

Project ID	DIP101		
Long Title	Solar Storage		
Short Title			
Keywords	Small-scale; Multi-sector/Grid; Electricity; Solar PV; Direct Electric Storage; Power Quality & Grid Integration; Smart Grids; Active Network Management; LV Grid Monitoring;		
Location (Town, Region, Country)	Butleigh	Gloucestershire	England
Latitude and Longitude	51.10N	2.68W	
OSGB code	ST 525 335		
Status	Ongoing		
Start Date	2015		
End Date	2018		
Description	<p>The objectives of this project are to:</p> <ol style="list-style-type: none"> <li>1. Quantify the potential value to network operators and others of integrating storage with DG;</li> <li>2. Use real-world operation of integrated utility scale storage: generation system to provide data to regulators and potential investors; and</li> <li>3. Demonstrate safe, reliable operation of the system under operational conditions.</li> </ol> <p>A battery and control system will be integrated with a 1.3MW PV array connected to WPD South West's 11kV network. Analysis of the detailed data set created by carrying out a set of well-defined use cases will form the technical core of the project. The use cases will demonstrate:</p> <ol style="list-style-type: none"> <li>1. Sale of energy stored in the battery for a higher price;</li> <li>2. Better matching of generation profiles to demand profiles;</li> <li>3. Use of storage to peak lop PV generation above a (dynamic) power threshold;</li> <li>4. Import electricity from the grid at times of low demand;</li> <li>5. Absorption and supply of reactive power to help manage the network voltage;</li> <li>6. Reduced connection capacity requirement per MWp generation capacity;</li> <li>7. More predictable PV output through smoothing PV's steep ramp rates;</li> <li>8. Raise or lower the export power threshold depending on thermal or voltage constraints;</li> <li>9. Show the control system allows smart co-ordination of multiple storage systems;</li> </ol>		
Sectors	Grid		
Funding Sources	Network Innovation Allowance		
Budget £	£1.75 million		

Partners	Western Power Distribution, British Solar Renewables Ltd., National Solar Centre (BRE)
Energy vectors	Electricity
Scale (lab/site /small/community/region/national)	Small
Technologies demonstrated	LV grid monitoring, smart controls, solar PV, active network management, battery storage
Economic models demonstrated	Grid services, deferred network investment
Other concepts demonstrated	Grid constraint mitigation
Industry engagement	
Consumer engagement	
Project Reports (incl. links)	<a href="https://www.westernpower.co.uk/docs/Innovation/Current-projects/Solar-Storage/6-MONTHLY-PPR-Solar-Storage-September-2017-v1-0-Fi.aspx">https://www.westernpower.co.uk/docs/Innovation/Current-projects/Solar-Storage/6-MONTHLY-PPR-Solar-Storage-September-2017-v1-0-Fi.aspx</a> Library: <a href="http://www.smarternetworks.org/project/nia_wpd_004/documents">http://www.smarternetworks.org/project/nia_wpd_004/documents</a>
Datasets (incl. links)	
Website/social media	<a href="https://www.westernpower.co.uk/Innovation/Projects/Current-Projects/Solar-Storage.aspx">https://www.westernpower.co.uk/Innovation/Projects/Current-Projects/Solar-Storage.aspx</a>
Information sources	<a href="http://www.smarternetworks.org/project/nia_wpd_004">http://www.smarternetworks.org/project/nia_wpd_004</a>