

Battery Energy Storage Systems in the Midlands

CASE STUDY

Battery Energy Storage Systems (BESSs) are essential to unlock the full potential of renewable energy by managing variations in renewable generation, storing surplus electricity and releasing it when there is a shortfall. This provides much needed balance and resilience to our electricity grid. Five large-scale BESS projects associated with 230MW are already operational in the Midlands with another 1.6+ GW of projects with planning permission.

Up to 25 GW of electricity storage will be required in the UK by 2030 to support the increased installation of renewable generation. Battery Energy Storage Systems (BESS) are essential to unlocking the full potential of renewable energy by storing energy generated during periods of oversupply, such as when it is windy, and then releasing power back into the national electrical network when there is greater demand. Batteries respond rapidly to sudden changes in electricity supply and demand, acting as a 'first line of defence' to keep the energy system stable.

Moreover, when connected to private wire networks, they can also swiftly deliver power to strategic nearby locations that require multi-megawatts of power, such as for rapid EV charging. All this means BESS projects will help create a smarter, more flexible energy system.

There are five 30MW+ BESS projects currently operational in the Midlands.

- Buzzleholme battery storage in Sandwell is a 50MW BESS built and operated by EDF Renewables in northwest Birmingham. The BESS is connected to the transmission network via a local substation and provides flexible energy to the grid, with 100MWh storage capacity. This project went live in October 2023 and can power over 100,000 homes for 2 hours.
- Coventry battery storage is another 50MW BESS built and operated by EDF Renewables in northeast Coventry with 100MWh storage capacity. It went live in December 2023.

- Enderby battery storage in Leicestershire is a 50MW BESS built by Stratera Energy and owned and operated by Gresham House Energy Storage Fund plc. It has the capability to power 110,000 homes for two hours.
- Brigg Energy Park in Lincolnshire has a 50MW BESS operated by Centrica Business Solutions which went live in November, 2024. It is capable of supplying 11,000 homes with electricity for a full day.
- Buxton battery storage in Derbyshire is a 30MW BESS with enough capacity to power 90,000 homes for two hours. The facility was energised in April 2024 and is built and operated by Atlantic Green.

Other large-scale BESS projects that have received planning permission in the Midlands include a 300MW system at Cellarhead near Stoke-on-Trent currently under construction (Atlantic Green), a 350MW system at Hams Hall in North Warwickshire due to complete in 2026 (Luminous Energy), a 500MW BESS at West Burton in Nottinghamshire due to begin construction in 2026 (Fidra Energy), and a 500MW system in Blaby in Leicestershire due to complete after 2029 (Exagen).

