



Cobholden Farm Battery Energy Storage System

Presentation to Staploe Parish Council

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www.cambridgepower.co.uk

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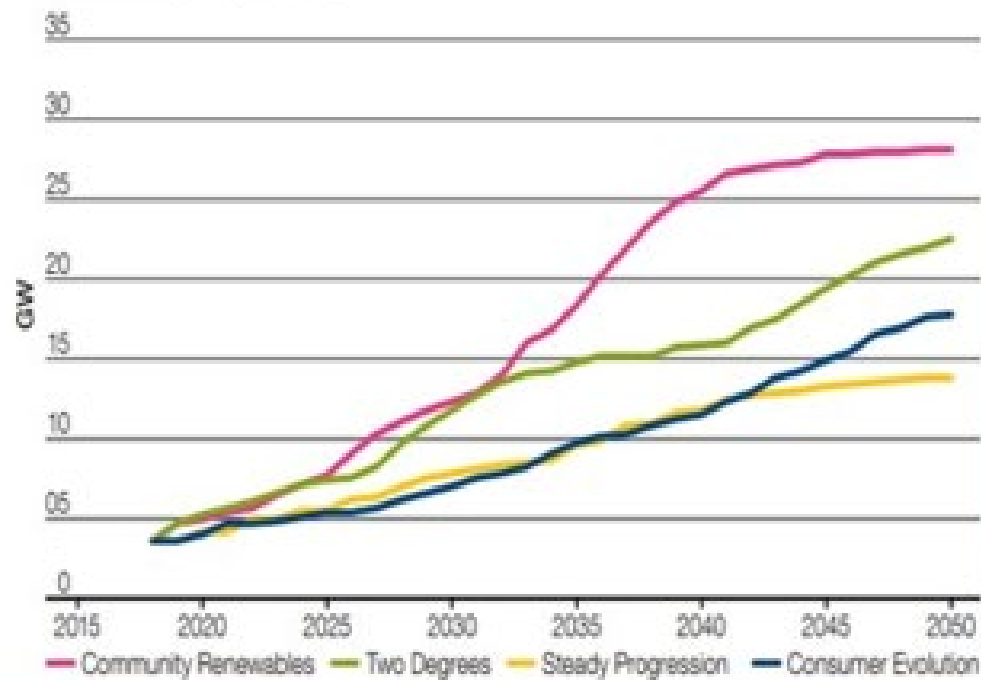
Development Context

- Climate Change Act 2018 (as amended) requires that the net UK carbon account for the year 2050 is at least 100% lower than the 1990 baseline. This is known as Net Zero.
- For energy, 70% of electricity generation to be provided by variable renewables (wind and solar) by 2035, and 80% by 2050 (Sixth Carbon Budget).
- In addition targets are also driven by the need for energy security, reducing need for energy imports.
- To facilitate this, there is an urgent need for Battery Energy Storage Systems (BESS).
- A BESS captures surplus energy when demand is low, and exports power when demand is high.
- A BESS can also provide emergency standby power as required by National Grid

UK Energy Market – Need for Energy Storage

Figure 5.11

Installed electricity storage capacity



Climate Change Act 2008

Zero Carbon 2019

Paris agreement 2016

updated

The Climate Change Act commits the UK government by law to reducing greenhouse gas emissions by at least 80% of 1990 levels by 2050.

Phase out 100% greenhouse gas emissions by 2050 to end UK contribution to global warming.

To keep global temperatures well below 2°C pre-industrial times and "endeavour to limit" them even more, to 1.5°C by 2050.

National Grid Future FES Estimate **27GW by 2050** under a community renewables scenario.

There is steady growth across all the scenario's as the rise of intermittent output from rising renewable generation increases the need for flexibility.

The Energy Systems Catapult's Storage and Flexibility Model forecasts a need of over **35GW of battery storage by 2050**.

The increase is driven by the increasingly important role for storage in balancing renewable output.

Currently at approx. **1,800MW of energy storage on the network**, incl pumped hydro.

