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**Re: Call for evidence: Visibility of distributed generation connected to the GB distribution networks**

Dear Steve McMahon,

I am writing on behalf of the RenewableUK, which is the representative body for the future energy system – one that is powered by clean electricity. We support over 400 member companies to ensure increasing amounts of renewable electricity are deployed across the UK and to access export markets all over the world.

RenewableUK welcomes the opportunity to respond to the call for evidence on Visibility of Distributed Generation connected to GB distribution networks which aims to identify the regulatory barriers that still exist at distribution and improve the robustness of the system by ensuring continuity of supply.

We believe that improving visibility of generation connected at the distribution network should be addressed as a matter of priority. This is fundamental for improving the planning, security and real-time operation of the GB transmission and distribution systems. Efficient operation of networks and balancing at local level goes hand in hand with improved data gathering. Accurate real-time measurements such as power output (MW/MVAr), wider use of operational metering and common communication protocols are critical to ensure improved network visibility particularly as DNOs transition to DSOs, taking up greater roles to deliver flexibility solutions that support local system balancing and network reliability at whole system level.

We would encourage Ofgem and DNOs to address the current regulatory barriers and progress potential solutions to improve visibility of distributed generation across different timescales (short-to-long-term) so that any change is also aligned with improving the security and resilience of the GB transmission and distribution network.

Yours Sincerely

**Yonna Vitanova**  
Policy Analyst

**1. 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?**

We support the objectives of DCP350 and the extensive work carried out by the ENA Open Networks project on the System Wide Resource Register which has increased visibility of distributed generation across distribution networks. Real-time data such as MW/MVAr output and load factors could be significantly beneficial for the prevention and recovery of any supply of loss event as well as live management of those assets.

We note that information on protection information and settings configuration should be available to DNOs and TOs. This data is not subject to real-time changes while there is an ongoing discussion on reconfirming compliance periodically, including carrying out an independent audit on assets which have ensured compliance, under the Grid Code changes GC0138<sup>1</sup> and GC0141<sup>2</sup>. The onus will be on the ESO to identify any issues within that period and potentially validate compliance. However, the mechanism, responsibilities and scope limitations have not been agreed yet. We believe that compliance assessment processes should be carried out at the moment of commissioning to ensure protection settings are aligned with existing regulation, with a recorded agreement of the network owner and developer.

With regard to additional characteristics which could be considered we suggest those being aligned with the operational metering requirements for participating in the Balancing Mechanism. This also includes voltage and reactive power data as well as other useful signals such as Power Available from wind parks.

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

Consistent and accurate provision of the additional characteristics will be crucial for the planning and operating of both transmission and distribution network. Real-time data will allow DSO to assess the status of local system conditions (frequency, voltage, RoCoF) addressing any potential balancing issues with appropriate actions in order to keep their system secure.

At the same time, access to historical data would enhance DSO's ability to understand performance of its network and the assets connected within, in favour of proposing more effective network reinforcement solutions or flexibility service alternatives.

We further note that operational metering is the standard required for generators to participate in most, if not all ESO balancing services, and there is merit in making this consistent across all generators.

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<sup>1</sup> National Grid ESO, 'GC0138: Compliance process technical improvements (EU and GB User)' <https://www.nationalgrideso.com/industry-information/codes/grid-code-old/modifications/gc0138-compliance-process-technical>

<sup>2</sup> National Grid ESO, 'GC0141: Compliance Processes and Modelling amendments following 9th August Power Disruption' <https://www.nationalgrideso.com/industry-information/codes/grid-code-old/modifications/gc0141-compliance-processes-and-modelling>

- 3. What value will the above characteristics provide to improving DSO function delivery by the DNOs or other stakeholders? DSO functions may include network management, flexibility procurement, and service conflict avoidance.**

DSOs will certainly require these characteristics and access to historical data to perform their function as a system operator. With improved communications between DSO and TSO as per GC0139<sup>3</sup>, DSOs could benefit from wider spread of operation metering at distribution and perhaps even be in a position to form their own Balancing Mechanisms in the future.

- 4. 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?**

On its own wind turbines, electrical and control equipment do not usually provide a second by second granularity. As such, trying to obtain detailed resolutions could be sometimes misleading as it would not reflect the actual status of the sites. However, operational metering takes different signals at different resolutions with some as high as 1Hz. We believe the characteristics of the measurement and the related granularity of the resolution should be discussed further with the wider industry for codification.

- 5. 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?**

We note that for sites over 10MW, retrofits and new installations would be costly and require hundreds of thousands of pounds of additional investment. It is certainly the case that the requirements for operational metering are onerous for smaller generators and particularly those as small as 1MW or under. If this requirement is to be mandated on distributed generation to avoid future events, such as the 9<sup>th</sup> of August 2019, a separate fund to support the implementation on all export MPANs up to 10MW capacity could be beneficial. Furthermore, lower barriers to entry into the Balancing Market will incentivise distributed generation to participate and supply the data while also allowing the TSO greater visibility to make informed decisions on the data it is receiving from distributed generation.

- 6. 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?**

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<sup>3</sup> National Grid ESO, ‘GC0139: Enhanced Planning-Data Exchange to Facilitate Whole System Planning’ <https://www.nationalgrideso.com/industry-information/codes/grid-code-old/modifications/gc0139-enhanced-planning-data-exchange>

We have previously raised concerns with regard to the lack of obligations on DNOs to publish operational data regarding their networks and welcome the objective to develop and consult on a DNO operational data licence condition in the recent consultation on RIIO-ED2 Sector Specific Methodology.

We believe there is the lack of clarity on the expectations for embedded generation when operating at the DNO level that is driving the industry to the current situation. For example, the ambiguity of G99 with regards to requirements to install SCADA at the point of connection and particularly the minimum generator size this requirement applies to. The legal text suggests that Type A PPMs (under 1MW) may be exempt from the requirement to install SCADA telecontrol. There is only text describing DNO SCADA being installed for Type B, C, and D Power Park Modules (PPMs) under clause 12.7.1 (for Type B PPMs) and 13.9.2 (for Type C and D).

As mentioned, operational metering is a requirement for Balancing Mechanism participation, and a common requirement on operational metering could lead to lower barriers to entry in the Balancing Mechanism. For example, an exemption to requiring telephony outside of office hours would make the Balancing Mechanism much more accessible to smaller generators as it is currently progressed under GC0134<sup>4</sup>. Physical wired interface solutions through DNO's Remote Terminal Unit (RTU) or marshalling boxes should be avoided due to the associated costs and resources.

We would like to see Ofgem explore further the barriers which exists for Virtual Power Plants (VPPs) that are at the forefront of the flexibility landscape. Gaps still exist in communication standards, protocols, and technologies particularly in relation to interoperability and security of communication systems. There could be scope for common communication standard (VHP ready standardised communication protocol) to be codified to encourage growth of VPPs across the UK. A common communication protocol would improve VPPs transmission and distribution integration as long as the right policy framework updates are put into place. This would include refining the definition for metering, telemetry and control standards for distributed resources participating in wholesale markets.

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<sup>4</sup> National Grid ESO, 'GC0134: Removing the telephony requirements for small, distributed and aggregated market participants who are active in the Balancing Mechanism' <https://www.nationalgrideso.com/industry-information/codes/grid-code-old/modifications/gc0134-removing-telephony-requirements-small>