

Project ID	DIP037		
Long Title	Flexible Approaches for Low Carbon Optimised Networks		
Short Title	FALCON		
Keywords	Region; Multi-sector/Grid; Electricity; Direct Electric Storage; Power Quality & Grid Integration; Smart Grids; Demand Response; Active Network Management; Virtual Power Plant; LV Grid Monitoring; Stakeholder Engagement & Behaviour Change; Energy Strategy Development;		
Location (Town, Region, Country)	Milton Keynes	Northumberland	England
Latitude and Longitude	52.04N	0.76W	
OSGB code	SP 84 39		
Status	Complete		
Start Date	2011		
End Date	2015		
Description	<p>The cost and limited flexibility of traditional approaches to 11kV network reinforcement threaten to constrain the uptake of low carbon technologies. FALCON will address this through trialling of a Method that comprises a Scenario Investment Model (SIM) linked to a network trials area. It will trial four technical and two commercial alternatives to traditional reinforcement. The trials area will prove the practicality of these techniques. The SIM will identify network constraints under multiple future network load scenarios and determine the most cost-effective and timely combination of techniques to resolve them.</p> <p>The trial area will comprise six primary substations located on a mix of rural and urban networks representative of 90% of the national 11kV network. The objectives of FALCON are closely aligned with those of the UK Low Carbon Transition Plan and ED1. In addition to enabling the uptake of low carbon technologies, FALCON will deliver faster and cheaper 11kV connections and reduced DUoS charge increases for all. It will generate learning applicable to all DNOs, shared through established LCNF dissemination channels. In addition to a net financial benefit of £1.2m from the four-year project, we estimate that a national rollout of FALCON will realise a £660m financial benefit over 20 years and will save over 680 Ktonnes of CO2 by 2050 (accounting for an additional £36m of benefits). FALCON has senior management support in WPD and our key partners.</p> <p>The project is compliant with default IPR arrangements and requires no derogations. MoUs are in place with partners to enable a seamless transition into project delivery ensuring timely benefits realisation.</p>		
Sectors	Grid		

Funding Sources	Low Carbon Network Fund
Budget £	£14.46 million
Partners	Western Power Distribution, Logica, Alstom, Cisco, University of Bath, Cranfield University, Aston University
Energy vectors	Electricity
Scale (lab/site/small /community/region/national)	Region
Technologies demonstrated	LV grid monitoring, smart controls, active network management, battery storage, large-scale smart grid
Economic models demonstrated	Consumer behaviour change incentives, virtual power plant/market aggregation, grid services, time-of-use tariffs, new commercial models, deferred network investment
Other concepts demonstrated	Demand response, DNO-consumer engagement, grid constraint mitigation, DNO-generator engagement, generation-demand matching
Industry engagement	
Consumer engagement	
Project Reports (incl. links)	Closedown report: https://www.westernpower.co.uk/docs/Innovation/Closed-projects/FALCON/Project-FALCON-Final-Report2.aspx plus work programme reports available at project website Library: http://www.smarternetworks.org/project/prj_395/documents
Datasets (incl. links)	
Website/social media	https://www.westernpower.co.uk/Innovation/Projects/Closed-Projects/FALCON.aspx
Information sources	http://www.smarternetworks.org/project/prj_395