Project ID	DIP020		
Long Title	Distributed Storage and Solar Study		
Short Title	DS3		
Keywords	Small-scale; Electricity; Solar PV; Direct Electric Storage; Power Quality & Grid Integration; Active Network Management; Virtual Power Plant; Data Acquisition		
Location (Town, Region, Country)	Barnsley	South Yorkshire	England
Latitude and Longitude	53.55N	1.48W	
OSGB code	SE 35 06		
Status	Ongoing		
Start Date	2016		
End Date	2019		
Description	Growing levels of PV penetration on the low voltage electricity network are increasingly causing issues to the distribution networks such as reverse power flow and voltage rise. Battery energy storage systems (BESS) may provide a solution for many of these issues, as well as for peak load growth associated with the increasing electrification of heat and transport. Distributed Storage and Solar Study (DS3) is a monitoring and impact assessment project which will explore the potential for aggregator-controlled behind the meter storage to address these issues by providing peak-shaving capability and hence limiting reverse power flows and regulating voltages. The efficacy of behind the meter storage at mitigating the network issues associated with high penetration of PV will be compared to alternative solutions, such as batteries connected directly to the distribution network, trialled in the **Customer-Led Network** Revolution project The project that monitors a cluster of 40 energy storage devices alongside 27 residential PV will test whether the existence of the battery would allow for more residential PV before the need for network reinforcement by controlling the charging and discharging regimes of the storage devices.		
Sectors	Domestic		
Funding Sources	Network Innovation Allowance		
Budget £	£250,000		
Partners	Northern Powergrids, Energise Barnsley, Moixa		
Energy vectors	Electricity		
Scale (lab/site/small /community/region/national)	Small		
Technologies demonstrated	Solar PV, battery storage, network data acquisition		
Economic models demonstrated	Virtual power plant		

Other concepts demonstrated	Grid constraint mitigation
Industry engagement	
Consumer engagement	40 households
Project Reports (incl. links)	Progress reports. http://www.smarternetworks.org/project/nia_npg_011/documents Linked guidance. https://www.westernpower.co.uk/docs/connections/Generation/Community-Energy-Schemes/ENA_Electricity_Storage_Guide_FINAL.aspx
Datasets (incl. links)	
Website/social media	https://www.northernpowergrid.com/innovation/projects/distributed-storage-solar-study-nia-npg-011 http://www.energisebarnsley.co.uk/battery-storage/
Information sources	http://www.smarternetworks.org/project/nia_npg_011