KiWiPOWER
demand management

KiWi Power
Powering innovation in energy technology

Developing new residential demand response mobile app

MAYOR OF LONDON

The Mayor of London, Boris Johnson, has awarded a £20,000 prize to KiWi Power to help households in big cities use their energy more efficiently and reduce the risk of power shortages.

The prize is part of the annual international Cities Summit which brings together the world's largest metropolises to share knowledge and ideas for a more sustainable future. The KiWi Power smart meter mobile application and energy service will alert householders to peak hours, remind them to switch appliances off and give energy saving advice, taking pressure off the national grid and enabling them to share in the cost savings.

Stamatis Kasmas, Technology Deployment Manager at KiWi Power said; *"KiWi Power has been successfully helping businesses reduce their energy demands since 2009 and we are now the UKs most successful commercial aggregator. Winning this award is both recognition of this success and an exciting opportunity for us to evolve our leading technology into helping households become more efficient."*

Pioneering the use of Electric Vehicles for demand response

Electric Vehicles (EVs) are seen as an important sustainable alternative and governments see them as key to cutting emissions and reducing global warming. However the combined impact of mass vehicle charging at peak times of the day would put the existing electricity grid under extreme pressure.

The challenge lies in creating a smart system to recognise charging behaviours and manage demand efficiently. Without smart charging, the use of EVs is likely to result in higher electricity costs to end users and poor reliability of electricity supply.

KiWi Power is working with Shell on a trial to understand and measure the potential value that managed smart charging will provide. A smart charger would monitor and control multiple charging assets, optimise these for peak time use and demand response purposes – reducing overall electricity costs.

Together with Shell, KiWi Power has designed a smart system that looks for charging behavioural patterns and identifies best times for inclusion in demand response and frequency response programmes. The first pilot for the programme is taking place in London with additional trials planned across three global markets.

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Commercialising Europe's largest battery storage project

The future of smart grid success lies in clever and commercial use of battery storage. As technology has evolved and prices of batteries decrease, this presents a real opportunity. The development of battery storage is now a critical component in securing the stability of the electricity grid system. Batteries are ideally suited for multiple uses including: peak load shifting, providing backup or reserve capacity to support renewables, energy trading, grid constraint management and frequency response.

KiWi Power is involved in several cutting-edge initiatives including Europe's largest storage project to date - the Smarter Network Storage in Leighton Buzzard. This project has secured £18.7m of public and private funding and tasked with improving understanding of the economics of electrical energy storage.

Other key players in the project include UK Power Networks, National Grid, Newcastle University, Samsung and Imperial College. The 6MW/10MWh Samsung battery in Leighton Buzzard is the size of three tennis courts and can store enough energy to power about 6,000 homes for 1.5 hours, at peak times.

KiWi Power is working to help monetise battery usage and generate payback from this significant investment by managing its participation in different ancillary service programmes.

KiWi Power also works globally with large electricity consumers including commercial and industrial customers, leading battery manufacturers and engineering, procurement and construction companies to install commercial battery systems at greenfield and brownfield sites (behind the meter).

UK Power Networks Services

SAMSUNG

Helping SMEs use demand response with revolutionary new micro building management system

Innovate UK

University of Southampton

KiWi Power has designed a project to deliver an innovative and affordable building control system allowing small to medium sized businesses to participate in peer-to-peer energy sharing. This project will enable smaller businesses to work together to control and automate energy production and consumption while participating in a localised energy market. This opens up new sectors of the economy to participate in demand response and time of use electricity pricing programmes.

KiWi Power has been awarded funding for the research project by an Innovate UK grant. The project is led by KiWi Power who will also develop the overall system and pilot including creation of new hardware, cloud services, and user interfaces.

KiWi is collaborating with a best in class consortium of partners including: Southampton University who will model and simulating the peer-to-peer energy market and provide optimisation expertise; and Swanbarton who have made available their Micro Grid Storage Manager (MGSM) to optimise storage behaviour.

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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