

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:	Martin Curtois External Affairs Director, Veolia martin.curtois@veolia.com
Company Name:	VEOLIA
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;

	<p>(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</p> <p>(e) To promote efficiency in the implementation and administration of the Grid Code arrangements.</p>
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Code Administrator Consultation questions

Q	Question	Response
1	<p>Do you believe GC0143 better facilitates the Grid Code Objectives? Please include your reasoning.</p>	<p>No. We do not think objective (a) is served by creating an explicit right for the ESO to disconnect embedded generation without compensation: this will give the ESO the tools to turn off plants without due regard to efficient dispatch. This raises the question of a level playing field between transmission and distribution connected generation: Section 6 of the Consultation notes that the former have access to the BM whereas the latter do not have widespread access to market compensation and cannot submit BOAs. We are concerned therefore that GC0143 does not further objective (b) and will actually give the ESO the tools in order to operate the system in an <i>anti-competitive</i> manner.</p> <p>We are also concerned that the ESO simply does not have the information available to it to be able to make an informed decision about the costs and benefits of disconnecting some embedded generators and that this will put wider system security at risk (Objective (c)). Whereas larger embedded generators may have a BEGA or BELLA in place, participate in the BM and provide FPNs to the control room, these constitute only a minority of plants. Some smaller embedded generators may not have these tools in place but may effectively be merchant power stations, such as reciprocating engine farms or small scale OCGTs, and as such can be disconnected indiscriminately without major environmental and system security impacts. However, for a significant subsection of embedded generation, there are environmental, safety and commercial impacts from disconnection to which the ESO is not privy, such as:</p>

		<ul style="list-style-type: none">● Many embedded generators export to grid in order to maintain the safety and security of other industrial processes, such as landfill gas plant which avoid dangerous methane emissions through the production of electricity or petrochemical plants which dispose of harmful waste gases by combusting them for the steam-raising process;● Landfill gas generating capacity should not be ordered to disconnect under any circumstances, due to environmental and health and safety considerations. Landfill gas is a mixture of methane (which is explosive) carbon dioxide and a number of other trace gases, which would pose health and odour risks if not managed in accordance with sites' environmental permits. Furthermore the majority of sites are not manned, and could not be shut down safely in the required timescales. Sewage gas generation should not be disconnected for the same reason.● Ofgem suggests this amendment will require DNOs to disconnect at the GSP, which would mean loss of import/export connection and the ability to generate and supply on site parasitic loads. This would impact the following:<ul style="list-style-type: none">- Environmental Control;<ul style="list-style-type: none">i. Loss of gas flare as a standby<ul style="list-style-type: none">- uncontrolled emissions of LFGii. Loss of leachate extraction systems - loss of leachate controliii. Loss of on-site leachate treatment plants - loss of disposal outlet- Operation of landfill;<ul style="list-style-type: none">iv. Loss of weighbridge operation on some site - inability to accept wastev. Other associated infrastructure - security, welfare and other control systems
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- Emission control for LFG

- vi. LFG emissions to air - higher odour potential and risk to public nuisance
- vii. Lateral subsurface migration of LFG - Health & Safety risk
- viii. Carbon budget - priority government objective
- ix. Methane emission control - regulator and operator priority

- Abrupt disconnection of embedded steam turbines (for example at Energy Recovery Facilities) can cause a site blackout, which may be restored in seconds, minutes, or take several hours depending on many factors. Any blackout will cause an unplanned shutdown of the boilers and is likely to result in a period of increased emissions of CO, TOC, and dioxins and furans while waste burns on the grate without sufficient air for complete combustion. Moreover, disconnection of EfW plants could cause those plants to enter a heightened level of instability, the possibility of having to operate at reduced load and therefore be unable to burn as much waste placing Public Health at risk.
- Specifically, depending upon how the plants were disconnected, this would cause the plants to either dump steam quickly or in a more measured fashion to its condenser. The quicker this happens the greater the risk of tripping the plant which in turn stops the combustion. Again, operating at full load followed by immediate disconnection heightens the risk of potential failure of the plant due to the “shock to the system” which could result in the plants requiring significant maintenance intervention and unplanned shutdowns for a significant period of time with potential for permanent damage to critical plant such as turbine and associated gearboxes.

