

50MVA 132/33kV BESS SUBSTATION

Salisbury, Wiltshire

SCOPE — Design & Redesign · Substation Engineering · Electrical Protection Design · Civils & Groundworks · Panel Manufacture · Installation · Commissioning & Adoption · Energisation

VOLTAGE
132/33kV

CLIENT
Wärtsilä

CAPACITY
50MVA

END CLIENT
SSE Renewables

PROJECT VALUE
£3.4M

SECTOR
Renewable / Storage

PROGRAMME
9 months

COMPLETED
March 2023

PROJECT OVERVIEW

Delivered for Wärtsilä on behalf of end client SSE Renewables, this 50MVA 132/33kV connection and battery energy storage installation was designed, built and commissioned by Delta HV within a nine-month programme from handover to completion. The inherited G2E design presented significant challenges to adoption, so Delta HV took the decision to redesign the system in full — resolving the adoption route while protecting the client's programme. Close collaboration across design, civils, plant and protection disciplines saw the works completed in March 2023 with successful DNO adoption and handover.

DESCRIPTION & OVERVIEW OF WORKS

Design & value engineering	Full system redesign and detailed design across primary, secondary, civil, structural, drainage and electrical disciplines, with value engineering solutions that saved time and cost during the build.
Electrical protection design	Protection design reviews, settings configuration and implementation, and off-site protection panel build at Delta HV's own manufacturing facility.
Civils & groundworks	Civils, ground works, drainage, foundations and hardstanding, together with below and above ground earthing systems.
Installation	132kV and 33kV plant, transformer and switchgear installation; 132kV and 33kV cable jointing and terminations including specialist manufacture terminations; multicore and telecontrol cable installation, termination and testing; and LV lighting, small power and heating.
BESS interface	33kV battery energy storage interface — inverter and container connections, cabling and terminations.
Commissioning, adoption & energisation	Final testing and commissioning through to energisation, DNO adoption and handover, alongside SSE Renewables' adoption of the storage assets.

Technical highlight — redesigning an inherited scheme to secure adoption

The G2E design inherited at handover presented significant obstacles to adoption. Rather than work around them, Delta HV took the decision to redesign the system in full, resolving the adoption route while holding the client's programme. Problem solving across design, civils, plant and protection disciplines, open communication and rigorous adherence to safety standards delivered the scheme in nine months to a successful DNO adoption.

