DYNAMIC DEMAND

COdemand

COSTAIN

» OFFERING CUSTOMERS A NEW REVENUE STREAM THROUGH A SMART APPROACH TO MANAGING ENERGY LOADS

Optimising the whole life cost of an asset has always been a challenge for our customers. CO*demand* can bring you a new revenue stream by making your energy-intensive assets available for demand response services.

The smart technology CO*demand* uses turns your energy-intensive assets, such as boilers, pumps, fans and air conditioning units into smart devices which can automatically adjust their energy use in response to frequency changes on the electricity grid. This provides National Grid with a fast response system that will help them meet their legal obligations to constantly balance electricity supply and demand. National Grid procures a range of demand side services and therefore an asset owner can generate revenue from providing this service. CO*demand* offers the next generation of demand response technology to enable grid balancing.

A NEW REVENUE STREAM

You can see a return of circa £3 per megawatt hour (MWh) of energy that is made available for demand response through CO*demand*.

Putting that into perspective, Costain's HQ offices operate a HVAC system that – compared with large pumps, fans, heaters or chillers – has a relatively low maximum load capacity of approximately 0.75 megawatts (MW). 0.24MW of that capacity can be made available for demand response. Multiplied by the hours in a year, this equates to 2,122 MWh available per annum.

The combined availability of energy from multiple assets across numerous sites will enable greater returns. Costain's knowledge of assets in the infrastructure and engineering industries allows them to optimise your revenues where possible.

WHAT'S THE COST?

CO*demand* will bear the cost of the initial assessment, purchase of the technology ('Dynamic Demand'), installation and administration of the data for National Grid.

HOW DOES IT WORK?

It is a one-off fit-and-forget solution that is invisible to the end-user.

The technology is installed within the equipment's controls, where it constantly measures electricity consumption and monitors grid frequency. If it detects that the frequency is imbalanced it will temporarily adjust the equipment's power consumption up or down to help balance the grid.

Critically, the technology will never override the equipment's own control parameters, so its performance will be unaffected. Typically loads are only switched for 1 to 2 minutes at a time, and 80% of switches are for less than four minutes.

BENEFITS TO YOU

- **New revenue stream.** Approx. £3 per MWh made available for demand response through CO*demand*
- **Reduce assets' whole life cost.** Receive income to offset capital outlay, asset maintenance costs, depreciation and other lifecycle costs including increasing energy costs

- **Analysis of energy consumption.** CO*demand* can use the consumption data returned from the technology for insight into energy efficiency and optimisation
- **Sustainability credentials.** Dynamic Demand displaces the need for reserve capacity from fossil fuelled power stations which is mandated to provide grid balancing services. In this way, every MW of Dynamic Demand reduces UK CO_2 emissions at a rate of 2,276t of CO_2 a year[1]. It also facilitates renewables such as wind and solar power by providing an agile demand side solution for dealing with their unpredictable nature of supply
- This proven solution is already delivering for Open Energi's customers who include Aggregate Industries and Sainsbury's
- Costain has partnered with Open Energi, providers of Dynamic Demand, to deliver this cutting edge solution to our customers

[1]National Grid, p55, Security and Quality of Supply Standard Amendement, GSR 007, 10th Sep 2009

CONTACT

Claire Baker
Sustainability Solutions Manager
Tel: 01628 842253
claire.baker@costain.com

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COSTAIN GROUP PLC
Costain House, Vanwall Business Park,
Maidenhead, Berkshire, SL6 4UB
Tel: +44 (0) 1628 842444