

**Workgroup Consultation Response Proforma****GC0147: Last resort disconnection of Embedded Generation – enduring solution**

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

Please send your responses to [grid.code@nationalgrideso.com](mailto:grid.code@nationalgrideso.com) by **5pm** on **27 November 2020**. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

If you have any queries on the content of this consultation, please contact **Nisar Ahmed**, [Nisar.Ahmed@nationalgrideso.com](mailto:Nisar.Ahmed@nationalgrideso.com) or [grid.code@nationalgrideso.com](mailto:grid.code@nationalgrideso.com)

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**For reference the Applicable Grid Code Objectives are:**

- 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*

**Please express your views regarding the Workgroup Consultation in the right-hand side of the table below, including your rationale.**

Standard Workgroup Consultation questions		
1	Do you believe that the GC0147 Original Proposal better facilitates the Applicable Grid Code Objectives?	<p>We believe that having an enduring last resort instruction that the ESO can use to instruct DNOs to disconnect embedded generators (EG) in an emergency is a sensible precaution. This clearly better facilitates Grid Code Objective (c). However, it is important that EGs are treated in a similar manner to transmission connected generators (TG) to ensure that Grid Code Objective (b) is not adversely affected. For this reason, we believe that if the Original Proposal is adapted to include compensation for EGs under this action (as a TG would be through the Balancing Mechanism) then there is no trade-off between the two objectives and an uncontentious proposal can be taken forward. We acknowledge that there is no clear mechanism in place that can be used to facilitate this payment, but this should not prevent the principle of compensation being agreed.</p>
2	Do you support the proposed implementation approach?	<p>In general, we feel that the implementation approach including a 'hook' to the DCUSA allowing for compensation to be included in a future DCUSA modification is sensible and proportionate.</p>
3	Do you have any other comments?	<p>We believe that whilst EGs do have safety systems in place to cope with a disconnection (GC0147 related or otherwise), a period of notice would ensure a safer shutdown procedure can be followed. It does not seem unreasonable to us that any notice that the DNOs receive can also be given to EGs. A minimum 30 minutes notice (as suggested in the consultation) can ensure not only a safer shutdown is delivered but allows industrial sites to initiate back-up procedures to provide heat and power in a way that prevents any interruption in supply. If feasible, information on how long the last resort measures will be in place will also help operational staff at EGs to take the best actions to ensure safety and a quick recovery back to business as usual.</p> <p>It would also be helpful for any measures taken under GC0147 to be acknowledged explicitly in the legal text as being emergency actions (in instances where this is, indeed, the case). This will remove</p>

		any ambiguity over whether insurance and other protective contractual provisions are applicable.
4	Do you wish to raise a Workgroup Consultation Alternative Request for the Workgroup to consider?	No
<b>Specific GC0147 Workgroup Consultation questions</b>		
5	How can it be ensured that all reasonable commercial alternatives have been pursued first before emergency instructions are used as a last resort?	We believe that all commercial alternatives should be pursued before last resort measures are brought to bear as they are in the Balancing Mechanism. We believe the “merit order” outlined by ESO for managing low demand scenarios, if followed, would ensure this would happen. Any concerns around whether commercial alternatives are “reasonable” should be pre-empted through robust guidance and the codes. Enabling these measures should be subject to regulatory scrutiny in line with standard industry practice.
6	Are there any further alternatives to emergency disconnection that have not been considered?	If all commercial alternatives have been exhausted, then we believe that emergency disconnection is a suitable tool to utilise.
7	In terms of possible safety implications of disconnection, are there any specific risks in relation to this solution? What is the additional risk?	We acknowledge that there are provisions which allow a network operator to disconnect a site in an emergency situation and that sites must have a protocol to manage this in the safest way possible (as the absolute priority) and, where customers are connected, in the way which maintains minimal disruption to their supply. However, it must be recognised that – even with the most robust safety measures in place – a scenario where sites are disconnected with little to no notice is intrinsically high risk. In such a situation, not only would the generation site be potentially fully blacked out, the customers supplied on this site could also find themselves in this position. Many of these customers run large, industrial processes with inherently dangerous equipment and have their own separate safety processes which could very well not be designed to cope with this situation. On the assumption that GC0147 would be invoked at a low demand time period, this is most likely to materialise over a weekend or evening. At these times smaller

		<p>generators will have a reduced site staff presence and therefore less resource to deal with a black out. It is on this basis that we believe it is imperative as much formal notice is available to generators to minimise safety risks. Even a 30-minute notice period would facilitate a controlled ramping down of generation, allowing the site to remain safe and controlled more easily by staff. Customers could remain fully energised as circuit breakers can be opened to allow for imported power provision. Furthermore, restoration of generation would be much smoother the more notice is given which is a not insignificant consideration. We fully appreciate the difficulties outlined in this consultation around giving notice, but this should be balanced against the consequent increased safety risk.</p>
8	<p>How should embedded generators that are not participants in the balancing mechanism be compensated for emergency control actions including disconnection? Is it your opinion that they should be compensated?</p>	<p>We believe that as GC0147 has a low probability of being called, there is not a need for an “off-the shelf” compensation methodology such as ODFM proxy. Furthermore, we do not think that the costs associated with emergency disconnection are adequately captured in the ODFM market (as plant can de-load safely and with minimum stress to the asset under ODFM). Therefore, we think that a compensation scheme whereby EGs submit their lost revenue and associated costs (as per the Clean Energy Package definition of compensation) and which is then reviewed/challenged/approved by the ESO is the simplest scheme. We do not believe that the ESO needs to be concerned about uncapped risk exposure as GC0147 is expected to be a very low probability event and ESO can work with industry to prepare a simple template of approved costs and guidance. E.ON is happy to share the analysis we have done which breaks down the expected cost and revenue impacts of a Last Resort measure under various scenarios to support in creating guidance notes and/or a template.</p>
9	<p>What mechanism could compensation be achieved by?</p>	<p>We believe that there is currently no mechanism that can be used by the ESO to compensate embedded generators directly. However, we believe that the ESO can compensate suppliers through BSUoS charges which can then be passed onto EGs through site specific DUoS charges. As we have suggested in question 8, EGs will be required to submit compensation claims which the ESO can require the DNOs to validate i.e. was this EG</p>

