

Safeguarding resilience and generating new revenue for a global data center provider

Through intelligent asset optimization, Centrica Business Solutions generated cost reductions and unlocked a significant new revenue stream for this global data center provider, while continuously safeguarding their site's resilience.



As a global leader in enterprise IT and networking solutions, this organization is a trusted global data center provider. Their data center in London carries business critical information, and it's vital that their customers can access this 24/7.

Unscheduled downtime is financially and reputationally damaging, so they must have a consistent and uninterrupted power supply. To mitigate risk, the organization invested in two 2MW back-up diesel generators which could be harnessed if a power outage occurred. In time, the organization recognized that the reliability of these generators was critical, but that much-needed updates were required to the aging generator controls.

Intelligent asset optimization

Partnering with Centrica Business Solutions, the organization decided to enroll the assets in the Capacity Market; alongside harnessing them for Triad avoidance, which is the equivalent to cap tag management in the US, and Distribution Use of System (DUoS) avoidance, which is equivalent to utility demand charges. This would generate non-commodity cost reductions and unlock a significant new revenue stream, which would cover the cost of replacing the generator control systems alongside delivering ongoing income. What's more, regularly running the generators would also help to continually confirm the reliability of the units in the event of a power outage.

Centrica Business Solutions delivered a complete solution to maximize revenues, while also safeguarding the resilience of the data center. A generator control panel and communication units were installed, to allow for two modes of operation: resiliency and running synchronized to the grid. This also facilitated remote operation and monitoring of the generators. In addition, updating the wider electrical infrastructure enabled the assets to seamlessly operate in emergency back-up power mode, as well as parallel running mode to synchronize to the grid when exporting power. These modifications were completed on each generator sequentially, which crucially minimized any back-up power downtime.

The Route to Market services were initially delivered using Centrica Energy Trading's platform, which provides an end-to-end optimization technology that enables remote scheduling of the organization's assets for energy market participation. This software provided

24/7

asset
monitoring

4MW

of flexibility across two
back-up generators

Why Centrica Business Solutions?

- Generate revenue by reducing consumption during periods of peak demand on the grid.
- Access new markets with our automated advanced Demand Response solution to access lucrative markets requiring fast response.
- Minimize risk and view curtailment in real-time with energy insights and our desktop/mobile app, PowerRadar™.
- Participate without disruption leveraging on-site generation such as standby generation for Demand Response.
- Ongoing support provided by our dedicated Demand Response Operations team.

advanced real-time data, control and visualization of their run strategies, with the ability to generate any reports that were required for asset management needs. This service is now provided through Centrica Business Solutions' enhanced PowerRadar™ platform.

Comprehensive operational support

Our Asset Optimization Team worked with the organization to agree an operating strategy, which set parameters and triggers for trading. This was designed to provide them with the optimal financial benefits, while ensuring that the resilience of the data center always took priority. If a capacity market event arose which fit within the operating strategy, Centrica Energy Trading's platform would automatically dispatch the assets for ramping up periods and then turn off the asset at the end of the scheduled run time. If an event

was unsuitable, the process allowed for it to be rejected too.

This process was supported by a control desk which operated on a 24/7 basis, to ensure appropriate decisions were made around the scheduling and dispatch of the assets. They also provided guidance as to the optimum times to schedule planned maintenance, and the control philosophy ensured that the resiliency requirements would always take precedence over running the generators in the energy market. This meant that the generators were always available to the data center as a back-up power source, whenever they were required.

A dedicated support line was established to enable the organization to directly speak to the Centrica Business Solutions control room, providing ongoing assurance that the assets would be managed in the most effective way. Centrica Energy Trading's platform also provided automated alerts to the organization itself, with confirmation of the traded periods.

IT security safeguarding

Since the data center managed critical, and potentially sensitive, customer information, it was vital that the program was underpinned by comprehensive IT security safeguards.

Centrica Energy Trading's platform was directly connected to the generator panel and controlled through a secure VPN tunnel. The cloud server was only accessible via secured, encrypted HTTPS and SSH connections, and all connections and data transfers were end-to-end encrypted using IP SEC VPN connections. These security credentials ensured that anyone external would be unable to connect onto the same network, and so safeguarded the data center resiliency assets from unauthorized access.

Unlocking a new revenue stream

The end-to-end scheduling and optimization platform, clear operating strategy, 24/7 Asset Optimization Team and

comprehensive IT security strategy underpinned the program's ability to predict and capture market revenues.

The assets were enrolled in the capacity market, which aims to ensure there is sufficient, reliable energy supply to meet peak demand in future years, by financially rewarding organizations who invest in new capacity or keep existing capacity open. Harnessing 24/7 monitoring, Centrica Business Solutions were able to respond to stress events when they occurred, and remotely dispatch the assets as required. These processes also underpinned the Triad and DUoS avoidance operations, enabling the Asset Optimization Team to start the generators when a Triad was likely to occur or during a grid Red Band, when operating costs were at their highest.

Since energy market pricing can be volatile, with high price spikes for relatively short periods of time, the Asset Optimization Team could capture additional revenue from these pricing opportunities. If the price of power in the energy market exceeded agreed minimum generation costs, they would arrange to run the generator units for a profit. Trades could be done for the following day or later the same day, if the price reaches a pre-agreed trigger point.

Underpinning the resilience of the data center

By efficiently managing the generators in the capacity market and in Triad and DUoS avoidance operations, Centrica Business Solutions were able to unlock a lucrative new revenue stream for the organization, while also securing non-commodity cost reductions.

Most importantly, the program helped to underpin the resilience of the data center. Replacing their aging back-up generator controls and regularly running the generators in response to market events have led to a direct increase in reliability for the data center. Harnessing the expertise of the Asset Optimization Team alongside sophisticated, end-to-end optimization software enabled the assets to be monetized, without compromising on the data center's resilience at any stage.