Monaco energy storage for load shifting

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Unlike many energy cost-saving strategies that focus on reducing the amount of energy used, load shifting addresses the timing of energy use. In this article we explore what it is and how to gain maximum benefits.

For instance, an industrial process might be postponed to a different time when energy costs are lower or grid demand is less intense. This strategic shift can yield significant energy cost savings or enable participation in demand side response (DSR) programs, making the benefits outweigh any potential production delays.

Every industrial plant has a built-in margin within its controls to allow for maintenance or unexpected failures. With the right technology, this margin can be leveraged for controlled load shifting, also known as energy flexibility. This can be achieved by:

The energy landscape has become more dynamic and diverse, driven by three core goals: decarbonising, decentralising, and digitalising the electricity system. The increased integration of renewable energy sources, such as wind and solar, introduces variability in supply and cost stability. Load shifting helps businesses navigate this complexity by:

In the context of cost reductions, load shifting is often referred to as peak shaving, which helps businesses avoid the high costs associated with peak demand periods.

Most industrial and commercial sites do not operate continuously, leading to fluctuating energy demand. By charging commercial batteries during non-peak times and discharging them during operational hours, businesses can significantly reduce peak demand charges.

Energy storage solutions also allow electricity generated on-site from solar PV or combine heat and power systems, for example, to be stored and used when it"s most advantageous.

Load shifting is generally energy neutral, meaning it does not reduce the total amount of energy used. While it helps lower demand charges, it doesn"t necessarily reduce overall usage charges, as the postponed activity will still consume the same amount of electricity when eventually performed.

However, it still supports sustainability efforts. By shifting loads to participate in frequency response events, businesses contribute to the grid"s ability to integrate intermittent renewable energy sources, reducing reliance on carbon-based power plants.

Effective load shifting relies on intelligent energy platforms. GridBeyond"s technology, for example, enables automated load shifting and helps businesses place their energy flexibility in the market for optimal returns.

This technology analyses market conditions and determines the best opportunities for frequency response, energy trading, peak avoidance, and other strategies to ensure that the benefits of shifting electricity consumption outweigh the costs.

Now halfway into 2024, its relevance and importance continues to grow. With the global push towards net-zero emissions, businesses are increasingly expected to adopt sustainable practices. Load shifting not only provides economic benefits but also supports broader environmental goals by enabling greater integration of renewable energy sources.

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