

# Maximising existing renewable assets



## Dr Alex Mardapittas, CEO of Powerstar, discusses the role of energy storage to provide uninterruptible power supply (UPS), maximise existing renewable assets, and contribute towards achieving carbon neutrality for UK businesses

Currently, the UK stands in the midst of an energy trilemma, with fears over increased energy consumption, excessive CO<sub>2</sub> emissions and steep energy costs, causing governmental and societal expectations to increase pressure on UK businesses to hit ambitious energy targets in the name of a low-carbon future. In addition, doubts over the stability of the supply continue to rise as the UK moves towards a greener energy future supported by renewable generation, which is as variable as the weather, and therefore causes issues for the balancing of the supply and demand of energy.

Through the implementation of a smart energy storage solution, fears over energy resilience can be alleviated with full uninterruptible power supply (UPS) capabilities and sustainable targets contributed to through the ability to maximise existing on-site renewable generation to reduce reliance on the antiquated energy grid. Additionally, when integrated with voltage regulation technology, it can further reduce energy consumption and CO<sub>2</sub> emissions, assisting in the pursuit of carbon neutrality as part of a sustainable future. Furthermore, by being able to deliver demand response it can provide additional revenue opportunities to businesses.

### THE IMPORTANCE OF ENERGY RESILIENCE

Energy resilience has not always been on the agenda for UK businesses. However, it has quickly become an important aspect for many organisations due to recent advancements in technology, leading to increased reliance on technology for the day-to-day operations of

many companies. This increased use of electrical equipment within businesses, from automated processes to advanced IT systems, has allowed for greater productivity resulting in enhanced customer expectations in the efficiency and quality of products and services. This puts a lot of pressure on supply chains, and any disruption to operations is costly both financially and in terms of the reputation of an organisation.

Furthermore, the increased use of electrical equipment has led to the greater demand and consumption of energy, which places further strain on the National Grid.

### UPS IS CRITICAL FOR MODERN BUSINESSES

Due to the expanding operations of businesses to provide the best solution for their clients, it is essential that companies can reliably deliver on time. However, ever-growing demand is causing energy related failures to become more common, with Centrica's resilience report last autumn highlighting that 81 per cent of participants reported an energy related failure. This poses a risk to operations as well as a business's bottom line, with Centrica's report also unearthing that energy related failures can cost businesses as much as 17 per cent of annual revenues.

A solution exists through the ability of leading-edge energy storage solutions to offer full UPS capabilities, which offer security of supply in the event of a blackout or brownout, allowing the system to automatically and, in some cases, seamlessly support the site independently of the grid. This negates the potentially costly loss of power and allows the company to continue its

operations at a time when it would otherwise be interrupted for an unknown period of time, wasting valuable resources in the process.

### MAXIMISING EXISTING GENERATION

In addition to issues of energy resilience, rising energy consumption, and the inflated costs they give rise to, ambitious decarbonisation targets from the UK Government is encouraging continued exponential investment into renewable sources for businesses. This is evident when considering the recent achievement in April 2018, which saw the UK cease its reliance on coal power for three consecutive days as renewables contributed to a greater share of the mix. However, renewable generation sources, such as solar (PV) and wind, are not always reliable and can suffer from periods of low generation (e.g. if the wind stops blowing) or excess generation (e.g. during particularly sunny days). Both scenarios can be troublesome for businesses that require a constant and reliable supply of energy, and the latter in particular means the excess energy generated will be wasted. By utilising smart energy storage this energy can be captured and stored for later use, allowing on-site generation to be used to its full potential, minimising wasted energy.

Other forms of generation can also be optimised, such as CHP systems operation. This often varies due to the energy needs of customers, resulting in the overgeneration of either electricity or heat and causing wasted energy due to the costly and challenging nature of exporting excess energy. In these situations, the technology can greatly reduce wasted energy when tied to CHP systems providing an optimised use of energy. When attempting to maximise existing renewable generation and technologies, it is important to source a reputable solutions provider that offers a bespoke smart energy storage solution in order to meet customer's unique requirements and take full advantage of the benefits it can provide.

### FLEXIBLE FUNDING FOR BUSINESSES

Smart energy storage solutions are becoming a growing opportunity as leading providers begin to introduce flexible funding options, allowing companies to implement the technology without paying up-front costs. Compared to an outright purchase, flexible finance options allow organisations to spread the cost of investment. An example of this is Powerstar's finance options, which can provide leasing, hire purchase and storage as a service (STaaS) to its customers. This enables Powerstar to provide a bespoke, comprehensive solution without capital outlay, designed to the specific requirements of the customer in both financial terms and technical capabilities. Powerstar delivers a range of bespoke solutions, designed and manufactured in the UK. To find out more on its solutions, visit the website below.

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