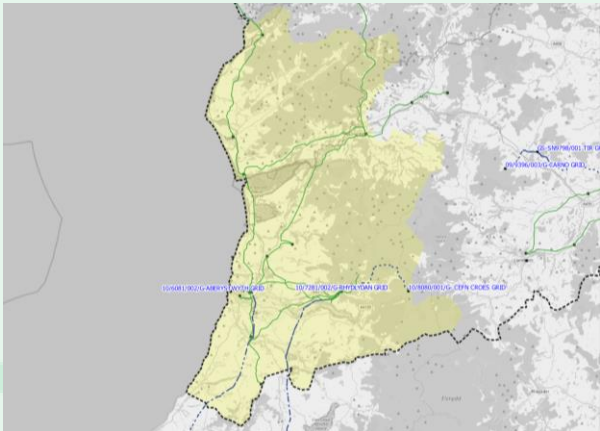


Aberdyfi-Harlech 33kV reinforcement

Reinforce, supported by flexibility



The SP Manweb (SPM) network in Mid Wales around Aberystwyth, Aberdyfi, Machynlleth, Tywyn, Fairbourne, Barmouth, Dyffryn Ardudwy and Harlech is supplied by the Aberystwyth-Rhydlydan 33kV group. This group supplies ca. 22,800 customers, including a major industrial area in Glanyrafon and several recreational/tourist destinations spread across the network. The group is predominantly fed from long, overhead line circuits from Swansea North GSP within the National Grid Electricity Distribution (NGED) license area.

Constraint

VOLTAGE

The group is presently at voltage limits and suffers from marginal voltages excursions outside of statutory limits, which are presently being operationally managed. Studies indicate that the additional demand growth and LCT uptake in RIIO-ED2 will lead to steady state and voltage step issues beyond operational management for N-1 33kV outages during periods of high demand and low generation.

Decision

Reinforce, supported by flexibility

Install ±10MVA_r STATCOM with associated 33/11kV transformer at Aberdyfi primary substation and a 5MVA_r mechanically switched capacitor (MSC) bank at Harlech. Contract flexibility services to support the network during the project delivery.

Justification for decision

Flexibility services are not suitable to mitigate the voltage step issues as the response time needs to be fast acting in real-time. Therefore, reinforcement is being progressed. This innovative solution has significantly higher Net Present Value (NPV) to conventional reinforcement options considered, which include a new grid substation and new circuits.

Flexibility product

Scheduled Utilisation

Constraint season(s)

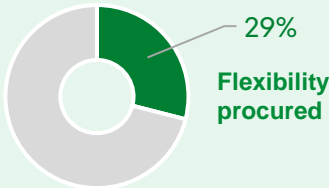
Winter

Flexibility guide price

Availability fee up to **£270/MW/hr**
Utilisation fee up to **£330/MWh**

Reinforcement timescale

2027/28



Flexibility position at March 2024	2023/24	2024/25	2025/26	2026/27	2027/28
Risk duration (hours)	0.0	0.0	2.5	18.0	48.0
Peak flexibility required (MW)	0.0	0.0	1.7	4.7	8.8
Flexibility procured (MW)	1.2	2.1	0.0	2.8	1.6
Flexible MW capacity met (%)	>100%	>100%	0%	60%	19%

Flexibility Tendering

Open

We are tendering for flexibility services at this location.

More information is available on the [PICLO Flex website](#)

Technical Appraisal

More detailed technical information on the nature of the constraint, network impacts, solutions considered and selected intervention are available in this scheme's [Engineering Justification Paper](#)

To ensure that our plans and publications cover the needs of our stakeholders, customers, and the communities we serve, we welcome ongoing feedback.

Feedback can be emailed to: systemdesignteam@spenergynetworks.co.uk