

13<sup>th</sup> February 2014

## **Liquid Air Energy Storage system to be demonstrated at multi-MW scale with £8 million in UK Government funding**

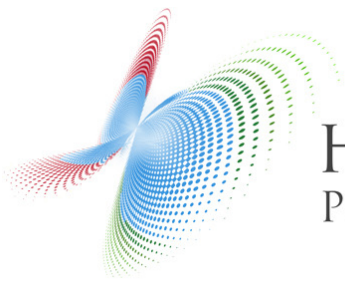
*Highview Power Storage's technology has been chosen for a grid scale Liquid Air Energy Storage demonstration project, funded by the UK Government's Department of Energy and Climate Change.*

**Highview Power Storage, a UK designer and developer of Liquid Air Energy Storage (LAES) systems, in collaboration with Viridor, one of the UK's leading recycling, renewable energy and waste management companies, has been awarded funding for a 5MW/15MWh energy storage demonstration project by the UK Government. The funding, valued at more than £8 million, has been awarded as part of the 'Energy Storage Technology Demonstration Competition', run by the Department of Energy and Climate Change (DECC). It will support the design and testing of a pre-commercial demonstration LAES system alongside one of Viridor's landfill gas generation plants in the UK.**

The LAES system will be connected to the national grid and demonstrate the technology providing balancing services to the electricity system. In addition to providing energy storage, the LAES plant will convert waste heat to power using heat from the on-site landfill gas engines. The project is scheduled to be operational by mid 2015.

As Highview's CEO, Gareth Brett, explains, *"This is a great opportunity to showcase a British innovation that has the potential to make a major contribution in terms of helping balance electricity systems in the future. With our pilot plant tested and fully operational on the UK's national grid, this new project will provide Highview with the opportunity to demonstrate the technology at commercial scale."*

The Highview pilot plant (350kW/2.5MWh) is hosted by SSE (Scottish & Southern Energy) at its Slough Heat & Power 80MW biomass plant. The technology can be scaled to deliver large-scale, long duration energy storage from around 5MW output and 15MWh of storage capacity to significantly more than 50MW output and 200MWh of capacity. It can be considered as being similar to medium scale pumped hydro, but without the requirement for mountains and reservoirs. In addition to storage, the technology can simultaneously convert waste heat to power.



# HIGHVIEW POWER STORAGE

Welcoming today's announcement, Viridor's Landfill Energy Director Ian Morrish said:

*"We are pleased to have secured funding for this important project. With ever growing pressure on natural resources, it is essential that we develop innovative and sustainable methods to generate energy not only to cut down our carbon footprint but to ensure long-term energy security."*

*"Innovation has been at the heart of successful businesses in Britain and it is great news that the government recognises and supports its development."*

Minister Greg Barker said: *"Storing energy will become increasingly important in the move towards a low carbon economy, and has the potential to save the energy system over £4 billion by 2050."*

*"Energy storage systems are potentially revolutionary technologies - just imagine how much the energy system will change if we're able to manage supply and demand better by storing energy cost-effectively, not to mention the benefits for British research and manufacturing industries."*

Highview's technology has been previously showcased at the Institution of Mechanical Engineers. Says Dr Tim Fox, Head of Energy at the Institution:

*"A significant attraction of the technology is that it builds on knowledge from one established industry, that of industrial gases, to provide a solution to the challenges of another, the energy sector, and makes use of existing component supply chains thus enabling a rapid scale-up to widespread adoption across the world."*

Anthony Price from the Electricity Storage Network (ESN) said:

*"The role of electricity storage is unquestioned by policymakers and business, now what's needed is a strategy to deliver at least another 2 GW of installed storage capacity by 2020. The Electricity Storage Network looks forward to working with DECC to formulate the strategy for storage in the electricity markets of the UK."*

In collaboration with commercial customers (UK and abroad), Highview is currently assessing the feasibility for multi MW commercial plants for a number of applications including supporting intermittent renewables, managing peak demand, delivering security of supply and waste heat to power to large industrial users.

**Ends**

**For more information, please contact:**

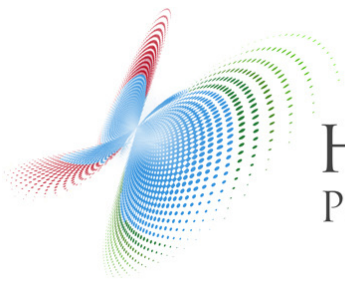
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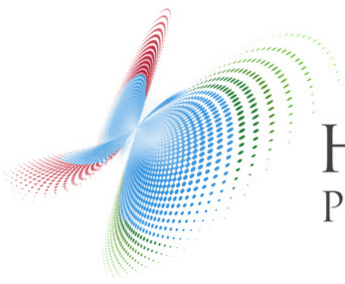
## Note for editors

**Highview Power Storage** is a privately owned, award-winning technology company located in Central London, England. Highview has developed and owns the Intellectual Property to a novel, large scale long duration Liquid Air Energy Storage (LAES) system using liquefied air as the storage medium. The system can simultaneously convert low grade waste heat into power during the discharge cycle, further increasing the overall efficiency by producing additional power.

At the feasibility stage of the competition DECC funded two separate projects that included Highview's technology, the Viridor landfill gas application and a second project looking at deploying a fully integrated 6MW/30MWh LAES system at the National Grid's Grain LNG facility at the Isle of Grain, Kent, to demonstrate the utilisation of waste cold from LNG re-gasification to improve the efficiency of Highview's technology. The feasibility studies found both applications to be technically viable, however the costs estimated through the study for the Grain project put this outside the reach of the competition budget.

**Viridor** is one of the UK's leading recycling, renewable energy and waste management companies and is currently investing in a number of developments in renewable energy projects (including landfill gas, anaerobic digestion, energy from waste) to process non-recyclable, non-hazardous household and commercial wastes into useable energy.

Each year Viridor transforms over two million tonnes of materials into high quality recyclate, and yet more into over 760 GWh of renewable energy. In total Viridor safely manages over eight million tonnes of recyclables and waste materials for customers from all sectors across the UK.



Gregory Barker, Minister of State for Climate Change (DECC) announces the £8 million Liquid Air Energy Storage (LAES) project at the Institute of Mechanical Engineers (IMechE).

Ian Morrish, Viridor's Landfill Energy Director (Left)  
Gregory Barker, Minister of State for Climate Change (DECC) (Middle)  
And Gareth Brett, CEO, Highview Power Storage (right)

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