



Bringing Energy
Together

Consultation Response | Constrained Network Connection

29 April 2016

The Association for Decentralised Energy (ADE) welcomes the opportunity to respond to the consultation on getting an electricity connection when the network is constrained.

The ADE is the UK's leading decentralised energy advocate, focused on creating a more cost effective, efficient and user-orientated energy system. The ADE has more than 100 members active across a range of technologies, and they include both the providers and the users of energy. Our members have particular expertise in combined heat and power (CHP), district heating networks and demand side energy services, including demand response.

The ADE understands individual members will be providing specific examples directly to Ofgem on the issues they have had in getting a connection and being connected to a constrained network. As such, we would like to make several strategic points in support of proposals to tackle connections on constrained networks.

Benefits of non-intermittent CHP

Combined heat and power (CHP) integrates the production of usable heat and power (electricity), in one single, highly efficient process. CHP generates electricity while also capturing usable heat, making energy generation highly efficient and reducing energy costs for businesses and householders.

Unlike intermittent renewables, combined heat and power (CHP) provides dispatchable electricity, offsets local demand, and contributes to system inertia. Despite the fact that these benefits offset the intermittency and loss of inertia from increased renewable deployment, CHP is increasingly facing challenges in connecting to networks and using those connections to contribute to electricity markets. We are concerned that when assessing new connections, distribution network operators do not sufficiently assess the benefit CHP generators can provide in offsetting network investments.

Network connections

We are aware that smaller (<10 MW) combined heat and power developers are increasingly struggling to achieve connections on industrial and commercial sites. In some instances, the DNO has not provided any cost and time estimate but simply rejected a connection outright. This appears to most commonly occur with Western Power Distribution network, which have told a CHP developer no connections for a CHP are available until 2019, and Scottish Power Energy Networks, which said no connections are available until 2023.

The challenges of securing network connections is a relatively new and troubling occurrence for CHP developers, as these sites are often in areas that already have significant demand, such as cities or industrial sites, and therefore significant connection infrastructure.

Mitigation options not offered

When CHP developers are denied distribution network connections, they often are not encouraged to explore alternative 'smart' mitigation options, such as export limiters, active management approaches, or voltage limiting schemes, as we understand is DNO's obligation under Section 16 of the Electricity Act. When some members have pursued these issues more forcefully, some additional options have been provided by DNOs, although not always.

Neutering of export opportunities

CHP, as a non-intermittent generator, is able to improve system productivity and reduce system stress by reducing system demand and by exporting their power when needed to help balance the system. However, over the past few years, distribution networks have increasingly refused to allow CHP operators export agreements along with connection agreements.

The lack of export agreements prevents these sites from participating in either the electricity market, Capacity Market, or balancing services, neutering the opportunity of having highly efficient CHP generators increasing competition, reducing costs for consumers, and reducing carbon emission impacts in these markets.

Increasingly, these generators are required to install export limiters, some of which require very fast reductions in power supply of only a few seconds, putting capital investment at risk as CHP engines are unable to reduce power that quickly without causing significant mechanical damage.

Connection charges for displacing demand

Members have made us aware of several cases where distribution networks charge businesses and industrial sites for the distribution connection, even though these users are not exporting and no investment is required related to that generator's export. These generators are instead being charged, through network connection charges, for the displacement of on-site demand, as the displacement of on-site demand results in a need to reinforce other parts of the network to handle the other displaced local renewable generation which might have served that demand.

This is a perverse result, where a local businesses, investing in CHP to improve its long-term competitiveness, will be charged for connecting to a network which, by no longer importing, they will actually be using less. In an even more perverse result, if the businesses was required to reduce production and electricity demand as a result of competitive pressure, the distribution network would see the exact same fall in demand but this change would not result in any charges.

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