nationalgrid

Banwen Submission Summary

National Grid Electricity Transmission
Eligibility Letter

May 2026

T3 – Banwen

Executive Summary

Background

Banwen is a load-driven investment to create a new 400 kV connection node in the Hirwaun area of South Wales. The investment is primarily required to meet DNO's requirement for a new Grid Supply Point (GSP), and a Battery Energy Storage System (BESS) customer connection.

The existing Rhigos 400 kV substation cannot provide an efficient or deliverable route for the required connections. Rhigos 400 kV is near full capacity, has limited extension potential, and cannot accommodate the super grid transformers (SGTs) required without disproportionate civil, environmental and consenting risk.

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 primary driver is DNO's requirement for a new GSP in the Hirwaun area.
- Gate 2 BESS customer.
- Future optionality: Additional BESS customers that formed part of the original customer background now hold Gate 1 offers following Connections Reform. They do not form part of the immediate contracted delivery requirement, but the preferred design preserves proportionate future expandability if later need materialises.

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 deliver the required compliant customer connections.
- Option D – extension of the existing Rhigos 400 kV substation – was discounted because Rhigos is constrained, near full capacity, and cannot accommodate a new GSP requirement without significant engineering, environmental and consenting challenges.
- Option E-1 – new 400 kV double-busbar AIS substation on the eastern side of the preferred site – was shortlisted and selected as the preferred option.
- Option E-2 – new 400 kV double-busbar AIS substation on the western side of the preferred site – was shortlisted but is less favourable due to greater earthworks, longer OHL entry arrangements, higher interaction with environmental features and reduced future expandability.
- Option E-3 – new 400 kV GIS substation – was shortlisted for comparison, but discounted as the preferred solution because NGET’s policy is AIS first unless environmental, spatial or public visual amenity factors preclude AIS.

Preferred Solution

The preferred solution is Option E-1: a new 400 kV AIS double-busbar substation on the eastern side of the preferred Banwen site.

Option E-1 was selected because it meets the contracted requirement, is the lowest-cost shortlisted option, and has the strongest overall balance across constructability, environmental performance, future expandability and delivery risk. Compared with Option E-2, it has shorter and more direct OHL entries, lower earthworks requirements, reduced interaction with woodland and surface water features, and better future extension potential. Compared with Option E-3, it aligns with NGET’s AIS-first policy and avoids the materially higher cost of GIS in this circumstance.