ALTERNATIVE GENERATION CONNECTIONS

1 Flexible Connections Offered

1.1 Timed: Generation curtailed within specific times
   • Sub 50 kVA
   • Localised control only
   • No comms
   • Non optimised

1.2 Intertrip: Releases pre fault capacity with trip facility
   • 11kV and 33kV
   • Small clusters on generation or simple pinch points
   • Existing monitoring with localised control

1.3 Active Network Management:
   • Fully optimises capacity based on all constraints
   • Management of generation using LIFO principles
   • Real time granular control of output
   • Requires new active networks management control and monitoring systems
   • Connect Plus
   • Available for single generator with up to two constraints

1.4 Export Limitation Schemes
   • Limits export of generator to set value
   • Process follows ENA engineering recommendation G100

1.5 3rd party ANM
   • Private ANM scheme between two generators and managed by customer
   • SSEN intertrip installed to protect network against customer ANM failure
   • Utilises capacity of 3rd party generator

2 Constraint managed zones:
Connection flexibility offered through a non firm connection for suppliers providing Constraint Managed Zone Services. These services suppliers are identified through EU Open Tenders in specific areas where receiving constraint managed services is more efficient that reinforcing the network.

3 Definitions

3.1 Timed
Our Southern network tends to have predictable load and generation patterns which enable us to determine when the limitations will occur. Connections will be given an operating schedule which will define the times and levels of capacity available to them.
Connections that are under 50kVA in capacity can typically connect without upstream reinforcement or transmission dependency. They also do not require remote communications

3.2 Intertrip
Some networks are constrained due to a single upstream asset requiring reinforcement, or a single limit being infringed under certain conditions. Through monitoring these conditions, further capacity can be released
when these limits or assets are within normal operating parameters. When there is no further capacity available, the connection will be constrained off.

This alternative connection is suitable for all capacities and voltage levels, although due to the coarse method of curtailment, there will be a maximum number of participants per area.

3.3 Active Network Management

In areas where there are multiple complex thermal constraints affecting a number of customers over a long time period, full active network management systems will be implemented. The ANM systems continually monitor all the limits on the network in real time and allocate the maximum amount of capacity to customers in that area, based on the date their connection was accepted.

This principle of access is called Last In, First Out (LIFO) and means that those with the earliest connection acceptance are curtailed last and released first.

Connect+
Connect+ is a way of getting ANM functionality for a single generator connection at a much reduced cost. The limitations are however that the system doesn’t have as much built in resilience and only allows one such connection in any specific area.

3.4 3rd Party ANM

There are two types of 3rd party ANM connections for the customer to consider - shared capacity and demand management. Both of which are installed and managed by the customer.

Shared capacity example: An existing generator may have a contracted capacity of 10MW but only have 6MW of connected generation. Therefore there is the potential for a customer to approach this generator and make use of the spare capacity. The customers will install a system that will ensure the combined export of both generators does not exceed the contracted capacity.

Demand Management example: A new 250kW generator wishes to connect to the distribution network. However due to transmission constraint upstream the generator has a limited export of 50kW. The generator develops a proposal to increase the minimum demand by changing gas boilers to electric boilers on the same circuit as the constrained asset. The generator has calculated this will increase the minimum demand by 200kW. The generator must then ensure that when the 50kW limit is breached that suitable demand is brought onto the network.

We will install a back up system so that in the event the customers system fails the generator will be disconnected.

3.5 Constraint managed zones:

A Constraint Managed Zone is a geographic region served by an existing network where requirements related to network security are met through the use of load variation techniques, such as Demand Side Response, Energy Storage and stand-by generators. These techniques are CMZ Services provided to SSEPD by a CMZ Supplier.

An EU Open Tender is run to select the best provider of CMZ services with the first tender underway currently for the Yeovil and Standlake areas of our SEPD area. Those requiring new connections to provide such services will need to engage early with SSEPD in order to best define how to proceed through the application process.

Further Information Available From
https://www.ssepd.co.uk/AlternativeGenerationConnections.aspx