

Project ID	DIP110		
Long Title	Thames Valley Vision		
Short Title			
Keywords	Region; Multi-sector/Grid; Electricity; Cooling; Solar PV; Hybrid RE Systems; Thermal Storage; Direct Electric Storage; Smart Grids; Active Network Management; Energy Strategy Development;		
Location (Town, Region, Country)	Bracknell	Berkshire	England
Latitude and Longitude	51.42N	0.75W	
OSGB code	SU 870 693		
Status	Completed		
Start Date	2012		
End Date	2017		
Description	<p>This five-year project focused on the Low Voltage (LV) network with the aim to demonstrate how electricity distribution networks can better serve their customers by understanding, anticipating and supporting energy use as we move towards a low carbon economy.</p> <p>Project objectives</p> <ol style="list-style-type: none"> 1. Applying proven data analysis from the Energy Demand Research Project (EDRP) to understand the different customer types connected to the distribution network, and their effect on network demand. 2. Understanding how the behaviour of different customer types allows informed network investment decisions to be made. 3. Demonstrating mitigation strategies, both technical and commercial, in a live environment, to understand: <ol style="list-style-type: none"> (a) The extent to which demand side response (DSR) (when customers change their energy usage in response to certain external triggers) can contribute to network flexibility, and identifying which customers are most likely to be early and effective adopters of DSR, and; (b) Where and how power electronics (with and without energy storage) can be used to manage power factor, thermal constraints and voltage to facilitate the connection of renewables on the LV network. 4. Undertaking dissemination and scaling activity to ensure validity and relevance to Great Britain (GB), with learning and understanding provided at two levels: <ol style="list-style-type: none"> (a) Provide front line training courses for the industry to embed real practical knowledge and skills, and; (b) Keeping the public informed so the intentions and benefits of the smart grid are clear. 		
Sectors	Domestic, Non-domestic		

Funding Sources	Low Carbon Network Fund (multiple projects)
Budget £	£30 million (£4.6m external funding)
Partners	SSE, General Electric (GE) - Grid Solutions, DNV - Kema, EA Technology, Bracknell Forest Council, University of Reading, and University of Oxford.
Energy vectors	Electricity, Cooling
Scale (lab/small/community/region/national)	Region
Technologies demonstrated	Network data acquisition, battery storage, cold thermal storage (CTS), active network management, smart grids, solar PV
Economic models demonstrated	Deferred network investment
Other concepts demonstrated	DNO-consumer engagement, grid constraint mitigation, consumer behaviour change incentives
Industry engagement	Multiple technology vendors.
Consumer engagement	>150 commercial customers and >1000 domestic customers
Project Reports (incl. links)	http://www.thamesvalleyvision.co.uk/wp-content/uploads/2017/05/NTVV-Project-Closedown-Report.pdf Extensive project library, including academic output, at: http://www.thamesvalleyvision.co.uk/project-library/ Paper: https://ieeexplore.ieee.org/abstract/document/6695291/
Datasets (incl. links)	Consumption data and substation monitoring at: http://www.thamesvalleyvision.co.uk/project-library/research-data/ (registration required)
Website/social media	http://www.thamesvalleyvision.co.uk/
Information sources	http://www.smarternetworks.org/project/sset203