NHS Crown Commercial Service Supplier

KiWiPOWER demand management

NHS Hospital case study

KiWi Power leads the way with healthcare providers

Key project benefits

- Annual revenues: £ 100,000+
- Zero setup costs
- No disruption to operation of sites
- Reduction of CO_2 emissions
- Access to real time energy management dashboard with enhanced monitoring features

Partnering with Colchester Hospital University NHS Foundation Trust for demand response

Colchester Hospital University NHS Foundation Trust has two main sites, Colchester General Hospital and Essex County Hospital. The The Trust employs more than 3,400 people providing healthcare services to around 370,000 people from Colchester and the surrounding area of north east Essex. Colchester General Hospital opened in 1984 and is one of Essex's largest facilities. Their care covers 596 inpatient beds, 44 maternity beds and 12 critical care beds (excluding A&E).

Colchester Hospital University NHS Foundation Trust successfully oversaw the investment and overhaul of the mechanical and electrical infrastructure of the site in 2012. A key objective of this project was to upgrade and improve the resilience and testing regime of its backup generation.

When KiWi Power approached the Trust, their energy and senior team recognised immediately the vast potential of demand response for their site in fulfilling three key objectives:

- Enhance the Trust's resilience testing regime
- Generate a new and recurring revenue stream
- Improve triad management and increase utility bill savings.

KiWi Power Ltd, 45 Broadwick Street, London W1F 9QW | +44 (0)207 183 1030 | info@kiwipowered.com | www.kiwipowered.com

How KiWi Power delivered for Colchester Hospital:

Assessment and design

- KiWi Power's engineers visited the sites to meet with facilities management and operations staff to assess existing systems and identify appropriate assets for use in demand response.
- The Trust has multiple generation assets, spread across different units. It has an existing parallel agreement with the distribution network to run the generators to offset significant load. This is managed by up to five low voltage diesel units of different capacities spaced around the hospital at key connection points.
- A detailed project management plan, installation assessment and risk assessments were created for the initial phase of installation and control.
- KiWi Power designed a solution allowing the remote control of the generators and notification of the relevant members of staff in the event of a demand respond event.

Installation

- KiWi Power worked with Colchester Hospitals' existing contractors in order to bring the hospital online in a structured, phased way.
- KiWi Power installed proprietary demand response, one minute real time metering hardware which integrates with onsite voltage metering systems.
- KiWi Power used both existing programmable logic controllers (PLCs) and installed new control solutions to enable the increase in capacity as new sets came online. This enabled full remote control of the generators without any site intervention or disruption.
- Data is collected wirelessly from the meter through pulsed outputs at different points and reported via KiWi Power's control centre to National Grid.

Delivery

- When a demand response event is activated by National Grid, the diesel generators synchronise to the mains and export spare capacity back to National Grid. This is all performed using the fully automated, internet protocol solution provided by KiWi Power.
- This process was rigorously tested and a full onsite training programme was completed prior to going live.
- The entire project was delivered within time, quality and cost parameters.

A word from our client

"We were particularly impressed with KiWi Power's work for the Trust in maximising our generator operating revenue within a short period of time. KiWi Power commenced our programme with just 1MW base load and within two months they installed and connected a further 0.4MW. KiWi Power assists with full 3.8MW export capacity providing earnings of over £100K per year!

"KiWi Power also carries out our peak tariff avoidance (Triad) remotely now meaning we make considerable savings and no longer have to operate this manually. KiWi Power has carried out triad management for us providing consistent savings in an ever increasing cost market."

Vall Rasaratnam Energy & Sustainability Manager, Colchester Hospital University NHS Foundation Trust

About KiWi Power

KiWi Power is the UKs leading demand response aggregator and has been a key player in the UK market since 2009. We are passionate about driving innovation in technology to create efficiencies, generate commercial opportunities and promote a green agenda. We work confidently with policy makers and system and network operators, navigating the energy landscape to provide clients with robust and best in class technology and hardware.

Combining proprietary hardware and software and experienced teams, KiWi Power delivers significant commercial returns and sustainability benefits to large consumers of electricity, utilities and grid operators.

Demand response is a unique and powerful application using technology to reduce electricity consumption at peak times across industrial and commercial sites. This creates a greener, more cost effective grid, reduces the need for inefficient backup power stations and provides vital balancing requirements and security of supply to system operators and end user sites.

KiWi Power's innovative approach is leading the way in evolving the UK demand response market as well as influencing the design, build and operation of demand response programmes around the world.

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