The Drivers

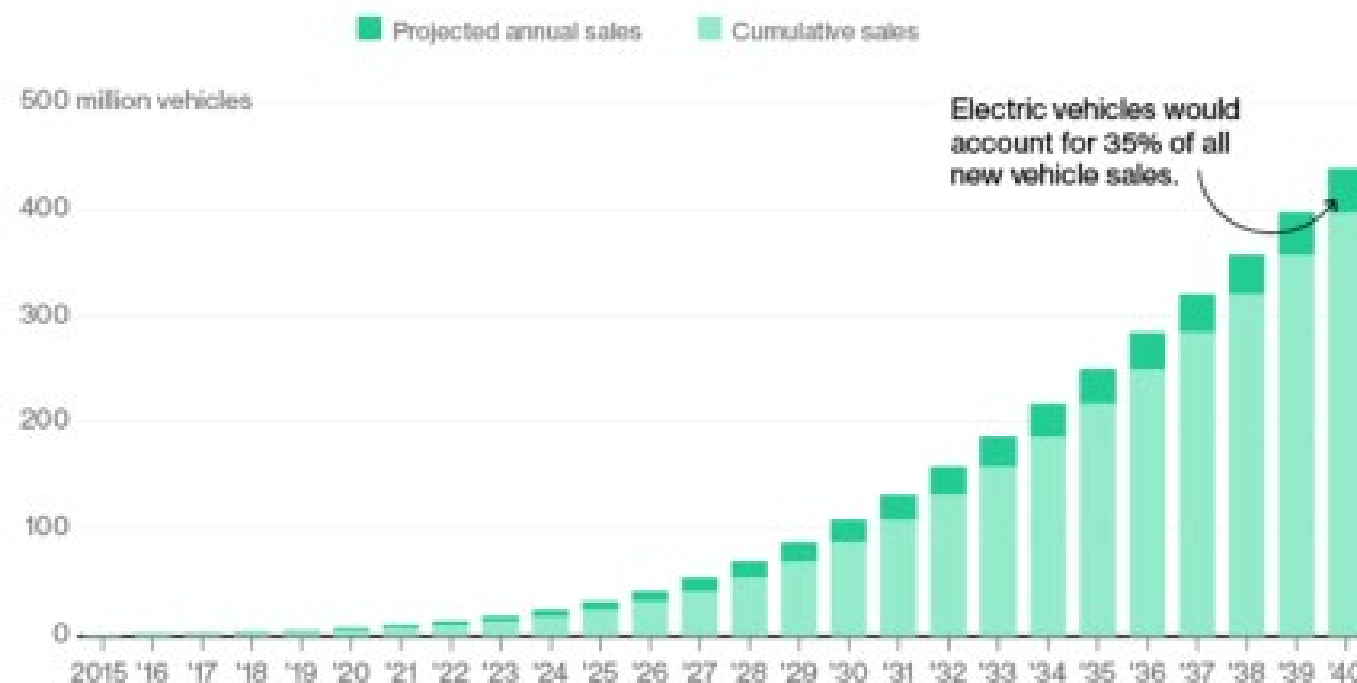
Time for change

Gas boiler ban in new homes by 2025. Are you ready?



The Rise of Electric Cars

By 2022 electric vehicles will cost the same as their internal-combustion counterparts. That's the point of liftoff for sales.



Sources: Data compiled by Bloomberg New Energy Finance, Marklines

Bloomberg 

What is a BESS?

- Battery Units
 - Lithium Ion Batteries, arranged in compartments, 10 compartments per 'skid'
 - Each compartment is individually monitored (e.g. temperature and voltage) and controlled
- PCS Units
 - Power Conversion Units undertake the AC/DC conversion
- Transformers
 - Transformers step up the voltage to 33kV
- Substation
 - The Substation connects the battery to the UK Power Networks distribution network
- The Cobholden Farm BESS will be rated at 100MW

