Project ID	DIP102		
Long Title	Solar Yield Network Constraints		
Short Title	SYNC		
Keywords	Small-scale; Non-domestic; Electricity; Solar PV; Power Quality & Grid Integration; Smart Grids; Active Network Management; Stakeholder Engagement & Behaviour Change; Alternative Suppliers & Tariffs;		
Location (Town, Region, Country)	Undefined		England
Latitude and Longitude	n/a	n/a	
OSGB code	n/a		
Status	Complete		
Start Date	2015		
End Date	2018		
Description	WPD has connected significant amounts of embedded generation to its distribution network in recent years. With so much generation already connected, and significant quantities in the pipeline, most of the latent capacity within the network has now been utilised. As such WPD is looking at ways of releasing extra capacity in the most economically efficient manner. Alongside the use of traditional reinforcement, the roll out of alternative connections has been one of innovative manners this has been done, building on the flexibility of generators. These give the option of trading off capital expenditure and time delays against potential curtailment. This moves from a passively operated network to a more active one. Whilst the inherent flexibility of generation is now being used, the flexibility of the demand side is as yet untapped. As part of the SYNC project we looked to test a range of Demand Side Response (DSR) techniques to help address many of the different challenges being posed by PV generation. By engaging with industrial and commercial (I&C) customers we could release additional capacity or even improve power quality. There are 4 techniques that project SYNC looked to investigate: **(T1)** - Automated demand increase / generation limiting in line with variation in solar yields. **(T2)** - Directly matching flexible load with flexible generation **(T3)** - Manually dispatched response signals from a WPD control facility (DSR) **(T4)** - Creation of suitable ToU (Time of Use) tariffs to encourage appropriate demand		
Sectors	Non-domestic		
Funding Sources	Low Carbon Network Fund		
Budget £	£864,000		
Partners	Western Power Distribution, Smart Grid Consultancy		

Energy vectors	Electricity
Scale (lab/site /small/community/region/national)	Small
Technologies demonstrated	Smart controls, solar PV, active network management, large-scale smart grid,
Economic models demonstrated	Consumer bahaviour change incentives, time-of-use tariffs
Other concepts demonstrated	Demand response, DNO-consumer engagement, grid constraint mitigation, consumer impact analysis
Industry engagement	
Consumer engagement	
Project Reports (incl. links)	Closedown report: https://www.westernpower.co.uk/docs/Innovation/Current-projects/SYNC/SYNC-closedown-V1-2.aspx Library: http://www.smarternetworks.org/project/nia_wpd_009/documents
Datasets (incl. links)	
Website/social media	https://www.westernpower.co.uk/Innovation/Projects/Closed-Projects/SYNC.aspx
Information sources	http://www.smarternetworks.org/project/nia_wpd_009