# Leader in Building Materials Keeps Costs Competitive with Demand Response

## With 3–5% Energy Savings for Seven Straight Years, Roadstone Leads the Industry in Energy Efficiency

## Case Study

| | |
|---|---|
| **Industry** | Aggregates / Building Materials |
| **Locations** | Across Ireland |
| **Number of Sites** | 8 |
| **Savings** | 5% of energy spend |

## The Customer

**"What most energy managers in the industry don't understand is that you've got three or four pillars of energy use at your site. Demand response only requires you to turn one of those off at a time."** Kevin Donovan, Energy Manager

Roadstone Ltd, part of building materials group CRH, is one of the globe's major suppliers of construction aggregates, ready mixed concrete, and a host of other related products. They operate from more than 50 quarries throughout the Republic of Ireland.

When the company went public in Ireland in 1949, operational costs were much less of a concern. Over the past decade, running the vast network of energy-intensive machines needed to extract and prepare new materials has become increasingly costly. Rather than increasing prices, Roadstone committed to reducing overheads by becoming more energy efficient.

They recognized that with such a sizable energy spend, even reducing consumption by a few percentage points could mean huge savings. "We knew we needed to lower our energy use if we wanted to keep prices where they were," said Kevin Donovan, Roadstone's Energy Manager. "But we also knew we'd be much more effective if each site engineer was engaged as well."

Donovan began building a culture of individual responsibility across the company. To motivate his sites, Donovan began directly reimbursing each site for any energy cost savings they had.

With the site staff engaged, Donovan began looking for savings opportunities in likely and unlikely places. He oversaw lighting conversions across all sites, and instituted timers on heaters to ensure they wouldn't keep running after workers had left.

He even invested in first-class machine- operation courses for employees who operated crushers, drills and shovels. The cost, in both direct expense and lost time, more than paid off with a fleet of operators that used less fuel and put less wear on their machines.

## The Challenge

Donovan's team's ingenuity has resulted in energy savings of 3-5% year-over-year since 2007. "It's great, but we've pretty much cleared out all the low-hanging fruit," explained Donovan. With fewer opportunities for energy efficiency projects in Roadstone's facilities, Donovan needed a way to continue meeting the company's reduction targets.

Well ahead of most building materials suppliers, Roadstone saw demand response as a strategic advantage rather than an efficiency dampener. "What most energy managers in the industry don't understand is that you've got three or four pillars of energy use at your site," said Donovan. "Demand response only requires you to turn one of those off at a time."

This thinking led Roadstone to participate in a winter peak load reduction scheme with the national grid, which earned them revenue for curtailing during peak usage hours every day of the winter.

But the program was discontinued in 2013, leaving Donovan eager to find another way to earn revenue through curtailment.

## The Solution

Enel X was a perfect match for Donovan, providing much-needed revenue with more flexibility than Roadstone's previous curtailment scheme. Even though most of the eight sites participating in demand response curtail just a few hundred kW, the cumulative reduction provides Roadstone a sizable revenue stream. Moreover, there are no economic penalties for opting out if production cannot be stopped, leaving the company free to put business needs first.

Participation also came at zero capital expense to Roadstone. Enel X paid for the metering equipment that provides visibility into how much each site has curtailed during a dispatch, slowly recovering the costs as a fraction of Roadstone's payout.

Prior to their first dispatch, site engineers met with Enel X analysts to develop site-specific curtailment strategies. When called, engineers have between 30 and 60 minutes to follow the agreed-upon strategy, shutting down or scaling back machinery around the site.

Most of the equipment site engineers have taken off-grid during dispatches—rock crushers, conveyors, and grinders—isn't backed up by on-site generators. But because dispatches are so infrequent, Donovan saw this as an opportunity for sites to tend to much needed maintenance projects.

"It's no trouble for our guys at all," explained Donovan. "Some of these maintenance projects take several hours, so dispatches are a perfect time to do them."

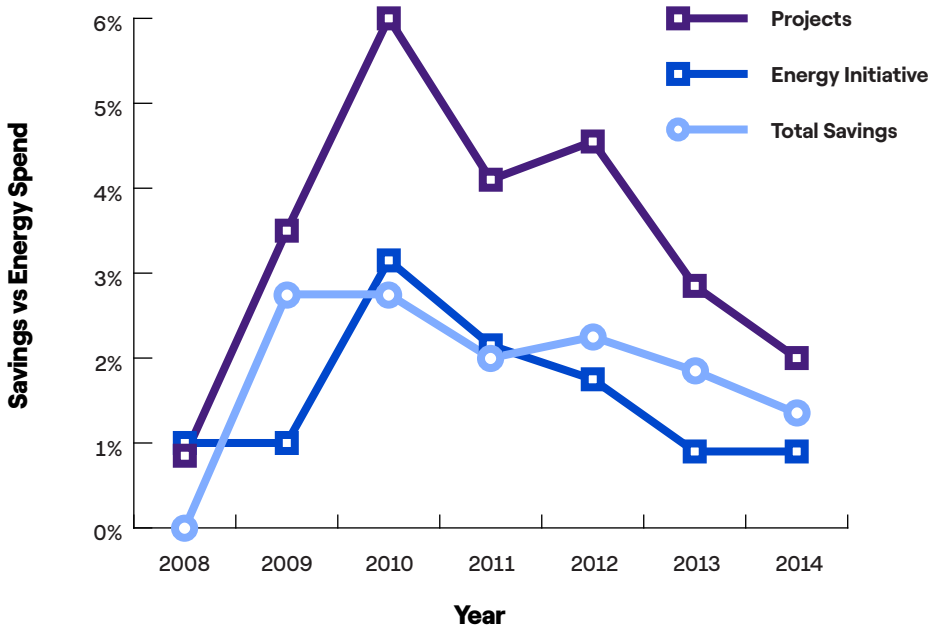
**"[Demand response] is no trouble for our guys at all. Some of these maintenance projects take several hours, so dispatches are a perfect time to do them."**
Kevin Donovan
Energy Manager

**For further information, please reach out to us at:**
**enelxuk@enel.com or enelxireland@enel.com**

# In 2014, Roadstone's unique focus on energy management and cross-group collaboration made them the first quarry ever nominated for a Sustainable Energy Authority of Ireland Award.

## Energy Management Savings

Over the past six years, Roadstone has reduced total corporate energy spend by at least 1% every year, averaging closer to 3% in annual spend reduction. As Roadstone adds sites to the demand response scheme it projects increasing energy initiative savings year-over-year.




## The Future

With the pressure still on Donovan to post 3-5% energy cost reductions each year, Donovan is looking to implement demand response at every site possible. Thus far, demand response has single-handedly met Donovan's savings targets at each participating site, making it a one-stop solution for Roadstone's reduction goals next year.

Roadstone's eagerness to increase its demand response participation is boosted by the positive feedback the company has heard from the sites currently enrolled. Site engineers are pleased with the revenue they get back from demand response, and haven't felt the scheme disrupts their production at all.

**For further information, please reach out to us at:**
**enelxuk@enel.com or enelxireland@enel.com**