

Project ID	DIP079		
Long Title	Pumped Heat Energy Storage		
Short Title			
Keywords	Single Site; Multi-sector/Grid; Electricity; Heat; Heat Pumps; Indirect Electric Storage; Power Quality & Grid Integration;		
Location (Town, Region, Country)	Fareham	Hampshire	England
Latitude and Longitude	50.87N	1.25W	
OSGB code	SU531077		
Status	Complete		
Start Date	2013		
End Date	2016		
Description	<p>Pumped Heat Energy Storage (PHES) is a flexible and low-cost per unit technology for storing energy at grid-scale.</p> <p>Unlike other energy storage technologies the solution means that energy can be delivered when required as either/or as a combination of high-grade heat, cryogenic thermal energy or electricity.</p> <p>Based on the results of a series of prototype systems developed and tested by Isentropic Ltd., a £15m investment from the ETI (Energy Technology Institute), the world's first 150kW/600kWhr grid-scale demonstrator was designed, manufactured and installed on site.</p> <p>In August 2016, the National Facility for Pumped Heat Energy Storage was opened to showcase the technology and demonstrate its potential in terms of efficiency and flexibility of low-cost storage.</p> <p>The grid-scale demonstration is currently undergoing system level testing.</p>		
Sectors	Grid		
Funding Sources	Innovation Funding Initiative / Energy Technologies Institute		
Budget £	£15.6 million		
Partners	Isentropic, Newcastle University, Western Power Distribution		
Energy vectors	Electricity, Heat		
Scale (lab/site/ small/community/region/national)	Site		
Technologies demonstrated	Heat pumps, pumped heat electrical storage		
Economic models demonstrated	Grid services		
Other concepts demonstrated	Grid constraint mitigation		
Industry engagement			

Consumer engagement	
Project Reports (incl. links)	<a href="http://www.isentropic.co.uk/Publications">http://www.isentropic.co.uk/Publications</a>
Datasets (incl. links)	
Website/social media	<a href="http://www.isentropic.co.uk/">http://www.isentropic.co.uk/</a>
Information sources	<a href="http://www.smarternetworks.org/project/prj_1177">http://www.smarternetworks.org/project/prj_1177</a>