

# THAMES VALLEY VISION

Ground-breaking Demand Side Response (DSR) project delivers significant energy savings and operations optimisation

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Case Study

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Thames Valley Vision is a five-year smart grid demonstration project, funded by the Low Carbon Network Fund and led by Scottish & Southern Electricity Networks - a Distribution Network Operator.

30 buildings were targeted purposely from a wide range of types and sectors to reflect the profile of many towns across the country. Participants included commercial, public sector, educational (schools and Higher Education), data centre, leisure centre and healthcare organisations. With the exception of two facilities in Reading, all were connected to the Bracknell electricity network.



## PROJECT OVERVIEW

As with many other towns and cities across the UK, peak electricity demand load on the Bracknell network is increasing. However, peak is only reached on certain days of the year and during certain hours on those days, meaning that significant investment to reinforce the network may be required just to ensure supply is maintained over a relatively small cumulative period.

The aim of Thames Valley Vision was to see if smart grid technologies could be used to defer or even avoid such investment and to learn lessons that could be applied to similar networks across the country. The project focused on reducing electricity demand in facilities connected to the network in a concerted, reliable and automated fashion, when demand was predicted to exceed the network's capacity.

## CUSTOMER OBJECTIVES

- Create and implement an end-to-end Automated Demand Response (ADR) programme, designed to deliver the targeted energy savings with zero negative impact on the participants' day-to-day operations.
- Build awareness of and enthusiasm for ADR amongst the general business community.
- Generate a series of measurable outputs and associated reports that can be fed into the development of similar - but larger - projects in the future.

A commercial office building with a 265kW normal building load shed 97kW for two hours (4pm-6pm) as part of a phased load reduction event. The programme affected chilled water pumps, heating pumps, conference rooms Air Handling Units, boilers, chillers and the main Air Handling Unit. None of the occupants noticed the **36%** reduction.

## THE HONEYWELL SOLUTION

- Identify suitable buildings and organisations. Scottish & Southern Electricity Networks had limited visibility of the network downstream of the main sub-station and required a team to recruit appropriate participants.
- Develop the ADR Software-as-a-Service proposition. This provided no financial incentive until much later in the project, but focused more on:
  - enhancing each participant's brand by being part of this ground-breaking initiative
  - strengthening their social responsibility credentials by being a 'good neighbour'
  - providing them with insight into what elements of their current energy usage they could actually do without.
- Recruit the customers, audit the buildings, design the load reduction strategies for each, install the equipment to connect each building, license the ADR cloud-based software and train Scottish & Southern Electricity Networks personnel in its use.
- Provide ongoing maintenance and technical support, cyber security, real-time data collection and data for event auditing.
- Provide support throughout the five-year project to Scottish & Southern Electricity Networks, including communication, events and reporting, to underpin active and ongoing participation in the demand response programme.

## BUSINESS OUTCOMES

- Scottish & Southern Electricity Networks conducted over 2000 load reduction events across the 30 buildings, ranging from 30 minutes to 4 hours at varying times of the day. Almost every building in every event didn't notice an event taking place.
- Scottish & Southern Electricity Networks was able to achieve over 1MW of electricity load reduction during peak demand events, thereby proving the role that existing buildings and smart grids could play in reducing peak demand and the future network investment required.
- Facility owners benefited from the kudos of being a participant in this ground-breaking project - boosting their own brand by leveraging the project's publicity, enhancing their green credentials and strengthening their position as a good neighbour by contributing to energy security in the area and helping to avoid the local transport disruption that network reinforcement inevitably entails.
- During the project, facility owners learned a great deal about energy usage in their buildings and, during the final year, were paid for their participation by Scottish & Southern Electricity Networks.





**“Thames Valley Vision has taught us a great deal about the potential value of Demand Side Response to this country’s future energy strategy. Thanks to Honeywell’s invaluable contribution to the TVV project, we now know what needs to happen in terms of technology, organisation and engagement on a far wider scale, in order to maximise DSR’s success.”**

Stewart Reid

*Head of Asset Management and Innovation*  
Scottish & Southern Electricity Networks

**For more information**

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