Project ID	DIP074		
Long Title	Photovoltaic Impact on Suburban Networks		
Short Title			
Keywords	Community; Urban; Multi-sector/Grid; Electricity; Solar PV; Power Quality & Grid Integration; LV Grid Monitoring; Energy Strategy Development; Data Acquisition;		
Location (Town, Region, Country)	Aspley	Nottingham	England
Latitude and Longitude	52.58N	1.12W	
OSGB code	SK 536 423		
Status	Complete		
Start Date	2012		
End Date	2013		
Description	The project had three phases which were achieved throughout the project: • Selection of substation monitoring equipment, • Installation in distribution substations, • Recovery and Analysis of data to determine the impact of dense PV panels on suburban networks. The project selected three split core current transformers, rogowski coils with trans-conductance amplifiers to measure current, modified fuse carrier handles and Nylon G clamps to measure voltage and EDMI and Subnet units as monitoring equipment. Devices were configured together to provide the most appropriate solutions for the networks requiring monitoring. Substation monitoring was installed on seven LV feeders and one substation transformer measuring and recording a range of characteristics including minimum/average/maximum voltage and current, current Total Harmonic Distortion, voltage Total Harmonic Distortion, individual voltage harmonics up to 50th, power factor, real and reactive power flows. The analysed data has shown the impact of densely connected on the LV distribution network operation. The limitations to further PV connections within the project area was voltage rise and how the analysis has updated WPD's policies allowing the connection of a further 20% solar PV for multiple LV connections due to the measured diversity.		
Sectors	Domestic, grid		
Funding Sources	Low Carbon Network Fund		
Budget £	£100,000		
Partners	Western Power Distribution, Meadows Partnership Trust, Nottingham City Council, Blueprint		

Energy vectors	Electricity
Scale (lab/site/ small/community/region/national)	Community
Technologies demonstrated	LV grid monitoring, solar PV, network data acquisition,
Economic models demonstrated	Deferred network investment
Other concepts demonstrated	Grid constraint mitigation
Industry engagement	
Consumer engagement	> 1000 households
Project Reports (incl. links)	Closedown report: https://www.westernpower.co.uk/docs/Innovation/Closed-projects/Active-Fault-Level-Management/AFLM-Closedown-Report-FINAL-v2.aspx Library: http://www.smarternetworks.org/project/cnt1001/documents
Datasets (incl. links)	
Website/social media	https://www.westernpower.co.uk/Innovation/Projects/Closed-Projects/Active-Fault-Level-Management.aspx
Information sources	http://www.smarternetworks.org/project/cnt1001