



Case study: Mustard Foods

Unlocking growth through energy efficiency

South London food manufacturer Mustard Foods are growing quickly, but achieving their stretching expansion targets was being threatened by the limited size of their connection to the electricity grid. Mustard approached Brite Green to explore the most cost effective way to unlock their growth.

As part of Manufacturing Advisory Service (MAS) funded project, Brite Green reviewed Mustard's existing electrical load and assessed their energy use profile using temporary half hourly meters. Modelling future energy demand based on Mustard's commercial objectives, Brite Green assessed the best technology and management solutions to meet future energy demand, identifying a series of low cost options to enable growth without the need for a new grid connection in the short term.

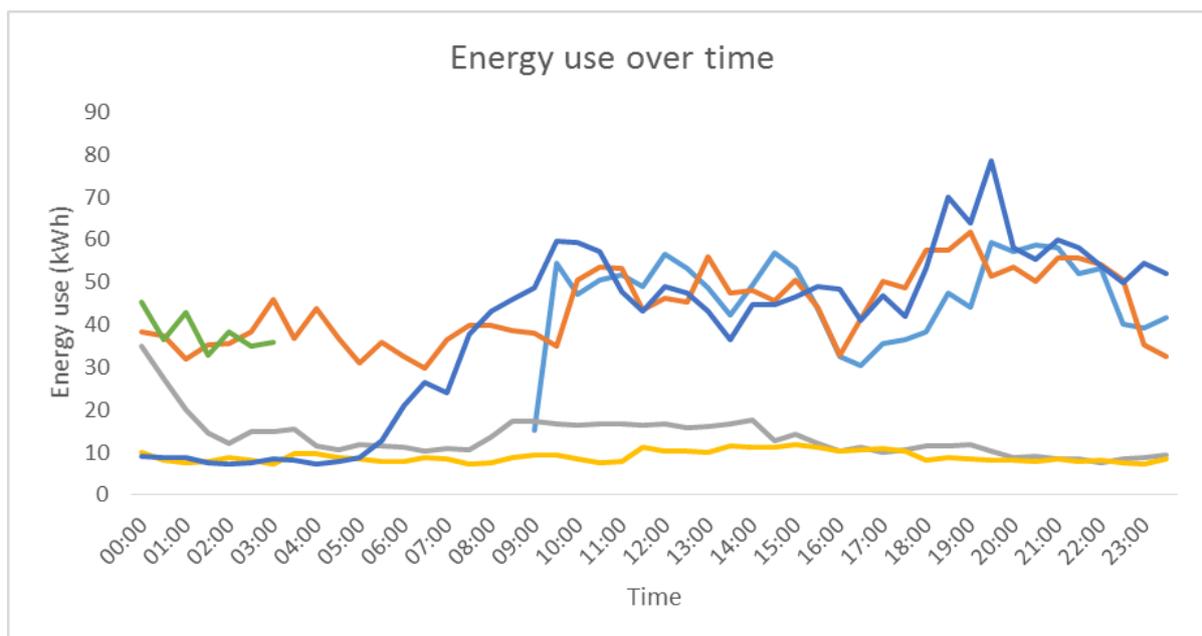
Using energy efficiency to unlock their growth potential

Mustard Foods is a food manufacturer that supplies fast growing chain restaurants across the UK. The company is growing quickly, driven by expanding needs of existing customers and a growing customer base.

However, the company's ability to grow was constrained due to the size of their grid connection at their site in Wimbledon. As there was no additional capacity available at their existing substation, Mustard Foods wanted to better understand what their options were to either increase their grid capacity or increase their energy efficiency to meet their growth in production.

Brite Green undertook a detailed analysis of Mustard's existing and likely future energy demand, and reviewed the feasibility and payback of the options to increase energy efficiency and provide additional capacity.

A clear picture of Mustard's existing energy use was developed using an ISO:50001 energy audit and half-hourly energy use data.



Future energy demand was modelled based on turnover projections and the load profiles of likely additional kitchen and chilling equipment, and six areas of energy management and reduction opportunities were considered:

1. Securing additional supply from the local electricity network
2. Reducing load from existing equipment, including voltage optimisation, LED lighting and upgrading refrigeration condensers
3. Shift management and increased asset utilisation, using weekend and night shift to grow output without requiring additional equipment
4. Measuring, monitoring and controlling energy use using automatic meters, a building management system, and improved energy management processes
5. Generating electricity on site, from solar PV or a combined heat and power unit
6. Re-using waste heat from the kitchen extracts and refrigeration condensers using plate heat exchangers.

The technical and financial feasibility of each option was assessed and the options prioritised based on the marginal energy abatement costs associated with each. Given the cost of a new grid connection, we designed a programme to delay the upgrade, meeting growth needs in the short term through efficiency and improved asset utilisation.

Unlocking growth opportunities through efficiency

Energy metering was recommended for immediate installation to monitor energy usage more closely, alongside Voltage Optimisation which would pay-back in 18 months.

Short term recommendations included extending shift patterns into the weekend and at night and installing LED lighting in the new mezzanine areas. The extended shift patterns offer a 30-40% increase in production capacity without expanding the cooking equipment. These efficiency measures would allow significant increases in production before a new sub-station would be required and would reduce the size of the required additional capacity.

A new grid connection will be required in the medium term when Mustard had achieved a step change in production. At which point a heat recovery system and refrigeration upgrades would also become attractive.

Client Feedback

"Brite Green really took the time to find the solutions that would work best for us, and undertook analysis than we can make informed decisions with. The team were knowledgeable and great to work with, and I would highly recommend them to anyone looking to better understand and improve their energy and environmental performance."

James Durrant, Director at Mustard Foods

Find out more

*Brite Green is an award winning sustainability consultancy. To find out more about how we can help you manage your energy consumption or access grant funding through MAS, the Manufacturing Advisory Service, please **contact us**.*