



What a UK hospital reveals about the future of commercial energy storage

The addition of battery storage to an existing solar installation shows how commercial sites can get more value from renewable generation they already have. For organisations with high energy demand, the technology offers greater flexibility over when electricity is stored, used or drawn from the grid.



Essential equipment, lighting, ventilation and other services contribute to a consistently high base load. Storing surplus generation rather than exporting or curtailing it allows more of that renewable electricity to be used by the hospital itself.

From solar generation to energy optimisation

For many years, the focus of commercial solar projects was relatively straightforward: install panels, generate renewable electricity and reduce dependence on the grid. That is changing as sites look more closely at when energy is generated and when it is actually needed.

Commercial sites can generate large amounts of solar power at times when onsite demand is lower. Grid constraints may limit how much surplus electricity can be exported, while changing electricity prices can affect what that export is worth. Battery storage gives operators another option, allowing surplus energy to be kept onsite and used later.

For hospitals, where electricity demand is both substantial and continuous, that flexibility can be particularly valuable.

'Healthcare sites operate in one of the most demanding energy environments possible. They require absolute reliability, around-the-clock operation and are under increasing pressure to reduce both costs and carbon emissions,' said Sandy Woodward, European General Manager at Solis.

'What battery storage unlocks is the ability to turn solar energy into a far more flexible and controllable asset. Instead of renewable energy only being available when it is generated, hospitals can now store and intelligently use that energy when it delivers the greatest operational and financial benefit.'

Adding battery storage to an operational hospital also involves considerations beyond capacity and performance. Existing generation and electrical infrastructure must be taken into account, alongside safety, access and the need for normal hospital operations to continue.

At RJA, a modular approach allowed the storage and inverter capacity to be integrated around the requirements of the existing site.

The project also reflects a broader change in the way commercial sites think about solar. The question is no longer only how much electricity can be generated, but how effectively that energy can be used when it is needed.

Why storage is gaining importance across Europe

SolarPower Europe forecasts strong growth in Europe's battery energy storage market, with installed capacity approaching 400 GWh by 2029. That growth is being driven by a combination of rising electricity costs, grid constraints, electrification and the need for greater flexibility in how energy is used.

Hospitals are among the buildings with the highest energy demand in modern society. They never truly switch off. Critical equipment operates around the clock, heating and cooling systems run continuously and electricity demand remains high throughout the day.

At the same time, public healthcare organisations across Europe are under growing pressure to reduce operating costs, improve energy resilience and cut emissions, all without compromising patient care.

A recent energy storage installation at The Robert Jones and Agnes Hunt Orthopaedic Hospital (RJA) in Oswestry, UK, offers a practical example of how solar generation and battery storage can work together to address that challenge.

Delivered by ZLC Energy, the project includes more than 3 MW of solar capacity across rooftops and car park canopies, using around 7,500 solar panels. The system is expected to generate between 2.5 and 3 GWh of

renewable electricity annually, equivalent to the electricity used by around 600 homes, while offsetting approximately 75% of the hospital's electricity demand.

The site originally operated without battery storage, which meant excess renewable energy generated during periods of high production could not always be fully used onsite. Six 109 kWh SolisStorage commercial battery units, connected to Solis 50 kW hybrid inverters, have now been added to the installation.

Working in parallel, they provide more than 600 kWh of storage capacity. The system can capture surplus solar energy during the day and make it available later as solar generation falls while demand across the hospital remains high.

The storage capacity was designed around the hospital's significant and continuous energy demand, together with the opportunity to make better use of the solar generation already available onsite.

Healthcare, manufacturing, logistics, retail, agriculture and data centres face different operating conditions, but many share the need to control energy costs while maintaining reliable power and meeting sustainability targets.

For sites that already have solar installed, battery storage can be a logical next step. Rather than replacing existing infrastructure, storage can increase the amount of solar generation used onsite by retaining surplus daytime electricity for later demand.

That makes retrofit projects increasingly important. Businesses and public sector organisations with solar already in place can add storage to make better use of the electricity those systems are already producing.

What commercial users need from storage

As commercial storage projects become larger and more complex, the practical details matter. Installers need systems that can be commissioned efficiently, integrated with existing equipment where required and maintained without unnecessary disruption. Reliability, software management and technical support are also important, especially on sites where continuity of operation is critical.

Commercial customers are also looking for more than backup power. They want to use more of their own solar generation, reduce grid imports, manage energy costs and improve resilience.

The SolisStorage system used at RJAH forms part of Solis's wider commercial storage range. Solis also offers the EverCore commercial energy storage solution, with up to 261 kWh of storage capacity, paired with a 125 kW hybrid inverter for higher demand commercial and industrial applications.

The important point for commercial users is how generation, storage, power conversion



and energy management work together around the needs of the site, rather than storage capacity alone.

The future role of AI in commercial energy

The next step in commercial energy management is likely to involve greater use of artificial intelligence. At RJAH, battery storage is being used to capture surplus solar for later use. In future, AI could allow sites such as RJAH to manage stored energy more dynamically.

Through platforms such as SolisCloud, energy management using AI could take account of expected solar generation, site demand, battery state of charge, electricity prices and import or export limits. Instead of responding only to conditions as they occur, a system could use forecasts and expected demand to help decide when it is most effective to store or use energy.

For a hospital or other large energy user, that could mean moving from a mainly reactive approach to one that can plan ahead using forecast conditions and expected demand. It is one example of how commercial buildings and industrial sites could play a more active role in managing their own generation, storage and consumption.

A model for other sites with high energy demand

For RJAH, combining solar generation with battery storage is already allowing more renewable electricity generated onsite to be retained for the hospital's own use.

'This project marks a significant step forward in how we manage energy across the hospital estate. By combining large-scale solar generation with battery storage, we're able to make better use of the renewable energy being produced onsite, helping reduce our reliance on grid electricity, lower costs and support our wider sustainability ambitions.

'We believe this creates a strong model for other hospitals and healthcare facilities to follow, particularly those already investing in solar but not yet unlocking its full potential,' said Ben Huband, Estates Compliance & Energy Manager at The Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust.

For other organisations with significant and sustained energy demand and solar already installed, RJAH offers a useful lesson. Generating renewable electricity is only part of the picture. Being able to store that energy and use it later can help sites make more of what they already produce, reduce reliance on the grid and give them greater flexibility over when energy is used.

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