nationalgrid

Bolney Submission Summary

National Grid Electricity Transmission
Eligibility Letter

May 2026

T3 – Bolney 400 kV Site Strategy

Executive Summary

Background

Bolney is an existing 400 kV transmission node in Sussex. This proposed investment extends the Bolney 400 kV AIS substation to enable contracted customer connections.

The investment is load-driven and is intended to provide the capacity and interfaces required for low-carbon generation and embedded demand, battery energy storage (BESS) demand and solar Photo Voltaic (PV) demand. The investment supports timely customer connections at a strategically important South-East node and forms part of NGET's wider South-East network strategy.

The project is submitted under the RIIO-ET3 Load Re-opener mechanism and seeks confirmation of eligibility, approval of the needs case and preferred solution, and Pre-Construction Funding.

Investment Drivers

Customer connections:

- The investment is required to connect multiple contracted customers at Bolney, including DNO demand, offshore wind, BESS / PV and grid stability services.

The existing 400 kV substation configuration cannot accommodate the required additional bays, transformer arrangements and customer interfaces without reinforcement.

The investment enables CP2030-critical generation capacity, including offshore wind and BESS demand, supporting the integration of low-carbon generation and storage.

Options

A structured optioneering process was undertaken, considering:

- Options A, B and C: Do nothing, market-based solution and non-transmission whole-system solution – were discounted because they would not facilitate the contracted connections and would not meet contractual and licence obligations.
- Option D-1: AIS extension of the existing 400 kV busbar with new SGT6 bay, feeder bays and tertiary connection – was shortlisted.
- Option D-2: AIS extension of the existing 400 kV busbar with a new Bus Coupler 1 Bay and Grid Park Connection – was shortlisted.
- Option D-3: AIS extension of the existing 400 kV busbar with new SGT6 Bay and Grid Park Connection – was shortlisted.
- Option D-4: extension of the 400 kV substation towards the eastern side by AIS busbar connection with a new GIS substation (Hybrid Option) – was shortlisted.
- Option E-1: Complete New AIS/GIS Substation – was discounted because a new substation was not required and would be more costly than extending the existing site.

Preferred Solution

The preferred solution is Option D-1: AIS extension of the existing 400 kV with new bays and a tertiary connection.

Option D-1 is preferred because it meets the contracted requirements while minimising cost to consumers, outage dependency, land take, environmental impact and delivery complexity. It can be partially constructed offline on available National Grid land, provides convenient access for maintenance and operation, and avoids the additional grid park or hybrid GIS infrastructure required by the alternatives.

Key outputs include **delivery of multiple new connections** at Bolney 400 kV, **increased connection capacity and operability**, **improved operational resilience and flexibility**, and **support for renewable generation, storage and future customer connections** in the South-East.