Energy storage

What is it and how does it work?

Energy storage systems can help manage the supply and demand of electricity, storing and releasing it to and from the electricity network, and play an important role in enabling renewable energy sources to meet more of our electricity needs, helping greatly our journey to net zero.

An energy storage facility is modular, consisting of several components including battery units, power inverters, and a substation which will connect it into the electricity network.

Working in a similar way to common household batteries they store electrical energy as chemical energy until it is needed, and then release it back onto the network.

It's possible to reduce consumer costs by storing electricity when cheaper, or excess energy generated by renewable sources during sunny or windy periods and releasing it during busier periods.

Why do we need batteries?

ACCELERATE DECARBONISATION

Energy storage is playing a vital part in the transition to a low-carbon electricity network, allowing us to balance the grid and increase the amount of electricity generated through renewable sources. This decreases our reliance on fossil fuels and contributes positively to energy security and lower electricity prices. Energy storage is a crucial part of Scotland's journey to achieving net zero emissions by 2045.

LOW IMPACT, HIGH REWARD

Energy storage projects are non-invasive, reversible development with few waste products and minimal long-term impact on the local environment. In fact, there are many ways in which energy storage projects can bring additional value to local communities, through community benefits, business rates, farm diversification, and beyond.

FIGHTING CLIMATE CHANGE ON MULTIPLE FRONTS

By providing more energy capacity quickly, and with far fewer carbon emissions, developing more renewable energy is key to fighting the climate crisis. Energy storage both maximises the use of renewable energy and helps to address one of the biggest impacts of climate change: biodiversity and the knock-on effect that losing biodiversity has on food security.

Our energy storage projects are designed to deliver net biodiversity improvements, which in turn enhances the local environment and habitats for pollinators, boosting food production and contributing to food security.

Safety
Integrity
Respect
Sustainability
Drive

Developing
an energy storage site

lightsource bp

The development process for energy storage takes us from an initial appraisal of the site's suitability, through to detailed surveys and assessments, progressing the project plans through engagement with stakeholders, and consultation with the local community. The resulting proposals will then be put to the local planning authority for a decision on whether it can be built.

SITE SELECTION

Energy storage sites are sited where grid connections are available, i.e., in areas where there's capacity for them to plug into the electricity network.

Once we've established that there's space on the grid, we select a site for the project based on:

- ✓ accessibility for construction and maintenance;
- ✓ whether there is good screening to protect landscape and visual amenity; and
- ✓ the acceptability of the site in terms of natural environmental considerations and sensitivities.

BIODIVERSITY AND LANDSCAPING

Wherever we develop a project, we aim to do so in a way that enhances local habitats, leaves a positive legacy for the local ecosystem and minimises the visual impact of the project.

Proposals for landscaping and biodiversity enhancements are informed by environmental surveys and assessments, and engagement with local stakeholders. We aim to enhance the existing habitats alongside creating new habitats using native species which attract pollinators and other wildlife.

SURVEYS AND ASSESSMENTS

Any infrastructure planning application requires surveying and assessments to understand possible impacts on people, wildlife, and the environment. This is sometimes referred to as environmental impact assessment.

The surveys are conducted by specialist consultants to nationally recognised standards, and may assess ground conditions, flood risk, archaeology, habitats and species, noise, and the presence of existing underground utilities.

The surveys and assessments will help us to understand the current conditions, and if or how these conditions would change with development.

This information will be:

- ✓ used to develop the proposals;
- ✓ shared and consulted on with the community and other stakeholders;
- ✓ submitted as part of the planning application.

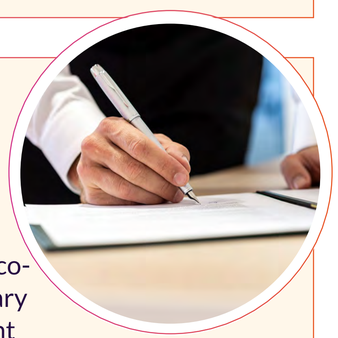
ENGAGEMENT AND CONSULTATION

Good community engagement helps us to design a project which will maximise the benefits and minimise any impacts.

We engage with residents, groups, and public representatives throughout the duration of a project's development, in order to explain the need for it, demonstrate how the site will look, address questions or concerns, and to gain a better understanding of the site and the community.

In addition, we schedule a formal, set period of consultation, through which we will publish a fully developed set of proposals on which people can register their feedback, which will be taken into account before the proposals are submitted for planning approval.

To promote the community consultation, we will hold a community event, write to households and distribute copies of the proposals, and we will notify local media.



PLANNING APPLICATION

Once we have developed a set of proposals suitable for a planning application, we will submit them to the local authority's planning committee, in co-ordination with any applications necessary for environmental permits to the relevant environmental regulator. It is usually the case that these bodies will further consult with relevant stakeholders, or ask us for further information in their determination and decision-making processes.

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