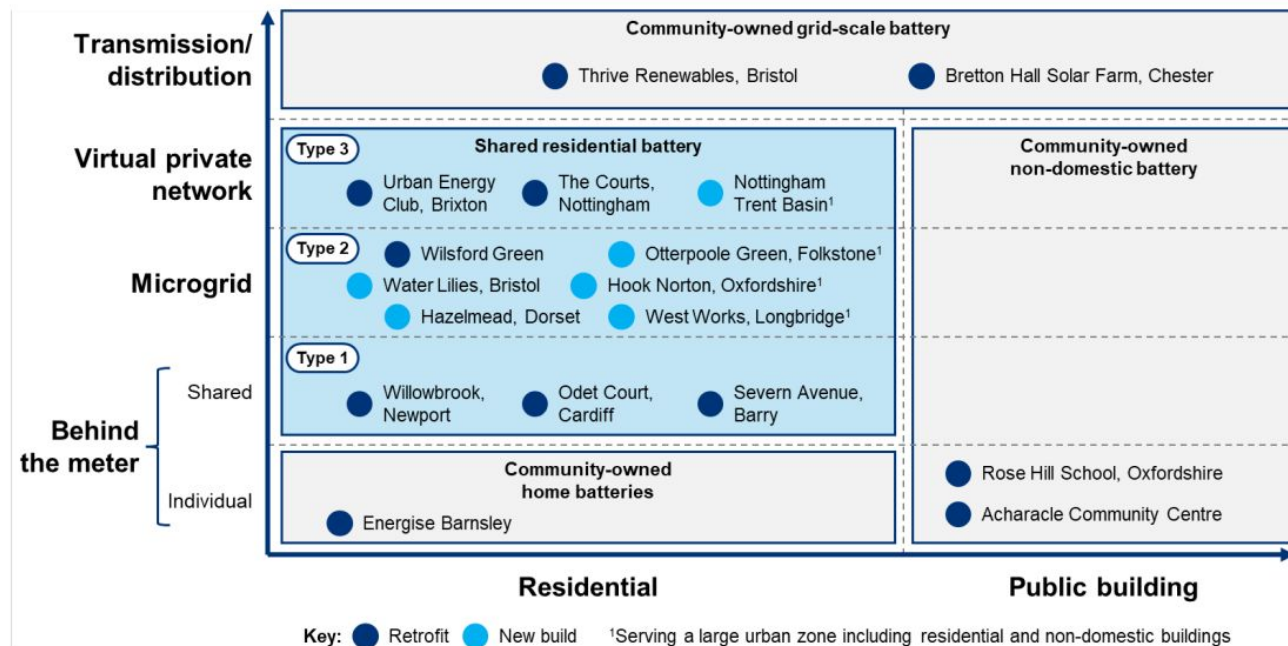


Call for Evidence



Call for Evidence

Figure 1: categorisation of community batteries by connection and building type, with non-exhaustive examples



Feedback form



Call for Evidence



Thank you and next steps



- Thank you to our speakers and thank you all for attending!
- We'll email the recording, slides and any follow-up information.
- See communityenergyengland.org/events for more events.
- Contribute to the call for evidence.



Energy Learning Network
Rhwydwaith Addysg Ynni