

Bristol Water trials new market innovation to cut energy costs

‘Make money by doing nothing’ brings up 1,540 million results in Google, as unsurprisingly it is a popular topic. But most people would agree it is not easy to achieve.

However, Bristol Water’s Energy Management Team has been able to generate revenue at its Barrow site near Bristol without doing anything new at all, thanks to a new innovation delivered by npower Business Solutions, Energy HQ (nBS, EHQ).

“We’ve been working with Bristol Water for nearly 20 years as part of a long-term partnership,” says nBS, EHQ Client Lead Steve Peill. “As large energy consumers – using around 80GWh of electricity each year – we are always looking for ways to help them buy and use energy smarter and benefit from new innovations.”

Like many larger consumers, a number of Bristol Water’s energy-intensive sites reduce consumption during the 4pm to 7pm period of peak demand over the winter season, in order to reduce transmission, distribution and Capacity Market charges.

For National Grid’s Transmission Network Use of System (TNUoS) charge alone, this can amount to six-figure annual savings.

“But as an essential utility that has to provide and process water and related services around the clock, some of their activities cannot be interrupted,” explains Steve.

So to save on peak charges at Bristol Water’s Barrow reservoirs site, where consumption turn down is not possible, the water company instead switches to onsite generation whenever there is a suspected Triad period.*

“Our Triad Warning Team work with Mike Sumbler, Water Supply and Energy Manager at Bristol Water, to provide intelligence to help reduce peak demand costs,” says Steve. “The team closely monitors a range of parameters relating to national energy demand, then each time they issue a Triad warning, the engineer at Barrow switches on the on-site generator, so negating the need to import power from the grid.”

While this reduces peak-demand-related non-commodity costs, it also frees up around 0.5 megawatt of power when market prices are potentially at a high.



"After doing some initial analysis, we suggested that Bristol Water trial our new Market Access service at their Barrow site," says Steve. "Market Access facilitates the selling back of power freed up by demand management when the market peaks."

To participate, the only thing Bristol Water needed to do was give permission. "As our engineer was already running a generator in response to Triad warnings, it was easy to piggyback Market Access onto this, without requiring any extra work or effort on our part," explains Bristol Water's Mike Sumbler.

"The npower team monitored the market on our behalf, and if the price on the Day Ahead or APX Within Day market was higher than our purchase price for the Triad Warning period, their Optimisation Desk Team would notify us and sell back our excess power," continues Mike.

"We started late in the season, and due to milder winter weather and comfortable supply levels, we didn't see the market highs of previous years. We also had a few communication issues at our end. But this trial was to 'suck it and see' – and we still made money for essentially nothing much extra at all."

Mike, Steve and the Energy HQ Team are now looking at how best to maximise energy revenues and savings for Bristol Water for the next winter season, using Market Access and other demand management approaches.

"With Market Access, it's possible to respond to any market peaks – not just potential Triads," explains Steve. "We can experience spikes due to a number of factors, including unplanned power station outages, interconnector failures or colder than average weather, with prices historically hitting as much as £500 a megawatt. Our Energy HQ Team can also automate generator response, eliminating the need for any customer involvement other than agreeing to participate."

Expanding the remit of Market Access is something Mike and his colleagues at Bristol Water are keen to explore. "We are currently putting a new pump scheduling optimisation system in place, and we hope to integrate services like Market Access and other initiatives to maximise energy cost savings across our estate," says Mike. "After people, energy is our largest expense, so finding new ways to reduce costs is really important to us."

There are also new opportunities for demand management emerging. "Ofgem is looking to weaken peak-charging signals for non-commodity costs from 2021/23 – but location will be key," explains Steve. "We are also seeing new demand side response initiatives start to emerge from Distribution Network Operators, as they start to take a more proactive role in balancing local supply and demand. So now is an ideal time to assess the potential for any business."

*Triads are the three half hours of peak national demand between 1 November and the end of the February. They are calculated retrospectively by National Grid. Consumption during those periods will then determine how much consumers pay for National Grid's TNUoS charges.



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