



BGC Improves Efficiency and Earns Revenues with EnerNOC Demand Response

Australian construction leader earns more than \$400,000 annually from energy reductions at eight diverse manufacturing sites

Fast Facts:

Industry:
Construction and Manufacturing

Location:
Headquartered in Perth, WA

EnerNOC Application:
 DemandSMART

DR Program:
DemandSMART Western Australia

DR Strategy:
Curtailment

Primary DR Strategy:
Temporary manufacturing shutdown
(4 hours maximum)

Annual DR Payments:
Approximately \$400,000

THE BIG PICTURE

BGC (Australia) Pty Ltd is a diversified construction and contracting organisation based in Western Australia, with a presence that extends throughout Australia and New Zealand. One of Australia’s largest residential builders, BGC provides expertise and leadership stretching from the quarry to the manufacturing of building materials, to residential and commercial construction.

BGC is also one of the top 200 energy users in Australia. As part of its commitment to improving efficiency, BGC strives to eliminate waste of natural gas, diesel, and electricity. In 2011, it made EnerNOC DemandSMART™ a key part of its energy management strategy, becoming EnerNOC’s first enabled DemandSMART customer in Australia. Eight BGC facilities—ranging from quarries to cement mills to

manufacturing facilities—now participate in demand response by halting operations temporarily to reduce energy use and protect the grid in WA.

“At BGC, we’re ‘waste haters.’ We look for any chance to reduce waste and increase efficiency throughout our operations,” explains Carl Barrett, risk and sustainability manager. “Energy is a significant input cost for our business, so we see EnerNOC demand response as a good fit with our ongoing efficiency initiatives.”

By shutting down temporarily, BGC sites remove up to 5 megawatts (MW) of energy demand from the grid—earning the business more than \$400,000 in annual payments.





EnerNOC and BGC identified energy reductions at a variety of sites—including quarries, cement mills, and manufacturing facilities—to streamline program participation for each facility

CREATING A CURTAILMENT PORTFOLIO

BGC encompasses a broad portfolio of companies covering all aspects of the construction value chain, from raw materials to completed homes. Despite BGC's wide range of materials, products, and services, one key quality unites them all: energy-intensive equipment and processes. The company created its Energy Efficiency Opportunities program to reduce energy use throughout the enterprise and, in turn, lower BGC's overall carbon footprint. It quickly determined that demand response could be a natural extension of these energy management initiatives.

BGC's commitment to reducing energy use begins at the highest levels. "Making demand response part of our operations was achieved through top-level leadership," says Barrett. "I found out about curtailment opportunities in the newly created Western Australia electricity market and took it to our Managing Director, Sam Buckeridge, who was immediately engaged in the process." This high-level support for demand response extended through general managers, operations managers, and technical staff, inspiring broad commitment to the program and enabling fast progress.

"We began by identifying facilities that had the capacity to reduce energy use temporarily without major issues," says Barrett. "These facilities have stockpiles of finished products that allow them to shut down for a few hours." BGC enrolled eight facilities, including quarries, cement mills, facilities that manufacture concrete pavers and retaining blocks, a plasterboard manufacturing facility, and brick-making plants. Each facility found ways to shut down all operations temporarily or turn off ancillary equipment while continuing main manufacturing operations. EnerNOC helped BGC conduct energy assessments to develop custom energy reduction plans that minimise disruptions to operations.

BGC facilities deliver curtailment ranging from 60 kilowatts to more than 3 MW—representing a total of approximately 5 MW across the portfolio.

"Demand response may sound complicated," says Barrett. "But in practice, EnerNOC makes it very simple." Operations personnel receive notice via email and mobile phone of an impending dispatch. Production continues until the nominated dispatch time, minimising waste. Then the selected manufacturing processes are shut down manually for a maximum of four hours. At the conclusion of the dispatch, EnerNOC alerts BGC, and operations resume normally.

Local support is one of the key elements that encouraged BGC to select EnerNOC as its partner for demand response—and one of the reasons for successful implementation. "The key point for us is that we have to have people here in Western Australia who understand our needs and are available to help resolve any issues," says Neil Chamberlain, Operations Manager of Cement Production. "One of the reasons we selected EnerNOC is that we knew that we would have a reliable local contact. I can call my EnerNOC rep on my mobile phone and know that I'm not being rerouted thousands of miles away. Local support with international backing—that's what we get with EnerNOC."

