

132kV ENERGY-FROM-WASTE CONNECTION

Belvedere, Bexley / Dartford

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

VOLTAGE
132kV

CABLE ROUTE
10.6km

PROGRAMME
25 months

SECTOR
Energy from Waste / Renewable

CLIENT
JSM (Tier 1 Principal Contractor)

END CLIENT
Energy recovery operator (undisclosed)

ADOPTION
Adoptable grid connection

DELTA HV ROLE
Tier 2 HV specialist contractor

PROJECT OVERVIEW

Delta HV provided the electrical design, installation, testing and commissioning scope for a new 132kV supply supporting energy recovery operations, delivered across a 10.6km route including tidal river pipe-bridge crossings and directional drilling. Delta HV engineered the protection and interface schemes, delivered the substation electrical engineering, installed and tested the high voltage route, and took the connection through commissioning, adoption and energisation to produce a compliant, adoptable and durable grid connection.

DESCRIPTION & OVERVIEW OF WORKS

Electrical protection design	132kV protection and interface design, single line diagrams, protection settings and grading, and design submissions for host network approval.
Substation engineering	Electrical design of the connection substation and termination arrangements, LVAC and auxiliary supplies, cable schedules and sizing calculations across the 10.6km route, and earthing design and reporting.
Installation	Installation and termination of the 132kV circuit including bridge-mounted and insulated stainless-steel duct sections, HV cable containment and securing systems, and substation secondary systems.
Procurement	Procurement of protection and control equipment, HV cable accessories, terminations, containment and ancillary materials.
Commissioning & adoption	Full route testing, cold commissioning, protection settings verification, functional and interface testing, witnessed adoption testing and issue of as-built and completion records.
Energisation	Hot commissioning and energisation of the 132kV route, with handover to the operator and adopting network.

Technical highlight — Special Engineering Difficulties

Multiple constrained crossings required compliant HV containment solutions engineered to survive a tidal, flood-exposed environment: precast parapet-mounted containment with insulated stainless-steel ducts, Ø610mm CHS pipe bridges on piled plinths above the 1:100 + climate change fluvial level, and PTFE sliding bearings to absorb thermal and structural movement without compromising circuit integrity.