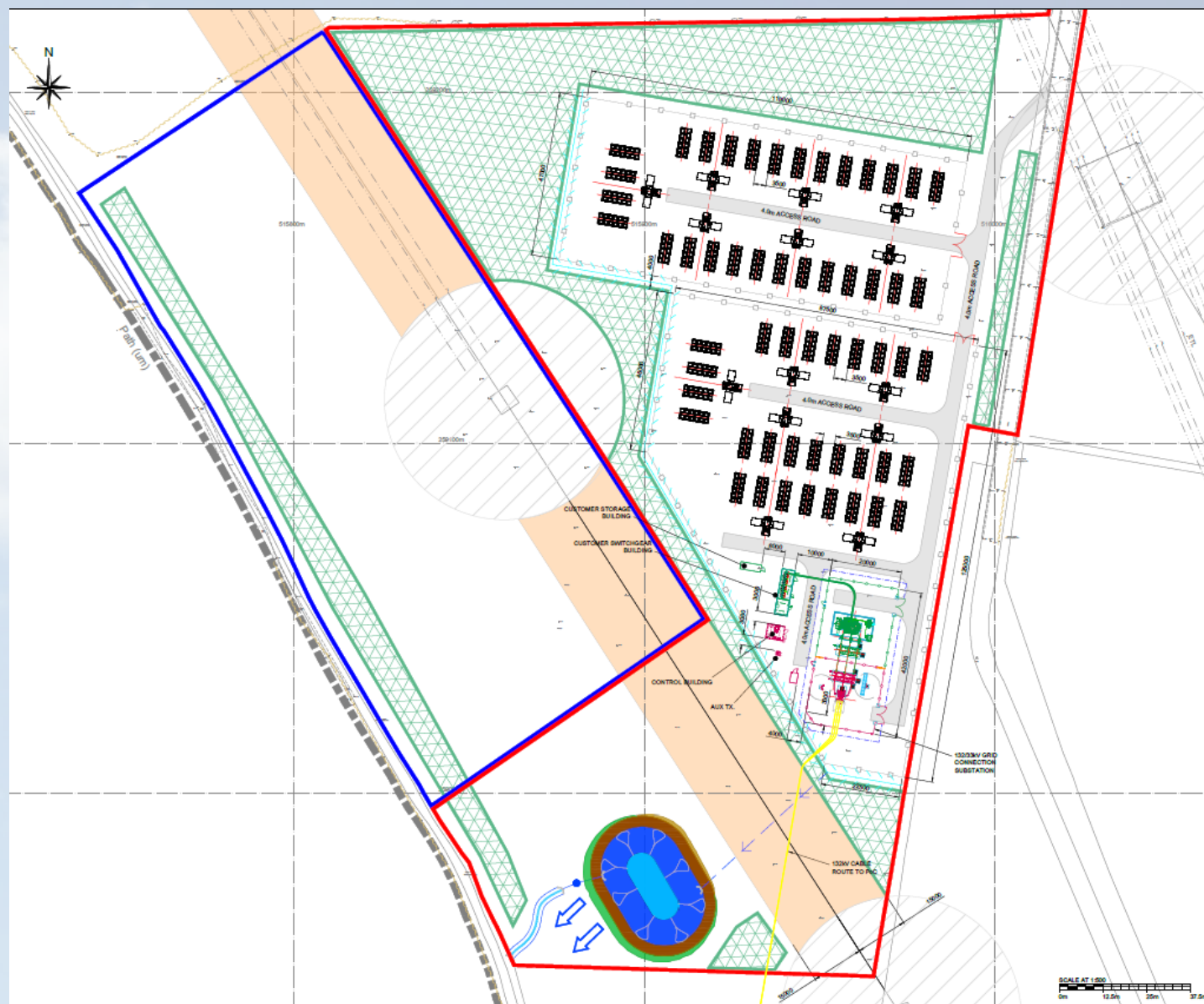


Site Location



Draft Overall Layout





Benefits

- Supporting UK Energy Strategy
 - Net Zero objectives
 - Improving Energy Efficiency
 - Energy Security
- Significant new tree and shrub planting
- Significant enhancement in Biodiversity Net Gain above 10%