National Grid House
Warwick Technology Park
Gallows Hill, Warwick
CV34 6DA

flexibility@ofgem.gov.uk
Steve McMahon
Deputy Director, Electricity Distribution & Cross Sector Policy

Hedd Roberts
Head of Customer Solutions,
Electricity Transmission

Hedd.Roberts@nationalgrid.com
Tel +44 (0)7920768123

www.nationalgrid.com

18 September 2020

Dear Steve,

**Call for evidence on visibility of distributed generation connected to the GB distribution networks**

This response is from NGET, transmission owner in England & Wales. It is not confidential.

***DCUSA modification DCP350 will provide data on a number of characteristics for DG greater than 1MW. Are there additional characteristics for DG, such as real-time MW/MVAr output, load factors and protection settings, which would aid in the prevention of, live management, and recovery from loss of supply events?***

The most critical issue associated with embedded generation during fast acting transient faults and loss of infeed, is having the right consistent protection settings to allow the generation to remain connected where possible during the event. The generators should also be expected to perform as expected during such conditions, as long as the conditions are within their protection envelope. Having real time MW/MVAr information and load factor would allow a better understanding of the amount of reserve to be carried on the day to mitigate loss of infeed. This would also provide better clarity on the amount of generation disconnected by any event, potentially supporting any possible response and recovery to any event.

***What value will these additional characteristics provide to improving the planning, security and real time operation of the GB transmission and distribution systems?***

The provision of additional embedded generation data would support better Whole System planning of the GB electricity distribution and transmission networks. As the owner of the transmission system in England and Wales, having better visibility of the makeup of distributed generation and how it interacts with the transmission system would be very helpful. The flow of energy on and off the transmission system is significantly impacted by embedded generation, often with exports from areas of high embedded generation having a significant effect. Having better data to resolve constraints caused by such issues, working alongside other network owners, would allow improved solutions to be developed jointly with whole system visibility.

***At what temporal resolution (instantaneous, seconds, minutes etc.) would real time data on DG be valuable to improve the resilience of the GB electricity system in the prevention of, live management, and recovery from loss of supply events?***

As indicated in response to the first question, the ability to manually respond to fast transient events is unlikely and reliance on protection and automated systems is required. Therefore, having protection settings and automated systems with the correct settings is more critical. Also, ensuring that the embedded generators operate through their performance characteristic consistently through these transient faults is critical. As for the granularity of other data, it is best defined by ESO or DSO functions.

***What investment would be required for monitoring, collecting, storing and disseminating real time operational data associated with DG? Which party should be responsible for these investments? How does this vary, based on the size of visible DG at 1MW or 50kW?***

This issue would depend upon the granularity and requirements set by ESO and DSO.

***What are the credible technical, regulatory (industry codes, licences and governance) and legal barriers and costs associated with increasing the data collected, stored and shared regarding DG operations, and in obligating parties to do so?***

The majority of technical and regulatory (industry codes, licence and governance) issues are associated with Distribution Networks and therefore best left to DNO, DSO and ESO to resolve.

I hope this short contribution is helpful in highlighting important aspects of the visibility of distributed generation connected to the GB distribution networks. If you have any queries, please contact neil.carter@nationalgrid.com in the first instance.

Yours sincerely,

Hedd Roberts,

Head of Customer Solutions, Electricity Transmission