nationalgrid

Berkswell Submission Summary

National Grid Electricity Transmission

Eligibility Letter / Needs Case

May 2026

T3 - Berkswell 275kV Demand Connection

Executive Summary

Background

This investment relates to the extension of the existing Berkswell 275kV air-insulated substation to facilitate a contracted electricity demand connection for High Speed 2 (HS2). The scheme forms part of National Grid Electricity Transmission's (NGET) obligation to connect customers under licence conditions and supports the delivery of HS2 traction power infrastructure.

The proposed intervention involves extending the existing substation to create a new Grid Supply Point (GSP), including the installation of new Super Grid Transformers (SGTs), to meet the current contracted demand for this customer.

The project is being developed under the RIIO-T3 Load Re-opener (Track 3) mechanism and builds on optioneering and design work previously submitted through the T3 Engineering Justification Paper (EJP) for Berkswell, updated to reflect revised HS2 requirements and programme changes.

Investment Drivers

The key driver for the investment is:

Customer connections (primary driver):

- Contracted connection for HS2 traction demand at Berkswell, required to meet licence obligations to provide a physical connection.
- Two Battery Energy Storage System (BESS) connections at Gate 2 are to be installed at the site, alongside the new HS2 connection using existing spare space.

Failure to progress the scheme would result in NGET being unable to fulfil contractual commitments to customers and maintain compliance with its transmission licence obligations.

Options

A structured optioneering process considered a range of strategic and technical solutions, including:

A. Do nothing
B. Market-based solutions
C. Whole-system (DNO-led) solutions
D. Make use of existing assets
E. New build substation

Following assessment, all options except Option D were discounted, as these could not be made to meet contractual, technical, or deliverability requirements.

For Option D, two credible shortlisted options were identified:

- Option D-2: Mesh corner extension with SGTs in a separate (remote) compound
- Option D-3: Mesh corner extension with SGTs located within the extended substation compound

Both shortlisted options were then assessed against cost, deliverability, engineering feasibility, environmental considerations, and stakeholder constraints.

Preferred Solution

The preferred solution is Option D-2: Mesh corner extension with a separate (remote) SGT compound. This solution involves extending the existing 275kV substation and installing new SGTs in land acquired under HS2-Act consented land, adjacent to the existing compound.

Key features and benefits of this option include:

- Meets the HS2 connection requirement while maintaining compliance with licence obligations
- Maximises use of existing infrastructure and land secured under the HS2 Act
- Reduces programme and construction risk relative to alternatives
- Provides flexibility for future HS2 expansion (including space for additional SGTs)
- Does not impede the connection of other contracted connections at the site.

Although this option is marginally higher cost than the alternative, qualitative assessment supports its selection based on deliverability, reduced outage risk, improved layout flexibility, and future-proofing benefits.