		curtailed? This will likely require some DCUSA/CUSC modifications to be raised.
10	Would modifications to any other GB Codes be required? [for example, imbalance and cash-out arrangements in the BSC, arrangements with DNOs, suppliers or embedded generators in the CUSC and DCUSA)	Other than the modifications already discussed in the consultation and in our response to question 9 we are not aware of the need for any modifications to other GB codes
11	Is compensation a requirement of the Clean Energy Package legislation? Please expand where possible on why or why not.	<p>We believe that compensation is a requirement of the Clean Energy Package legislation.</p> <p>We believe that the provision that compensation is not required for ‘producers that have accepted a connection agreement under which there is no guarantee of firm delivery of energy’ refers to EGs that have a non-firm connection agreement <u>with their DNO</u> that allows the DNO to curtail them. The EG has already agreed compensation for this non-firm connection through a cheaper and quicker connection. We feel that the proposer’s stance that the EG does not have TEC and therefore does not have a firm right to use the transmission network does not stand up as the EG is not trying to use the transmission network and is simply exporting onto the distribution network. It is the ESO who is requesting that the DNO (who does have firm access to the transmission network) increase their import from the transmission network by curtailing their embedded generation. There is no reason that the EG should have TEC and therefore the ESO has no right to request their curtailment or disconnection (unless they are going to be compensated).</p> <p>We also believe that the argument over whether ‘redispatching’ covers disconnection are very weak as the Clean Energy Package definition of redispatching clearly covers curtailment.</p> <p><i>‘redispatching’ means a measure, <u>including curtailment</u>, that is activated by one or more transmission system operators or distribution</i></p>

		<i>system operators by altering the generation, load pattern, or both, in order to change physical flows in the electricity system and relieve a physical congestion or otherwise ensure system security (Article 2 Para 26 of the Clean Energy Package)</i>
<b>Form/Implementation of instructions</b>		
12	What form should an instruction take? (eg % or MW; registered capacity or active power output)	Ideally, we believe that an instruction should be based on active power output to avoid situations where DNOs are disconnecting EGs who have already turned off through other mechanisms (such as ODFM). This will then prevent the issue of EGs trying to turn back up again after the emergency only to find they have to wait to be reconnected. However, we do appreciate that given the tight timescales for emergency action it may not always be possible to use active power output. With regard to a % of total capacity or a set MW level, we do not believe that this matters as long as MW requests are distributed as fairly as possible amongst the DNOs e.g. if WPD has 1GW of EG and NPG has 100MW, then the request to NPG ought to be ~10% of the WPD request.
13	What priority order should generators reasonably be disconnected in? Have a link in the report to the guidance note on priority order.	<p>With regard to the priority order of disconnection, we believe that whilst a strict codification of the technology rankings is not necessary, we would expect that the ESO/DNOs make clear what their up to date guidance recommends and be as proactively engaged and transparent as possible with EGs in their region.</p> <p>We are broadly happy with the priority as detailed for GC0143 i.e. asynchronous plant first. Please also note our recommendation under Question 14 that DNOs having visibility of which assets on their network are towards the end of their maintenance cycle and this being taken into consideration in terms of the priority order of EGs being disconnected would both facilitate smooth restoration of generation and help manage any prospective compensation claims due to the higher probability of plant equipment being damaged when towards the end of a routine maintenance cycle.</p>
14	What arrangements are necessary for restoration?	Various considerations need to be taken into account in terms of restoring generation. As per our comments on question 7, the more time a plant has to ramp down in a controlled manner, the easier it will be to restore generation.



		<p>The other variable is the amount of time the plant is disconnected. If a CHP plant for example, is off for a short duration, the boiler can be isolated and the turbine can be kept warm so generation can be restored reasonably quickly. If the plant is off for a sustained period and goes cold, ramp up rates will be longer. It would help generators to manage this, and therefore be more likely to be able to return to service, if the amount of time a disconnection is expected to last can be conveyed as in CM warnings. ESO has access to ramp up rates for all plants participating in ODFM but, as an example, several of our assets which are between 30 and 50MWe have ramp up rates of 1MWe/minute. In terms of risks around restoring generation, there is a higher risk a plant will not be able to return, depending on where it is in its routine maintenance cycle. Towards the end of the cycle, there is a higher probability of some thinning of boiler tubes and so there is a higher risk it will not be able to return, particularly if a plant has sustained damage owing to an abrupt disconnection. An option to manage this risk would be for generators to share with DNOs (and ESO if appropriate) when particularly high-risk periods in terms of maintenance cycles are likely ahead time. This information could be stored in a central repository, allowing the DNO to then select the lowest risk plants to disconnect.</p>
15	How much of the detail of how an instruction should be implemented needs to be codified rather than in a guidance document?	See response to Q13
<b>Legal Text</b>		
16	Do you agree with the proposed Grid Code legal text? Please provide the rationale for your response and any specific comments.	We are supportive of the proposed legal text on the understanding that separate code modifications are raised in the CUSC/DCUSA to set the process for EG compensation (as suggested in BC2.9.2.7)

