

## HARKER 200MW BATTERY ENERGY STORAGE SYSTEM



## Project Summary

Development of Harker 200MW Battery Energy Storage System in Carlise.

### The Challenges:

- **The Need for Battery Storage:** As the UK moves towards mitigating the effects of climate change and achieving a carbon neutral economy, greener and more sustainable modes of power generation are required. This places large fluctuations of demand on the electricity grid. During periods of high demand, the National Grid aims to maintain a 20% supply margin which is critical to eliminating power shortages and blackouts.
- **Site Selection:** As further renewable energy developments across the UK are proposed, responsible site selection becomes a key consideration with Local Planning Authorities across the country looking to limit adverse impacts and ensure projects are situated appropriately in the context of the local environment. Cumberland Council's adopted local plan's policy requirements identify that Renewable Energy developments must be acceptable in terms of visual impact, character, landscape and heritage.
- **Effective Stakeholder and Community Consultation:** Windel Energy believe in engaging stakeholders and communities at early stages of a project proposal to gather feedback and local insight. Ensuring our engagement and consultation activities are inclusive and thorough is essential in ensuring those who need to be consulted and comment on the proposal are provided the opportunity.
- **Noise & Visual Impact:** Due to a successful site selection process, the site itself is well screened from most residential properties with the exception of a single homeowner where the property is situated circa 100 metres from the proposed infrastructure. Because of the distance from the equipment, this homeowner would have experienced unacceptable levels of noise as well as impacting on their view of the landscape.
- **Biodiversity Net Gain:** A requirement was mandated in The Environment Act in 2021 that ensures all developments affecting habitats for wildlife are left in a measurably better state than they were before, by at least 10%. This requirement came into force in February 2024.

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Find out more about Windel Energy:

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## The Solutions:

- **The Need for Battery Storage:** Battery Energy Storage Systems provide a balancing mechanism, charging when generation levels on the network are above demand. They represent an essential service to support the roll out of renewables, providing flexibility and sub-second response times, offering a solution to several of the National Grid's balancing issues and mitigate the need for costly network upgrades. Battery Energy Storage Systems support the development and deployment of low carbon intermittent energy technologies to satisfy energy requirements and help address climate change challenges.
- **Site Selection:** The identification of three fields in the vicinity of the Harker National Grid Substation which met preferential site criteria. The chosen site location sits outside an area of flood risk, with an existing suitable gradient, reducing the requirement for significant earthworks, provides close proximity to primary highway routes and avoids ecological designations and statutory protection areas.
- **Effective Stakeholder and Community Consultation:** Extensive local research to understand who we need to engage and consult with. Ensuring we provide varied mechanisms for feedback both verbally and in writing. This was aided by the development of a dedicated project website and the provision of detailed battery storage FAQs.
- **Noise & Visual Impact:** The creation of a bund between the closest property and the infrastructure. The bund included embedded scrub planting, along with tree & hedgerow planting, to provide visual screening and a beneficial effect in terms of potential noise emissions during the operation phase of the site. To further mitigate potential noise impacts, Windel Energy also provided acoustic fencing around the site substation.
- **Biodiversity Net Gain:** The inclusion within the proposal of shrub planting on the newly formed bund, a single new native species hedgerow across the north-east boundary of the site, the infilling of any gaps in the existing hedgerow boundaries, new native broadleaved woodland blocks, planted to the west & south of the equipment areas, and creation of a wildflower meadow. This resulted in a BNG of 23.82% for habitats and 18.41% for hedgerows.

## The Result:

- Unanimous consent at planning committee for a 200MW Battery Energy Storage System and associated infrastructure, along with the approval of a five year consented period for implementation of the project.
- A BESS deployment area comprising;
  - 162 Battery Container Units
  - 54 Inverters and 27 Transformers
  - Eight Back up Auxiliary Transformers
- An on-site substation area comprising:
  - Maintenance Parking;
  - Three BESS Switchgear Containers
  - A BESS Control Building
  - One 33/400kV Transformer
  - Harmonic Filters
  - One Earthing Auxiliary Transformer (EAT) and one Circuit Breaker
  - Four containers for storage of on-site spare parts.
- Additional on-site infrastructure including
  - Internal Access Track
  - Infra-red CCTV Cameras
  - Perimeter Security Fencing
  - Acoustic Fencing and a Screening Bund with Mitigation
  - Native Shrub Planting

## Why Windel Energy:

- A market leader in the development and asset management of renewable energy projects and low carbon disruptive technologies.
- More than 4 gigawatts of clean, renewable power generation and Battery Energy Storage in various stages of development across the UK, throughout different planning regimes including LPA, DNS & DCO.
- A team with experience of delivering over 5GW of operational renewable energy projects globally.



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