Flexible Connection Options

Information for customers on the options available for connecting to the network

Flexible Connection Offers

Flexible Connections are connection arrangements whereby a customer's export or import of electricity is managed (often through real-time control) based upon contracted and agreed principles of available capacity.

We will consider flexible connection options wherever a connection request triggers reinforcement at a cost or timescale exceeding the thresholds in the table below.

Voltage Level	Time to Complete Works		Cost of Reinforcement
LV	No threshold	Or	No threshold
11kV	>12 months		>£75,000
33kV			
66kV	>18 months		>£100,000
132kV			

What is a Flexible Connection?

In this context, a Flexible Connection is where WPD require the demand or generation to be curtailed (or reduced or disconnected) under certain conditions in order for the network to remain within operational limits and to comply with ENA Engineering Recommendation P2 (Security of Supply).

Flexible Connection Options

A number of flexible connection options are available where reinforcement costs or timescales exceed the thresholds detailed above. Examples include:

Timed Connections: Based on time of day, day of week or seasonal factors. By understanding the conditions which would adversely affect the network and limiting the output during certain time periods, the connection can be permitted without the requirement for extensive reinforcement.

Export Limitation Schemes: These schemes measure the apparent power at the exit point of the installation and use this information to either restrict generation output and/or balance the customer demand in order to prevent the Agreed Export Capacity from being exceeded. The equipment required for export limiting is customer owned and provided, to WPD minimum standards.

Load Managed Connections: These make use of real time SCADA based monitoring and analysis to determine the ability of the network to accommodate the customer's load (generation or demand). When network conditions are such that the full load cannot be accommodated, a constraint signal is sent via a Connection Control Panel, with connections affecting the same network constraints curtailed in the order allocated to them on a Last In First Off (LIFO) basis. Load management may be implemented with an Active Network Management (ANM) system or a Soft Intertrip Scheme.

Active Network Management

An ANM is a sophisticated server-based system that interfaces with WPD's SCADA system. It can deal with complex networks involving multiple controlled connections in conjunction with multiple constraint points. It is capable of determining, in real time, the permissible limits of all the connected controllable loads and transmits this information to each connected load via its CCP.

Soft Intertrip Schemes

Where network reinforcement is due to a single constraint point, and the cost of installation of a new ANM zone exceeds the cost of network reinforcement, a Soft Intertrip Scheme may be used to manage the connected load. This involves continuous monitoring of the constraint point by WPD. When the full capacity of the connected load cannot be accommodated, a digital (on/off) constraint signal is sent via the "stage 1" contact of the CCP, indicating that the connected load must be limited to a pre-determined fixed level.

Trigger Points

We have introduced trigger point trials relating to three connection scenarios, providing the customer with a window of opportunity in the application process to minimise the cost of connection.

When relevant, the capacity which can be accommodated without the reinforcement works being required (the trigger point) is provided to the customer. A window of opportunity allows the customer to decide whether to proceed for a reduced level of capacity based on the trigger point, or proceed with the original requested capacity and receive a Connection Offer for the additional works and associated costs.

33kV and above: trigger point identified for the load that can be accommodated without the need for reinforcement.

Dedicated EV charging hub requiring 1MVA or more: trigger point identified for the load that can be accommodated without the need for reinforcement, provided the trigger point is not less than 500kVA.

Generation at existing premises with supplies up to 100A per phase: trigger point identified for the load that can be accommodated on the existing connection without requiring chargeable connection works.