VIRTUE

ENERGY STORAGE SOLUTIONS

What is Energy Storage Technology?

Energy storage works by capturing electricity produced by both renewable and nonrenewable resources and storing it for discharge when required. The solution allows users to come off the grid and switch to stored electricity, at a time most beneficial, giving greater flexibility and control of electrical usage.

The electrical energy grid requires a balance between supply and demand. At times of low demand, when there is excess supply energy it can be stored for use at times of high demand, with low supply, thus adjusting to provide the required balance between supply and demand.

This approach is especially effective with renewable generation, which has a volatile output capacity. Solar and wind, for example, generate little amounts of power in the absence of sunshine or wind. Energy storage is able to smooth out the supply from these sources to provide a more reliable supply that matches demand.

Benefits of Energy Storage

Energy storage is key to achieving overarching low carbon and electrical network efficiency targets by:

- Deferring or avoiding investment in network reinforcement
- Reducing the need for conventional generation, including peaking power plants
- Meeting binding targets with lower renewable capacity
- Maximising the use of low carbon, inflexible generation
- Optimising balancing of the system on a minute by minute basis

At grid level, energy storage reduces stress on the electrical network infrastructure, increases the proportion of renewables on the grid and increases reliability of renewable generation.

For large electricity consumers, energy storage provides flexibility in electricity supply and eliminates the risk of network interruption by providing full Uninterruptible Power Supply (UPS) capabilities, reducing the likelihood of energy related failures which can total as much as 17% of annual revenues.

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What is Powerstar VIRTUE?

VIRTUE, Powerstar's behind-the-meter (BtM), battery energy storage solution allows for greater control and flexibility of electricity usage, providing an integrated energy management and microgrid solution with smart grid control.

Key applications of Powerstar VIRTUE

As a bespoke product, the applications of VIRTUE energy storage can be adapted to suit the requirements and priorities of each client. However, the key applications of the solution are as follows:

- Energy storage for maximising renewables and other assets (e.g. CHP)
- Supply resilience through full site-wide UPS capabilities
- Time shifting and peak shaving activities
- Demand Side Response (DSR) and Grid Contracts
- Electric Vehicle (EV) charging

Benefits provided by Powerstar VIRTUE

- Supply resilience (through full UPS capabilities)
- Energy optimisation through voltage regulation
- Harmonics reduction and power quality improvements
- Maximises renewable generation

- Minimise transmission costs (Triads)
- Minimise distribution costs (peak DUoS)
- Capacity market (CM) levy avoidance
- Average reduction of 25% off your electricity bill

- Balancing services: frequency response
- Balancing services: energy arbitrage
- Capacity Market (CM)
- Renewable portfolio balancing

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