

Grid Code Administrator Consultation Response Proforma

GC0143: 'Last resort disconnection of Embedded Generation'

Industry parties are invited to respond to this Code Administrator Consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses by **17:00** on **5 May 2020** to grid.code@nationalgrideso.com. Please note that any responses received after the deadline or sent to a different email address may not be included within the Final Modification Report to the Authority.

Any queries on the content of the consultation should be addressed to Christine Brown at christine.brown1@nationalgrideso.com

These responses will be included within the Draft Grid Code Modification Report to the Grid Code Panel and within the Final Grid Code Modification Report to the Authority.

Respondent:	<i>Andrew Dixon, Dŵr Cymru Welsh Water,</i> Andrew.Dixon@dwrcymru.com 07789 270 149
Company Name:	<i>Dŵr Cymru Cyfyngedig</i>
Please express your views regarding the Code Administrator Consultation, including rationale. (Please include any issues, suggestions or queries)	<i>For reference, the Applicable Grid Code objectives are:</i> (a) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity (b) Facilitating effective competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity); (c) Subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole; (d) To efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency; and

(e) To promote efficiency in the implementation and administration of the Grid Code arrangements.

The proposed Code, Grid Code Modification 0143, has been written to address a challenge with the National Grid's delivery of Objective C. With reference to the over-arching Grid Code objectives, points a, b, d and e are not considered directly relevant by Dŵr Cymru because this issue is not a matter of competition for new assets, generators or systems, but maintaining operational resilience under the challenging circumstances of COVID-19.

With respect to Objective C, this amendment may address the Grid as a whole, however, may have unintended consequences for other utility sectors, like water & wastewater services that provide a key service to its customers (e.g. the National Health Service).

Dŵr Cymru has in fact seen an increased demand for clean water consumption across its operating area as many individuals seek to adhere to the hygiene principles advised by the Government. This has placed upward pressure on Dŵr Cymru's energy consumption. It is a vital aspect of management of COVID-19 that Dŵr Cymru remain resilient. Remote shutdown of embedded renewable generators could have two unintentional negative consequences:

1. Fluctuations in energy demand with large motor start-up (and start-up currents) could be amplified if embedded generation is not allowed to continue to operate, placing stresses on Agreed Supply Capacities and instantaneous loads on the local network. This could lead to power supply interruptions at water and wastewater treatment works that then give rise to environmental compliance risks (breaching permits) or interruptions to public water supply.
2. Some of Dŵr Cymru's embedded renewable generators are also vital for process operations. For example, heat recovery from reciprocating engine operation; required to pasteurise sewage 'sludge' prior to its recycling to land. The impacts arising from this remote shutdown could also affect this aspect of environmental compliance and cause other issues such as odour and air pollution from waste gas flaring.

Neither points 1 or 2 will be exclusive to Dŵr Cymru and other Water Utilities will be presented with the same challenges.

	<p>The lack of scope within Grid Code Modification 0143 to recognise that embedded generation (like the gas engines on sludge treatment facilities and hydro generating stations on water treatment works) forms a vital part of resilient operations for key Utilities is the reason Dŵr Cymru is responding to this urgent consultation and makes the proposed amendments below.</p>
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Code Administrator Consultation questions

Q	Question	Response
1	<p>Do you believe GC0143 better facilitates the Grid Code Objectives?</p> <p>Please include your reasoning.</p>	<p>Partially. It is Dŵr Cymru's opinion that points a, b, d and e are not directly affected by this proposal. It is Dŵr Cymru's opinion that Objective C will not be better delivered for the Utility sector as it could cause both security of supply risks and affect the statutory obligations on water companies, for example, compliance with Drinking Water Inspectorate, Natural Resources Wales/Environment Agency and OfWAT commitments.</p> <p>Ensuring utility services are the "last" last resort to be disconnected would ensure that all steps to preserve continuity of electricity supply are taken before disrupting vital Utility services.</p>

Q	Question	Response
2	Do you support the proposed implementation approach?	<p>No. Dŵr Cymru proposes that there be a tiered approach within Grid Code Modification 0143 that recognises two aspects of overall system operation. Firstly, that for the reasons outlined in the previous section, water utility companies (and other essential utilities) be given some form of 'priority' banding within the last resort measures.</p> <p>It should be noted Dŵr Cymru has already approached Distribution Network Operators requesting 'Essential Supply' status for some of its assets. In practice this would mean that embedded generation exporting directly to the Distribution Network, not embedded within a Settlement metered site, be disconnected to manage the grid system preferentially as there may be other, environmental or quality, impacts arising from disconnecting generators embedded within "essential sites".</p> <p>Secondly, as outlined previously, the energy consumption of Dŵr Cymru has actually slightly increased due to the COVID-19 pandemic and, when considering system impacts, disconnecting Dŵr Cymru's embedded generators which are connected 'behind the meter' could cause significant fluctuations in energy demand at the micro scale and place pressures on the local Distribution Network that unintentionally lead to brown-outs or supply interruptions that could then give rise to environmental pollution incidents or disruption to the supply of clean drinking water.</p> <p>Please note however that Dŵr Cymru is willing to work with National Grid ESO and the DNO's, to voluntarily shut down solar & wind generation on our sites to aid the energy balance situation in the UK. Dŵr Cymru's preference is for export only assets first, followed by those embedded 'behind the meter' that are not directly linked to water or wastewater treatment, such as solar and wind as stated above.</p>

Q	Question	Response
3	<p>Do you have any other comments in relation to GC0143?</p>	<p>The logic of the proposal is sound, however, Dŵr Cymru believes further consideration must be given to how this authority to National Grid would be implemented to ensure there are no unintended consequences causing wider issues for the UK.</p> <p>Dŵr Cymru would encourage the National Grid ESO to create a process to work with the Water Industry to create a process to shut-down embedded generation on their sites, to manage demand. In discussion with the DNOs across Dŵr Cymru's operating area, there isn't currently a process that they could use to do this and collectively across the UK water industry this could be a significant impact. Voluntary cooperation as stated in the Grid Code document, and telephone liaison between Operational staff, could allow this to be delivered for the benefit of the National Grid system. For absolute clarity, Dŵr Cymru is keen to support the DNOs and National Grid ESO to maintain a stable Grid, however, for the reasons outlined believes there is a better solution to achieve this than the blanket approach to all decentralised generation assets.</p>