

» 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. COdemand can bring you a new revenue stream by making your energy-intensive assets available for demand response services.**

The smart technology COdemand 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. COdemand 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 COdemand.

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 but can still be made available for demand response. Operating through a Tridium controller, it adjusts the power consumption of the system in accordance with changes to grid frequency, effectively turning them into 'smart assets'. This is also referred to as 'grid balancing' to maintain the grid frequency between 49.5Hz and 50.5Hz.

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?

COdemand 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 COdemand
- **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.**  
COdemand 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<sub>2</sub> emissions at a rate of 2,276t of CO<sub>2</sub> a year<sup>1</sup>. 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.

<sup>1</sup>National Grid, p55, Security and Quality of Supply Standard Amendment, GSR 007, 10th Sep 2009

## CONTACT

**Christopher Hills**  
Sustainable Solutions Adviser  
Tel: 01628 842 591  
christopher.hills@costain.com

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### COSTAIN GROUP PLC

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



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