

20MVA BATTERY ENERGY STORAGE SYSTEM

Farnham, Kent

SCOPE — Electrical Protection Design · Substation Engineering · Installation · Procurement · Commissioning & Adoption · Energisation

VOLTAGE
33kV

CAPACITY
20MVA

PROGRAMME
10 months

SECTOR
Renewable / Storage

CLIENT
JSM (Tier 1 Principal Contractor)

END CLIENT
BESS developer (undisclosed)

PLANT
11 batteries / 6 transformers

DELTA HV ROLE
Tier 2 HV specialist contractor

PROJECT OVERVIEW

Delta HV delivered the electrical engineering, installation and commissioning scope for a 20MVA battery energy storage compound housing eleven battery units, six transformers and separate DNO and client switchrooms. Delta HV produced the detailed electrical design and gained DNO and client approval, procured and installed the 33kV switchgear, auxiliary transformer and secondary systems, and took the site through cold and hot commissioning to energisation, adoption and as-built handover alongside the DNO's own non-contestable works.

DESCRIPTION & OVERVIEW OF WORKS

Electrical protection design	33kV protection and interface design, protection drawings, settings and grading, and G99 and power system studies supporting DNO and client design approval.
Substation engineering	DNO substation design, auxiliary transformer design for the site LVAC supply, battery sizing calculations and equipment schedules, cable schedules and calculations, and earthing design and reporting.
Installation	Installation and commissioning of a 2-panel 33kV switchboard and ancillary equipment within a GRP enclosure, auxiliary transformer and LVAC supplies, DNO and client switchroom fit-out, protection panels and secondary wiring, and terminations to 700m of on and off-site 33kV cable plus fibre and inter-battery connections.
Procurement	Procurement of protection relays and panels, auxiliary transformer, battery chargers and DC systems, metering, LVAC distribution, and HV terminations and accessories.
Commissioning & adoption	Cold commissioning, secondary injection, settings application and verification, functional and interface testing, witnessed DNO adoption testing, and delivery of the as-built and completion pack.
Energisation	Hot commissioning, on-load testing and energisation of the 33kV switchboard, transformers and BESS plant, followed by completion and handover.

Technical highlight — interface with non-contestable works

The DNO's non-contestable works were executed by their own contractor alongside Delta HV within an already constrained compound. Delta HV worked to a programme that carried the non-contestable scope alongside the contestable works and held regular site liaison meetings with the DNO, keeping switchgear delivery, cable terminations and commissioning sequenced without clash or standing time.

