

Project ID	DIP051		
Long Title	Hydro Active Network Management		
Short Title			
Keywords	Single Site; Rural; Multi-sector/Grid; Electricity; Hydropower; Power Quality & Grid Integration; Active Network Management;		
Location (Town, Region, Country)	Snowdonia	Gwynedd	Wales
Latitude and Longitude	53.46N	4.43W	
OSGB code	SH 610 544 (approx. specific location not defined)		
Status	Completed		
Start Date	2012		
End Date	2014		
Description	<p>Wales is an area of significant renewable energy resource, including onshore and offshore wind as well as hydro generation. The area in and around Snowdonia is particularly noted for its significant potential for small-scale hydro generation. The area is served by a 'rural' distribution network, characterised mainly by low load density with only a few, long 11kV circuits, which are predominately overhead line construction.</p> <p>Traditional reinforcement methods for such a network to create additional capacity for embedded generation is generally not economically efficient and so such areas are prime candidates for the deployment of Active Network Management (ANM) systems, which are aimed at maximising the utilisation of the existing distribution network capacity based on real-time network measurements allied with generation power flow management. The primary network constraint in this example is network voltage.</p> <p>It is proposed that an ANM scheme be deployed on this network to actively manage the output of an existing hydro generator in order for it to utilise the additional generation export capability that is present during periods of higher demand. The ANM scheme will use voltage measurements to calculate in real time if the network has extra generation capacity available. This information will then be used to co-ordinate the output of the generator and other controllable devices.</p> <p>The scheme will be readily expandable in the future to accommodate additional generators.</p>		
Sectors	Generator, Grid		
Funding Sources	Low Carbon Network Fund		
Budget £	£200,000		
Partners	SP Nets; Smarter Grid Solutions		

Energy vectors	Electricity
Scale (lab/site/small /community/region/national)	Site (11kV grid)
Technologies demonstrated	Active network management
Economic models demonstrated	
Other concepts demonstrated	Grid constraint mitigation
Industry engagement	ANM vendor
Consumer engagement	
Project Reports (incl. links)	https://www.ofgem.gov.uk/publications-and-updates/first-tier-low-carbon-network-fund-project-active-network-management-hydro-generation-submitted-scottish-power-spt1004 Closeout report exists but is not publically available.
Datasets (incl. links)	
Website/social media	
Information sources	http://www.smarternetworks.org/project/spt1004