



BATTERY ENERGY STORAGE SYSTEM (BESS)

DEVELOPMENT IN FARNHAM, KENT, UK



Power

Value	Multi-million
Voltage	33kV
Capacity	20MVA
Client	Undisclosed
Duration	10 months
Date	March 2023



Pre-construction

JSM employees completed the detailed design which included cable schedules & calculations, protection drawings, Distribution Network Operator (DNO) substation design, auxiliary transformer design, battery sizing calculations & equipment schedule. Design approval was granted from the DNO and Client.

Construction

- The compound construction included site clearance, earth grid installation, plinths to house 11nr batteries, 6nr transformers and the DNO & Client switchrooms, internal road and walkways along with full compound fencing.
- In total, 700m of 33kV cable was installed both on and off-site.
- In line with DNO standards, 1nr 2 panel 33kV switchboard and ancillary equipment was installed and commissioned within a GRP enclosure. An auxiliary transformer was also installed to provide a LV AC supply.
- The BESS infrastructure included the installation of 11nr batteries with associated cable installation and terminations. This also included installing a fibre cable and between battery cable connections.

Post-construction

Works included hot commissioning, energisation and providing As-Built records.

- Principle designer
- Designer
- Compound construction
- Compound earthing
- DNO switchgear & substation
- Installation of 11nr Batteries

- Civils
- 33kV Cables & Duct installation
- LVAC supplies
- Jointing & Terminations
- Hot and cold commissioning with Energisation

PROJECT CHALLENGES

CHALLENGE



Coordination of works

The non-contestable works being completed by UK Power Networks involved their contractor working alongside JSM within an already constrained site.

Plant installation

Due to site constraints the 11nr batteries, each weighing 32ton, required a complex lift to their final resting position.

SOLUTION



The programme of works produced by JSM included UKPN's non-contestable scope to ensure efficient coordination of works. Regular site liaison meetings were held between JSM & UKPN which resulted in a seamless delivery.

To ensure the ground was able to support the 300ton crane, JSM completed a temporary works design and constructed the ground reinforcement in accordance with the design.

