

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 the UK's journey to achieving net zero by 2050.

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.



Developing an energy storage site

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.



Constructing an energy storage site

The health and safety of our workforce, contractors, and neighbours, and the protection of the environment are our priorities. Safety is a mindset and we apply it to everyone, everywhere, every day.



Our construction planning prioritises safety and environmental protection, but also aims to minimise inconvenience and disruption to the community around our site. The timeframe will vary based on the size of the project, the constraints and characteristics of the site, and the required workforce. Security on any construction site is also important, and during construction, the site is monitored 24 hours a day by security staff.

We develop management plans to make sure that we follow best practice, construct a safe, clean, and high-quality site, and that we take into account and mitigate any potential impacts.



NOISE

We adhere to standard construction working hours and implement best practice measures to make sure that we minimise disruption throughout the construction process.



TRAFFIC

During construction, all site traffic is required to follow a construction traffic management plan, in consultation with local authorities and other agencies, to minimise disruption.

DUST & DIRT

Energy storage construction creates minimal amounts of dust due to the nature of the work, and we take measures to minimise the amount of dust, dirt and mud transferred outside the site boundaries by hosing down particularly dusty areas and washing vehicle wheels before leaving site.



WASTE

We keep a clean and tidy site, and we require our contractors to follow both good practice, and waste regulations in the way that they dispose of waste materials.



COMMUNICATION

We're committed to being good neighbours. We will communicate with people nearby in advance of, and as we begin construction to let them know how and when we plan to conduct the work and so that they know how to get in touch with us if they have any questions or concerns.



WORKING WITH LOCAL BUSINESSES

Most of the work that takes place on our energy storage projects is performed by one of our trusted supply chain contractors, working within our standards for safety, environmental protection, and consideration for the local community. These specialist construction companies often subcontract aspects of building an energy storage project to local contractors, which can include civil works, fencing, security, and landscaping.

Operating an energy storage site

Once the energy storage facility is commissioned, it will operate, largely quietly and unobtrusively, with very little impact in the local environment or local community. Landscaping and biodiversity enhancements will establish in the first few years and the local natural environment will benefit for the operational lifetime of the site and hopefully beyond.



BIODIVERSITY

Measures taken throughout the development and construction of our energy storage projects aim to:

- ✓ avoid or mitigate construction impacts;
- ✓ provide a place for local flora and fauna to thrive;
- ✓ support pollinators;
- ✓ enhance local habitats; and
- ✓ prioritise native species.

We expect that your local natural environment will benefit for the operational lifetime of the energy storage facility.

COMMUNITY BENEFIT

We support communities neighbouring our energy storage projects by providing community benefit in the form of funding for projects or initiatives that leave a lasting positive contribution to the community.

We partner with community organisations, and parish or community councils to identify creative and wide-ranging opportunities, including playgrounds, defibrillators, and even batteries and solar panels for community buildings.

FOOTPATHS

We maintain any footpaths and public rights of way that cross our sites, upholding the general public's right to access the countryside.

ON-SITE MONITORING AND MAINTENANCE

During its operational lifetime, an energy storage project requires relatively little on-site intervention. The site will be visited every month or so for monitoring, and routine maintenance and land management will be carried out, all with little-to-no impact on the local community and environment.



OPERATIONAL SAFETY

Safety is a core value at Lightsource bp, it's at the heart of everything we do. We design our projects to include all necessary mitigation and safety measures.

Due to our advanced monitoring systems, in the unlikely event that anything goes wrong with one of our batteries, we will be notified instantly. The systems are designed to isolate any faults, so issues don't spread and escalate. These systems function automatically without the need for human intervention, so safety measures will be automatically put into effect regardless of when the issue occurs.

For each energy storage project, we develop a bespoke battery safety management plan, created in consultation with local authorities and fire and rescue services.

DECOMMISSIONING ENERGY STORAGE SITE

As a modular site, energy storage facilities are straightforward to decommission, and a decommissioning management plan will be in place as part of the work we do to achieve planning permission. At the end of a site's operational lifetime (up to 20 years), we will restore the site, and we care about sustainability, so we will reuse or recycle as much of the infrastructure as possible.

The technology is made up of mostly recyclable components, and as the industry continues to advance, the proportion of the equipment that is reused or recycled is expected to increase. The materials used to create batteries are valuable and finite resources, so this is a priority issue for the industry as a whole.



A global leader in the development of solar and storage projects

Lightsource bp is a global solar and storage leader, working with utilities, businesses, local communities and governments to help meet the rising demand for affordable, reliable and sustainable energy.

As a leading developer, financier and operator of utility-scale solar and storage projects, we have been building and growing meaningful partnerships across the energy transition for over a decade. Our gigawatt-approach provides many benefits to our partners worldwide by leveraging economies of scale, ethical and sustainable procurement, and continuous improvement on quality and efficiency.

We are growing at pace and scale, going beyond business as usual, to act as an enabler of the energy transition and meet this rising demand for sustainable energy with the urgency it deserves.

OUR PARTNERSHIP WITH BP

This alliance is inspired by a shared mission: to accelerate the potential of renewable energy globally. By delivering solar and storage projects worldwide, we're addressing the need to provide more energy but with fewer emissions. By combining our industry-leading experience and development track record with bp's global scale, reach and relationships, we're able to enact real change on the energy landscape, and work towards securing a low-carbon future for communities across the world.

- ✓ 50:50 joint venture
- ✓ Trusted as bp's solar and storage partner



COMMITTED TO SUSTAINABILITY

Climate change, decarbonising energy and biodiversity loss are among the complex and interwoven global issues that we face today. At Lightsource bp, we are taking action to respond to the urgent call towards addressing these issues. Our sustainability framework promotes the growth and accessibility of renewable energy across the world. It demonstrates our commitment towards being a global force for good through our business activities and partnerships.

Our core contribution to global sustainability is in decarbonising the world's energy landscape through responsibly developed solar and storage projects.



Social responsibility

for our people, partners and communities



People



Environment

Solar power
for our world



Energy

Environmental stewardship

going beyond business as usual

- Enhance ecosystems and biodiversity
- Take science-based climate action
- Improve circularity

See our sustainability page

