

Energy storage backed with over £32 million government funding

- £32.9 million government funding awarded to projects across the UK to develop new energy storage technologies, such as thermal batteries and liquid flow batteries
- energy storage will be crucial as the UK scales up secure, clean and affordable renewable energy, with cutting-edge projects led by innovators across the UK
- developing energy storage will further strengthen the UK's energy security by helping unlock the full potential of home-grown renewables

Over £32 million government funding has been awarded to UK projects developing cutting-edge innovative energy storage technologies that can help increase the resilience of the UK's electricity grid while also maximising value for money.

Five projects based across the UK will benefit from a share of over £32 million in the second phase of the [Longer Duration Energy Storage \(LDES\) competition](#), to develop technologies that can store energy as heat, electricity or as a low-carbon energy carrier like hydrogen.

The variable 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, new energy storage technologies can store excess energy to be used at a later point, so the energy can be used rather than wasted – meaning we can rely even more on renewable generation rather than fossil fuels, helping boost the UK's long-term energy resilience.

This builds on the aims set out in the [Energy Security Strategy](#) earlier this year, to ensure a more flexible, efficient system by encouraging flexibility with large-scale, long-duration electricity storage to balance the overall system.

Minister for Climate Graham Stuart said:

Accelerating renewables is key to boosting our energy resilience. Energy storage helps us get the full benefit of these renewables, improving efficiency and helping drive down costs in the long term.

This £32.9 million government backing will enable green innovators across the UK to develop this technology, helping create new jobs and encouraging private investment, while also safeguarding the UK's energy security.

The funding announced today follows the first phase of the LDES competition, which saw £2.7 million awarded to 19 projects. This second phase provides

further funding to the most promising projects from Phase 1, enabling them to build prototypes and demonstrators to bring their projects to life.

The LODES competition provides government backing to accelerate 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 – with an estimated 100 jobs supported through these projects.

Energy storage projects who have received funding

StorTera Ltd, based in Edinburgh, will receive £5.02 million to build a prototype demonstrator of their sustainable, efficient, and highly energy dense single liquid flow battery (SLIQ) technology. SLIQ will offer flexibility to the grid by storing electricity which can then be released when weather dependent technologies such as wind turbines and solar panels have periods of decreased energy generation.

Sunamp Ltd, based in East Lothian, will receive £9.25 million for a project that will trial their advanced thermal storage system in 100 homes across the UK. They will extend their existing heat battery to provide increased storage duration and capacity and pair it with household energy systems to tackle periods of low renewables generation on the grid.

The University of Sheffield will receive £2.60 million to develop a prototype modular thermal energy storage system, enabling optimised, flexible storage of heat within homes, providing benefits for both the occupant and the grid. The prototype energy systems will be manufactured by Loughborough University and deployed at the Creative Energy Homes campus at the University of Nottingham, demonstrating the technology within lived-in homes.

RheEnergise Ltd will receive £8.24 million to build a demonstrator near Plymouth of their 'High-Density Hydro®' pumped energy storage system. The system uses an environmentally safe mineral-rich fluid more than two and half times denser than water, to create electricity from gentle slopes, without requiring steep dam walls or high mountains like traditional hydropower. The project will use surplus electricity to pump the fluid uphill, then later when electricity is needed by the grid, the fluid will be released back down the hill through turbines to generate electricity.

EDF UK R&D, in partnership with the University of Bristol, Urenco and the UK Atomic Energy Authority (UKAEA), will receive £7.73 million to develop a hydrogen storage demonstrator utilising depleted uranium at UKAEA's Culham Science Centre in Abingdon, Oxfordshire. Electricity will be converted to hydrogen via electrolysis and stored for future use – either directly as hydrogen, or converted back to electricity via a fuel cell when required.

Dr. Gavin Park, CEO, StorTera Ltd said:

Long duration energy storage is key to a more sustainable future and better utilisation of renewable energy. This competition to accelerate the commercialisation of the most innovative

technologies is a great initiative and StorTera are thrilled to have been selected to demonstrate the potential of our single liquid flow battery.

Patrick Dupeyrat, Director EDF R&D UK said:

Hydrogen is an exciting and provable future solution for the UK's energy industry. Following the launch of this project, our demonstration technology will be a world first, allowing us to utilise depleted uranium to store hydrogen and provide grid flexibility. The UK's net zero future needs hydrogen and nuclear in the mix, and HyDUS, which innovatively combines the two, makes perfect sense. We have every confidence that HyDUS will succeed and are delighted that the government has backed the project with critical research funding.

Stephen Crosher, Chief Executive of RheEnergise Ltd said:

Over the next decade, Long Duration Energy Storage can make an important contribution to the UK energy market, and indeed globally. Long Duration Energy Storage is a key to delivering the energy transition and will help strengthen the resilience and security of the UK's energy system. It will be essential to the effective operation of the grid as it balances intermittent renewable generation, it helps to create effective base-load power from renewables, whilst at the same time keeping costs low. Our storage system offers a solution.

BEIS's contract is incredibly welcome and will enable us to accelerate the commercial deployment of our High-Density Hydro® storage system in the UK and overseas. With the BEIS contract in place, we will be seeking planning consent for our Devon project before the end of the year.

We are also pursuing a number of project opportunities elsewhere in the UK, continental Europe and Canada. Drawing upon our work in Devon and the government's welcome support, we expect to have our first 5MW grid-scale project in operation in 2026.

Andrew Bissell, CEO, Sunamp said:

We are thrilled to have received this very significant funding award, which is the result of outstanding work from our own and our partners' product, materials and engineering teams. The money will be used to develop and test in 100 homes a first-of-a-kind thermal energy storage technology aimed at replacing fossil fuels and bringing forward the electrification of heat.

EXTEND systems in homes will help the UK ride out lulls in renewable energy generation and will allow homeowners to cut their carbon emissions and benefit from lower cost tariffs for flexible demand and participation in grid-supporting measures.

Dr Rob Barthorpe from the University of Sheffield said:

Our focus now is to make this happen. We intend to successfully demonstrate these technologies within lived-in homes, and to work with our industrial partners on scale up and commercialisation activities to bring them to market as soon as possible. We believe these technologies have the potential to play a significant role in maximising usage of renewable sources, and could provide real help to consumers during events such as the current energy crisis.

Notes to editors

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 two phases, and across two streams. The two competition streams are designed to support technologies at different stages of development, with Stream 1 supporting actual demonstrations of technologies closer to commercialisation, and Stream 2 supporting prototype demonstrations of earlier stage innovations. Funding for Stream 2 is in the form of Small Business Research Initiative (SBRI) contracts.

Phase 2 builds on Phase 1, giving further funding to several Phase 1 projects to build and demonstrate their technology.