

Government boost for new renewable energy storage technologies

- £6.7 million government funding awarded to projects across the UK to support the development of new energy storage technologies
- energy storage will be crucial as the UK transitions towards cheap, clean, domestically-produced renewable energy
- maximising the potential of renewables will help lower costs in the shift to a greener energy system

Nearly £7 million awarded to turbocharge UK projects that are developing innovative energy storage technologies, in first round of government-backed competition.

The intermittent nature of renewables like solar and wind power means that energy can be produced when it is not needed, such as during extended periods of high wind. However, as new technologies are developed, this energy can be stored for longer, helping manage electricity generation variations and increasing resilience, while also maximising value for money.

Twenty-four projects based across the UK have been awarded the first round of funding through the Longer Duration Energy Storage competition, which is worth £68 million in total. These projects will benefit from a share of over £6.7 million to develop new energy storage technologies that can utilise stored energy as heat, electricity or as a low-carbon energy carrier like hydrogen. Ranging from the development of thermal batteries to converting energy to hydrogen, they have been selected because of their potential to improve technology performance and reduce the cost of meeting net zero. Successful projects could benefit from a greater tranche of funding from a second phase of the competition, which will support these projects towards commercialisation, encouraging private investment and creating new jobs.

Energy and Climate Change Minister Greg Hands said:

Driving forward energy storage technologies will be vital in our transition towards cheap, clean and secure renewable energy.

It will allow us to extract the full benefit from our home-grown renewable energy sources, drive down costs and end our reliance on volatile and expensive fossil fuels. Through this competition we are making sure the country's most innovative scientists and thinkers have our backing to make this ambition a reality.

As part of the UK government's commitment to reach net zero, we are accelerating the transition to clean, renewable energy, and shifting to a green electricity grid by stepping up the use of clean energy sources like wind and solar power.

This will not only help reduce the nation's dependence on expensive fossil fuels, but will also provide cheaper energy to consumers, and will mean more of the UK's energy is produced domestically. The green energy transition will therefore involve ensuring the UK's electricity infrastructure can cope with greater shares of renewables, while meeting power demands securely.

Today's funding is awarded under Phase 1 of the [Longer Duration Energy Storage Demonstration competition](#) (LODES), part of the government's £1 billion [Net Zero Innovation Portfolio](#). Phase 1 will be followed by Phase 2, which will see the remainder of the £68 million funding awarded to several of the most promising Phase 1 projects, to proceed to build and demonstrate their technology fully. Selecting projects for the next stage will take place upon the completion of Phase 1, whereby projects will be assessed based on their potential to commercialise their technologies.

The energy storage projects receiving funding today include:

- Sunamp's EXTEND project, East Lothian, Scotland – will receive £149,893 for a feasibility study to further develop the storage duration of their thermal batteries. They will look to pair their heat batteries with household energy systems to tackle periods of low renewables generation on the grid
- Cheesecake Energy's FlexiTanker project, Nottingham, England – will receive £139,411 to develop their thermal and compressed air energy storage technology to integrate more renewables into the grid, helping to fast-track the decarbonisation of the UK electricity system
- B9 Energy Storage's Ballylumford Power-to-X project, Larne, Northern Ireland – will receive £986,082 to mobilise an innovative 20MW Power-to-X project at Ballylumford. Green hydrogen produced by electrolysers will be stored in underground salt caverns and used for transport and to displace natural gas in fuel blending trials. This project paves the way for future large-scale deployments connected to offshore windfarms

Andrew Bissell, Chief Executive Officer at Sunamp said:

For the past decade, we have focused on decarbonising hot water and have delivered a world-beating 20,000 heat batteries using our phase change material into the market so far, and we are now bringing forward our Central Bank products for heat. Our thermal storage technology can be combined with heat pumps to deliver more than twice as much heat per unit of electricity on demand than direct electric heating. This funding will accelerate how we can further enhance thermal storage duration, working with wind energy from the grid and solar PV in homes, to provide heat and water during extended intervals of low renewables generation when green power is not available on the grid, eventually reducing the overall cost of operation to be lower than gas.

Larry Zulch, Chief Executive Officer at Invinity said:

The LODES initiatives are yet another demonstration of the UK's commitment to building a thriving low carbon economy. Invinity greatly appreciates BEIS's vision for that future, especially the vital role that safe, reliable and robust long-duration energy storage has to play on a Net Zero UK electric grid. In realizing that vision we are tremendously pleased to be working again with BEIS, Pivot Power and EDF to plan the deployment of a vanadium flow battery 8 times the size of the one currently operating at Energy Superhub Oxford.

The funding announced today is a key step towards supporting the development and commercialisation of innovative energy storage technologies, in turn supporting the UK's transition to relying on renewables, while also encouraging private investment and new green jobs.

The £68 million Longer Duration Energy Storage Demonstration competition is funded through the Department for Business, Energy and Industrial Strategy's £1 billion [Net Zero Innovation Portfolio](#), which aims to accelerate the commercialisation of innovative clean energy technologies and processes through the 2020s and 2030s.

This competition is being conducted in 2 phases, and across 2 streams. The 2 competition streams are designed to support technologies at different stages of development, with Stream 1 supporting actual demonstrations of the technologies, and Stream 2 supporting prototype demonstrations. Funding for Stream 1 is in the form of Capital Grants and the projects have been required to secure additional private investment.

Read a full list of the projects receiving funding under:

Phase 2 will build on Phase 1, selecting several of the Phase 1 projects for further funding to build and demonstrate their technology fully.