In addition, operations-level discussions between EnerNOC and BGC personnel ensure successful dispatch—and provide the opportunity to resolve any issues.

"The EnerNOC team has been approachable and responsive to our requests at both an

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Sam Buckeridge, Managing Director

operational level and a corporate level,” says Barrett. “Dealing with a local EnerNOC contact made BGC’s enrolment and assessment easy to complete, and allowed us to integrate demand response into our operations.”

THE RESULTS

The eight BGC facilities that are part of EnerNOC demand response represent around 90 percent of BGC’s overall electricity use. During dispatch, these

facilities can curtail significant load by shutting down equipment such as crushers, mills, a packing plant, and lighting. Curtailment is quick and efficient. In all, it takes as little as half an hour—delivering much needed capacity during periods of peak usage.

BGC’s 5 MW energy reduction earns the company payments of more than \$400,000 annually from EnerNOC—funds that go

back to the participating facilities.

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THE BENEFITS

BGC sees EnerNOC demand response as part of its overall commitment to reducing waste—and to passing along the related savings to its customers. “BGC products have always been premised on affordability,” says Buckeridge. “We try to capture every efficiency we can and pass it through to our customers.”

Beyond the financial impact, participating in EnerNOC demand response brings a range of powerful benefits to the company.

BUSINESS CONTINUITY

Energy is a major issue in WA, and BGC is acutely aware of the challenges posed by blackouts and reliability issues. “We’ve been



With DemandSMART data, BGC can see the impact of machinery that they’ve turned off—enabling BGC to maximize dispatch performance.

What is Demand Response?

Demand response provides payments directly to organisations that choose to reduce energy use during times of peak demand. EnerNOC DemandSMART is the industry’s most comprehensive demand response application, allowing businesses to get the most value from their participation in demand response programs throughout Australia, New Zealand, the United States, Canada, and the United Kingdom. EnerNOC works closely with organisations to define customised energy reduction strategies and ensure successful performance during dispatches. EnerNOC absorbs enablement costs and protects program participants from any penalties that may be incurred for not meeting reduction targets. Demand response helps stabilise regional energy resources without requiring construction of new power plants—benefiting utilities, energy users, and the environment.

Want More Information?

BGC is just one of the many innovative organisations in WA and beyond that benefit from EnerNOC’s comprehensive energy management applications.

To find out more, please visit www.enernoc.com/get-started.

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Neil Chamberlain, Operations Manager of Cement Production

through blackouts before, and we’re glad to be able to do whatever we can to help protect the grid,” says Chamberlain. By participating in demand response, BGC protects its facilities, other companies, public facilities in the region, and residential users.

LOCAL SUPPORT

By working with EnerNOC, BGC gains a partnership that starts locally, but stretches throughout the EnerNOC organisation. Answers and expertise are readily available via EnerNOC’s team in WA—with support from further afield when necessary.

“There’s a certain amount of cynicism in Western Australia about being able to get the service we need, since we’re an isolated area,” says Barrett. “We’re all too aware of the tyranny of distance and its impact on service. So it’s a major point of differentiation that EnerNOC is local—and responsive.”

LOW IMPACT

Flexibility in the supply chain and manufacturing stockpiles enable BGC to participate in demand response without affecting its overall operations. Some of its facilities operate 24 hours a day, so BGC can simply make up for production at other times. Other facilities have warehouses of finished products. The result? Demand response seamlessly integrates into manufacturing plans without sacrificing overall progress or throughput.

INTERVAL DATA

During implementation, EnerNOC worked closely with BGC to integrate DemandSMART—EnerNOC’s comprehensive demand response application—into its facilities. DemandSMART provides real-time energy data, which creates new insights on energy consumption.

“DemandSMART gives us instant information that we’ve never had access to before,” says Chamberlain. “Now we can access interval data for all sites that are part of EnerNOC demand response. With DemandSMART data, we can see the impact of machinery that we’ve turned off—providing a clear diagnostic function.”

THE FUTURE

BGC is exploring implementing EnerNOC DemandSMART at other facilities in Australia, including traditional office buildings. “We’ve picked off the biggest energy users with our first group of facilities,” says Barrett. “But we’re interested in adding other facilities to the portfolio, since it will let us curtail more—and provide us with access to DemandSMART information for those facilities.”



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