

Energy storage for peak shaving st george

Many businesses in the UK are susceptible to peak load spikes. This is where the electricity demand rapidly increases during a particular period causing a spike in demand on the grid. This can be due to a number of scenarios. It could be a daily occurrence as operations ramp up in the morning or when particular industrial processes start up. It could be as a result of seasonal demands - when additional cooling or heating systems are required. Or it could be down to increasing electricity demands caused by the electrification of vehicles or machinery on site.

Whatever the cause, peak shaving can help to mitigate these spikes, smoothing out the demand curve and avoiding sudden demand in electricity usage that can strain the grid, and lead to higher costs, potential power outages and increased carbon emissions.

There are lots of benefits to peak shaving. It helps businesses operate more efficiently, reduces the need for additional power capacity that is only then used during peak periods, and enhances the overall stability and reliability of the electricity grid.

A business on a variable tariff may see its energy costs increase at times of high demand. This is because electricity prices go up to disincentivise use, while during much quieter periods, prices are correspondingly lower. These prices per kilowatt (kW) are often referred to as peak and off-peak tariffs, reflecting those demand levels.

On top of this, there are two pricing mechanisms that apply to businesses. The Distribution Use of System (DUoS) is calculated by the amount of energy a business uses and businesses are incentivised to reduce their energy usage at key times of the day. The second mechanism is Transmission Network Use of System (TNUoS) and this is calculated on net consumption volumes to encourage businesses to become more energy efficient. Peak shaving is a key component in reducing reliance on the grid and therefore additional costs.

Peak shaving can also ensure that a company does not breach its maximum import capacity (MIC), also known as a kVA allowance. This is a limit on how much energy you can use and exists to ensure that every business gets a fair share of the total electricity available. If you exceed your MIC, you will face significant surcharges from your energy provider. We have worked with companies that were paying tens of thousands of pounds a year in MIC charges. You can read more about the importance of avoiding MIC charges in our dedicated article [here](#).

By avoiding peak load spikes, a business can contribute to lower carbon emissions by using energy at less carbon-intensive periods and therefore reducing the reliance on fossil-fuel-based power plants. This is an important point for businesses motivated by net zero targets.

Companies can put in place energy management measures or even a full energy management system (EMS). This can shift certain business activities to off-peak times or temporarily reduce energy-intensive processes. The advanced metering and monitoring offered by an EMS will enable a business to have better real-time control and management of electricity consumption, allowing for more targeted peak shaving strategies.

Companies are also increasingly turning to rooftop solar arrays as a way of peak shaving. Local power generation sources can supplement the grid's power supply during peak hours, reducing the strain on the grid at times of high electricity use. However, maximising the use of solar will be key as part of an overarching peak shaving strategy.

The inclusion of battery energy storage alongside solar PV can help optimise generation. By storing excess energy during periods of low demand and releasing it during peak demand times, a business reduces the need to draw power from the grid. This ensures that a business can efficiently use every solar kilowatt it produces.

In addition, a BESS can act like an energy reservoir. It can be easily instructed to draw power from the grid during off-peak periods, and then provide that power to your premises during peak periods.

A BESS can be programmed to monitor loads and automatically kick in when needed. Good examples of this could be storing excess solar through the day for use in the morning as processes ramp up or in the evening when electric vehicles or machinery need to be charged.

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