		<ul style="list-style-type: none"> ● Furthermore this approach risks energy from waste plants, biomass, anaerobic digestion and other waste-related thermal technologies breaching their environmental permits. These plants (if shut down), would mean that their feedstocks would not be dealt with, resulting in disruption to waste management processes and logistics within parts of the food industry. ● Furthermore, many embedded plants are synchronous generators and as such provide inertia and voltage controls to the DNO: switching these plants off will have knock-on effects on the DNOs local network management which the ESO control room is not aware of. <p>We are very concerned that the ESO will be acting “in the dark” in respect of all of these features of embedded generators when making the decision to instruct DNOs to proceed to mandatory disconnection. This has the potential to put system security at risk.</p>
2	<p>Do you support the proposed implementation approach?</p>	<p>No. As well as opposing the short notice given to the industry (see Q3) we would like to suggest a critical amendment to the plan as currently set out. There should be a list of “priority generators” i.e. those whose sites have an environmental permit who would not be subject to disconnection, akin to the list of priority consumers to which DNOs must have regard in the event of Low Frequency Demand Disconnection (LFDD) events. These priority generators should include the sites whose disconnection would pose risks to system security, such as Energy Recovery Facilities, landfill gas utilisation plants, petrochemical facilities, hospitals etc. Embedded generators could apply to be on this list which could be updated and reviewed as the summer goes on, giving the ESO flexibility to remove sites if necessary but only after a dialogue with the relevant embedded generator and the DNO.</p>
3	<p>Do you have any other comments in relation to GC0143?</p>	<p>Firstly, we oppose this GC0143 in the strongest possible terms in terms of its implications for operation of the waste sector and regarding the extent that it has been rushed through suggests to us it should be the subject of a Judicial Review.</p>

Secondly, unlike gas, waste cannot just be turned off with significant consequential damages to both plant and equipment the costs which would be passed on to local authorities under our PFI contracts via 'change of law'. The risks for waste are far higher due to the scale of the operation and the sensitivity of the boilers and district heating to disturbances.

Risks associated with de/re-energising due to C19 issues include:

- Damage to plant with sudden and unplanned outage
- Lack of availability of HV authorised engineers for re-energising plants - less available due to C19 restrictions / in high demand already
- Extended and unplanned outages more difficult to rectify especially with organic processed such as LTPs
- Potential impact to multiple locations when resourcing levels out of working hours and weekends are reduced to cover for normal operations
- Inability to put in contingency - not straightforward, will be site specific and will take time

Thirdly, we have made the Environment Agency aware of the risk of a potential environmental incident as a result of a non-planned shutdown of any plant with an environmental permit and in particular ERF plants, resulting in increased emissions and a potential health and safety incident within the plant in the event of a blackout.

Our understanding is that the EA has contacted both BEIS and Defra and raised its concerns at the problems that will result from disconnection. **Informally the Agency have indicated that their response might be to propose that does not apply to a facility with an Environmental Permit, without specific agreement or arrangements in place with the permit**

		<p>holder/operator. We believe this is a reasonable position but needs to be well-controlled.</p> <p>Fourthly, we are concerned at the impact to energy trading / contracts and in particular the penalties for failure to supply within contract terms. Reduced revenue will have an impact on investment and there will be increased impact on those with multiple site portfolios with several types of generation - impact to consolidated trading (Landfill, Biomass, ERF). We also note there has been no compensation for loss of generation.</p> <p>Fifthly, there seems no logic in disconnecting primarily renewable, low carbon generating equipment whilst transmission connected generation equipment in the form of fossil fuel plant remains on. This runs counter to the Government's plans for a net-zero carbon economy in the future when the use of renewables will be prioritised.</p> <p>Finally, although we recognize that the Covid-19 pandemic means that the ESO must deal with an unprecedented situation we would repeat the concerns of some of the Grid Code Panel members: why has it taken the ESO several weeks to issue this modification when we have been in lockdown for six weeks and the Bank Holiday dates have been known for over a year? Every week the ESO has been holding "preparedness" webinars and there has been no mention that this device was lacking in the ESO's toolkit.</p>
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