

# Power technology cuts costs and raises efficiency on High Speed 1

ABB carried out a major turnkey contract for traction power distribution systems for High Speed 1.

## The Background

For High Speed 1, ABB completed a four-and-a half year, turnkey contract for EDF Energy for the design, supply, installation and commissioning of the traction power distribution systems for Section 2 of this project.

## The Response

The contract involved the design, supply, installation and commissioning of three 25kV feeder substations at Barking, Stratford and St Pancras together with four 25kV auto-transformer stations at Rainham, Pepper Hill, Thurrock and Purfleet. Earlier contracts were for the supply and installation of power transformers, Static Var Compensators (SVCs) and load balancers.

The ABB feeder substations and auto-transformer stations, tailored specifically for trackside applications, are a key element in the 25-0-25kV power distribution system. This system is widely used for European high speed services, and allows a transmission voltage of 50kV, while the voltage seen by the train is only 25kV. Compared with a conventional 25kV system, involving booster transformers, this arrangement increases efficiency and cuts costs through fewer track feeding points, fewer connections to the distribution grid, reduced losses and the ability to support higher traction loads.

## The Verdict

Design and manufacturing began in 2003, installation commenced in 2005 and section 2 of High Speed 1 opened in 2007. ABB placed a key emphasis on project management and communication throughout the project to ensure a seamless interface between the customer and ABB's procurement, civil engineering and installation teams. The contract achieved a remarkable health and safety record, clocking up well over 250,000 hours with an LTU (Lost Time Incident).



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