



CEMEX UK

Process flexibility enables CEMEX UK to capitalise on ENGIE's demand-side services .



Requirement

CEMEX is a global manufacturer of building materials, including aggregates, cement and ready-mixed concrete.

Since 2008, ENGIE has supplied electricity and gas to more than 150 CEMEX UK sites, including its two cement manufacturing plants at Rugby and South Ferriby, and grinding plant at Tilbury.

These three sites account for at least 75% of the company's electricity consumption.

Cement production is an energy-intensive process, and the company's energy managers are always looking for ways to improve energy efficiency, reduce costs and cut carbon emissions.

The solution

The grinding mills that are part of the cement production process can easily be interrupted with minimal impact on the quality of the end product. That makes them ideal for load management – switching off the mills to avoid high electricity prices.

CEMEX UK practises voluntary load management every day, monitoring electricity prices and making decisions about when to switch off the mills to reduce costs.

“Frequency response has been a very successful service for us, which we have worked on in partnership with ENGIE since 2008.

“It has minimal impact on our operations while earning us additional revenue and supporting the wider stability of the UK National Grid.”

Martin Hills, Head of Energy and Carbon, CEMEX UK

Contract key facts

- ☑ Sites contracted: 150 UK sites including:
 - two cement manufacturing plants in Rugby and South Ferriby
 - One grinding plant in Tilbury
- ☑ Contract start: 2008

Maximising the benefits of process flexibility

Martin Hills, Head of Energy and Carbon at CEMEX UK, says: “We know that we can load manage very effectively at most of our UK sites and, in particular, our three cement plants and larger quarries, so we were keen to explore other opportunities to capitalise on this flexibility.”

ENGIE offers a range of demand side response services, which help National Grid to maintain the balance of supply and demand on the national electricity network.

When demand is high, and the system is under strain, National Grid needs to call on energy users (demand side participants) to switch off certain processes, thereby reducing demand and keeping the network in balance.



Rapid-response demand-side service

One of the National Grid services offered by ENGIE is Frequency Response.

This rapid-response service is used to help National Grid maintain system frequency between 49.5Hz and 50.5Hz.

Sudden and dramatic changes on the network can cause system frequency to drop below the desired 49.7Hz.

Frequency Response providers are contracted to respond automatically in these situations to help restore the system frequency, by instantaneously shutting down parts of their processes.

CEMEX chose to participate in Frequency Response because its grinding mills are perfectly suited to this service, being able to provide an immediate response.

ENGIE devised a contract to suit CEMEX and installed low-frequency relays at its three cement plants.

These monitor second-by-second changes in system frequency and automatically trip if system frequency drops below the agreed threshold, switching off the grinding mills.



Valuable extra revenue stream

CEMEX decides when to make its plants available for Frequency Response, according to its production schedules. The company is paid a fee for every half hour that its plants are available.

Martin explains: “We constantly review when to make the mills available for Frequency Response. If we’re up against a tight production schedule, we may decide not to participate, but generally the plants are available to respond 80% of the time.

“That means we’re being paid an additional income through Frequency Response without having to alter our processes at all. We simply have to be aware that our grinding mills could be shut down for short periods without warning.”

If the relays are triggered by a low-frequency event, the grinding processes are switched off for a maximum of 30 minutes. In a typical year, the mills will be shut down through Frequency Response around eight to ten times.

Full service management

ENGIE handles all contractual arrangements with National Grid. CEMEX simply informs ENGIE when it wishes to make its plants available, and ENGIE notifies National Grid.

ENGIE also monitors all Frequency Response communication systems installed at CEMEX. It means that if there are any problems with the equipment, ENGIE can act quickly to investigate and resolve the issue.



For further information please contact:

✉ business.marketing.uk@engie.com

🌐 engie.co.uk