

Workgroup Consultation Response Proforma

GC0151: Fault Ride through process

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 by **5pm** on **16 August 2021**. 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 or grid.code@nationalgrideso.com

Respondent details	Please enter your details
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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 GC0151 Original Proposal better facilitates the Applicable Grid Code Objectives?	<p>No:- This modification places more onerous obligation on transmission connected generation than exist today without consideration of funding or the cost benefit of such an approach. The ESO alternative suffers from the same defect.</p> <p>We support the improvement in information sharing but do not support the obligation on reduced output whilst an investigation is ongoing.</p>
2	Do you support the proposed implementation approach?	No
3	Do you have any other comments?	<p>Yes</p> <p>We believe that this and the ESO option (which is a harsher alternative) simple look to push the technical responsibility of managing the ROCOF risk from the ESO to transmission connected generation rather than dealing with the fundamental driver of low inertia.</p> <p>The ESO has chosen to manage the control of frequency via the use of significant volumes of batteries which provide limited contribution to arresting the fall of frequency following a fault. This results in larger falls in frequency when generation or network assets trip off the system.</p> <p>The inertia light system is now much more sensitive to loss of generation than it has been in the past. Whilst there has always been fault ride through obligations on generation the ESO via its open letter has indicated it wishes generation to re-look at its systems to ensure compliance despite having passed through the FON process and the associated data sharing that occurs with the ESO.</p> <p>Generation plant and protection systems are designed to be compliant with the Grid Code to be connected to the system. During the FON process the generator needs to demonstrate as far as is practical its ability to comply with the code. The protection methodology is typically a primary system that will clear faults (or facilitate fault ride through) and second system that take over if the primary systems fail or don't clear faults within dedicated time scales.</p>

Protection systems are designed to have a System Fault dependability of not less than 99% (grid code requirement) with information on MTBF is submitted as part of the FON process.

In addition to main system protection capability generators typically provide secondary systems within the overall protection philosophy The ESO takes account of the reliability of protection systems in its reserve and response holding requirement

The ESO is seeking to increase the requirement on generation from 99% to an absolute requirement as indicated in the proposed alternative OC5.4.2.1 by the removal of the word “persistently”.

OC5.4.2.1 In the event that a **BM Unit** fails persistently, in **The Company's** reasonable view, to follow, in any material respect, its expected input or output or a **User** fails **persistently** to comply with the **CC** or **ECC** as applicable and in the case of response to **Frequency, BC3** or to provide the **Ancillary Services** it is required, or has agreed, to provide, **The Company** may notify the relevant **User** giving details of the failure and of the monitoring that **The Company** has carried out.

The cost of move from the existing requirement to an absolute requirement is potentially significant. It will require the use of redundant systems and a significant increase in resources needed to manage change as fault ride though not only effects protections systems but many other items of plant and equipment.

If the ESO wishes to make this change then it needs to provide a whole system approach to solving this working with industry rather than just increasing the obligation on transmission connected generation with no consideration of funding or technical review.

It is a source of some concern that when a ROCOF issue was identified in distributed generation Transmission connected generation (through BSUoS) are required to fund studies and protection changes for this type of generation.

The ESO approach to a similar issue with transmission connected generation rather than working with industry on a funding/compliance project is to simply place more stringent obligation on Transmission Connected generation with the

		<p>threat of immediate self-disconnection for non-compliance with the increased obligation.</p> <p>We hope that this modification and its alternation from the ESO are withdrawn/modified to facilitate data sharing without increasing the current grid code obligations on protection system reliability.</p>
4	Do you wish to raise a Workgroup Consultation Alternative Request for the Workgroup to consider?	No
Specific GC0151 Workgroup Consultation questions		
5	Do you have any comments on the Process to be followed after a suspected fault ride through failure?	Whilst we do not support this option or the alternative, we supply the following comments.
6	Do you have any comments on the required sharing by the ESO of largest infeed loss information?	This seems appropriate
7	Do you have any comments on the sharing of user lessons learned information (including any information from Fault Data/Recorders)?	This seems appropriate
8	Do you have any comments on the sharing of information by the ESO on faults (with or without identified FRT issues)?	This seems appropriate
9	The proposal sets out the time to investigate by the User et al. Do you believe this time is appropriate or not? Please provide your rationale	These seems appropriate and are in keeping with current industry practice for investigating plant trip issues.
10	The proposal sets out the MW threshold. Do you believe this is appropriate or not?	In general, we do not support thresholds or tolerances as multiple small units will have the same effect as larger ones.

	Please provide your rationale	
11	The proposal sets out the level of the forced constraint. Do you believe this is appropriate or not? Please provide your rationale	<p>We do not support any level of forced constraint on transmission connected generation. If a user considers its plant safe to operate and grid code compliant with a design MTBF 99% then without limitation it there should be no constraint on it connecting to the system.</p> <p>If the generator or the ESO can apply for a LON if there are GC compliance issue, so these requirements are simply not needed.</p> <p>If any level of constraint were to be imposed/agreed there would need to be a facility /process for the generator to remove the constraint to demonstrate compliance once the issue was resolved.</p>
12	Do you believe that the methodology should apply differently to projects in receipt of an ION or a FON?	See Q11
13	Should the ESO have the ability to constrain a User suspected of FRT failure ahead of further investigation?	No. Only the generator can determine if its generator is Grid Code compliant whilst the ESO can work with the generator on any potential noncompliance issue it is the generator who ultimately makes the decision. If the ESO were to prevent a generator connecting, then there would need to be appropriate compensation paid to the generation should the generator turn out to have actually been compliant.
14	In respect of the voltage wave form data, should the Grid Code prescribe or not the format in which that data is to be provided? Please provide your rationale.	The data format should be standardised to be IEC compliant.
15	In respect of the constraint limitation to be applied to affected parties, should this be set within a range or a fixed value? If so, what do you believe that to	We do not support any constraint obligation, but it should be at least at a BMU level and a minimum of SEL

	be. Please provide your rationale.	
16	Would you agree that a generator should continue to operate if there was a derogation required?	It should operate with its LON or FON envelope
17	Do you believe that generators operational history should be taken into account when deciding upon the constraint level whilst an investigation is taking place?	No constraint should apply if the generator considers it's safe to operates and grid code compliant.
18	Do you have any comments on possible Alternative from the ESO as included in the consultation?	<p>The ESO alternative is seeking to increase the requirement on generation from 99%to an absolute requirement as indicated in its the proposed alternative OC5.4.2.1 by the removal of the word "persistently".</p> <p>This alternative simply places more stringent obligation on Transmission Connected generation with the threat of immediate self-disconnection for non-compliance.</p> <p>Whilst we understand the background to the ESO seeking to increasing the Grid Code requirement (the volume of low inertia plant on the system) , it is disappointing that the ESO has chosen to increase the GC obligation on generation rather than working with industry on a funding/compliance project.</p> <p>The 2 hour time scales for a detailed technical investigation is simply unachievable in a control room environment give the technical resources available to control room staff.</p> <p>Once initial checks are carried out control room staff will be aware of the origin of the trip signal and seek to ensure that the generating unit is stable and safe to operate on the system before it is returned to service. For transmission connected generation this will be following discussion with the ESO control point.</p>

		<p>A more detailed engineering investigation will typically follow once the engineering resources are available, and this will take place with the ESO compliance team should there be any remaining concerns.</p> <p>We suggest 14 -21 day time period to resolve the issue is a more practical time frame.</p>
19	Do you have any comments on the Strawman document on the FRT process?	No
Legal Text		