

Workgroup Consultation Response Proforma

GC0141: Compliance Processes and Modelling amendments following 9th August Power Disruption

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 **30 March 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 Joseph Henry Joseph.henry@nationalgrideso.com or grid.code@nationalgrideso.com

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For reference the Applicable Grid Code Objectives are:

- To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity*
- 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);*
- 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;*
- 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*
- 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 GC0141 Original	Within the scope of the Grid Code, RenewableUK believes that the original proposal facilitates the

	Proposal better facilitates the Applicable Objectives?	code objectives. However, we note that there are a couple of areas where alternatives might be raised following this consultation which we believe will bring clarity to industry with regards to compliance. The ESO should aim to improve the clarity in the legal text in order to avoid ambiguity. This is particularly pertinent in the context of the role of the independent engineer.
2	Do you support the proposed implementation approach?	Yes. We note that the ambition is to implement changes from 1 October 2021, while there is still uncertainty whether any alternative proposals would be raised after the consultation or whether the original proposal would be adapted to reflect the alternatives.
3	Do you have any other comments?	The overall scope of the proposal is quite broad. We understand that progress in different areas needs to be made to address the concerns raised in the E3C report on the 9 August Power Outage. However, some actions might be easier to implement than others which might merit further consideration. This is particularly relevant in the context of offshore wind development, such as the ability to model dynamic behaviour of complex systems.
4	Do you wish to raise a Workgroup Consultation Alternative Request for the Workgroup to consider?	No
Modification Specific Workgroup Consultation questions		
5	What should the Independent Engineer's deliverables be with respect to the outcome of the compliance process?	<p>The suggested terms of reference as set out in the Independent Engineer – Alternative in the consultation seem reasonable. It would be helpful if further clarity is provided in the legal text with regards to roles, responsibilities and skills of the independent engineer so that there is clear definition of scope of the role.</p> <p>The current wording suggests that all generation which needs to comply with the Grid Code will have to demonstrate independent engineer involvement in the process. A far better approach would be to consider an option which requires an independent engineer involvement for large sites that would be</p>

		considered a 'single in-feed' risk (e.g. above 700MW). The current approach risks discriminating against generators based on location – new generators having to comply with the Grid Code (above 10MW in North Scotland and above 30MW in South Scotland), many of which will be renewable, would be required to cover the cost for an independent engineer, whereas generators less than 50MW in England and Wales would be able to avoid it. It would be welcome if future Working Group discussions could focus on identifying the best solution against a set of criteria which would minimise the overall cost to the industry from the additional involvement of independent engineer in the compliance process.
6	Should there be specific requirements on the retention of data for the User and/or the ESO?	
7	Should the detailed design stage be more clearly identified within the Grid Code?	We assume that this question refers to the extent of the Independent Engineer involvement in the detailed design stage. Some of the detailed design work is carried at tender or FEED stage and could last for a long period of time. Should the independent engineer get involved early on in the project this should cause a minimum amount of disruption to project delivery. We would support a clearer definition in the legal text being added to minimise confusion, unnecessary overlap and cost in the design phase. The expected analysis from the design phase should be shared with the ESO.
8	What stages of implementation would the industry believe are appropriate?	It would be difficult to separate the role of the independent engineer in stages. Either the independent engineer is fully committed to the project and onboards all the information required to execute the role or not.
9	Should the ESO be required to undertake the responsibilities associated with an independent engineer? Please outline your rationale.	RenewableUK would be supportive of the outlined Independent Engineer – Alternative as set out in the consultation text. It would be welcome if future Working Group discussions consider the extent to which involvement of independent engineer in the compliance process applies to smaller participants.

		<p>Should only large generation be required to assure independent engineer involvement (an option outlined in our response to Q5), the cost of this could be covered by the connection application fee for that size of generator.</p> <p>However, if all generation that needs to comply with the Grid Code has to demonstrate independent engineer involvement, the ESO should be able to take a greater role and provide assistance to smaller parties unable to satisfy the requirement in-house to minimise cost burden to the industry.</p>
10	Should there be greater definition be given to “substantial modification” given that the self-certification process places the onerous on the User to make these decisions?	The Grid Code already includes provisions with regards to major changes made to projects (substantial modification is defined and referenced in the Grid Code). We consider that this is providing sufficient clarity to the industry at present.
11	Should there be a review of the effectiveness of GC0141 post implementation and after the industry has experience of implementing?	RenewableUK would support a requirement for a post-implementation review following the adoption of the change. The ESO should review and report on compliance, while any actions should be coordinated between the industry and Ofgem as the independent regulator.
12	What are your thoughts on the workgroup’s discussions regarding compliance repeat plan? How would this work in regard to Independent Engineer Verification?	<p>RenewableUK is supportive of a process being put in place with regards to re-stated compliance. The ESO is best placed to analyse changes to the network and highlight areas where significant issues might occur. We would encourage the ESO to take a much more proactive role in monitoring sites’ performance in response to minor system faults, so that when a major system fault occurs, the key sites do not respond unexpectedly. The onus should be placed on generators to provide evidence of an internal process for assessing changes to demonstrate a ‘Good Industry Practice’ is being followed.</p> <p>We question how applicable the 5-year requirement should be for parties which have recently notified the ESO of substantial modification being made to the project such as re-powering of older plant. The 5-year re-certification is likely to add very little to the</p>

		<p>assurance that generators remain compliant throughout their life.</p> <p>We support the view that the independent engineer verification should not be involved in the Compliance Repeat Plan. If the scope is restricted to resubmission of the data outlined in the Planning Code and the Data Registration Code which is readily available to the user, the involvement of an independent engineer verification might be of little value and only impose greater cost to the project.</p>
13	Do you believe that screening processes should be applied ahead of detailed dynamic EMT simulation, and if so, do you believe data exchange should support that?	Screening processes are welcome ahead of detailed EMT simulations. Data exchange during the screening process between the ESO and the user could improve the focus of subsequent simulations. However, the challenge of data exchange, IPR and NDA's must be clarified and agreed between the parties before any data exchange can take place.
14	Do you agree that the roles and responsibilities associated with interaction studies should be detailed and clarified, and to what extent?	Interaction studies require extensive data from the grid, power plants and components. It is important that ownership and responsibilities for such data exchanges is well defined. We believe that the Interactions SSCI/SSTI – Alternative provides a good overview of the extent to which the roles and responsibilities should be set out in the legal text.
15	Do you agree that improved definitions of the types of analysis and definitions suitable analysis environments ahead of the detailed design phase provides useful clarity and minimised project disruption in delivering the principles of this grid code change? Should these form part of legal text or made available with the modification as guidance that may be	<p>RenewableUK would support the provision of improved definitions which will provide greater clarity to the industry and minimise confusion in project delivery. Definitions of the types of analysis should be part of the legal text and codified.</p> <p>Definitions of suitable environments for analysis might be more suited to a guidance note. Technology moves along rapidly, which might require frequent review of the legal text and greater industry resource should these be codified.</p>

	separately updated from time to time	
16	Do you agree that clarifying roles and responsibility in the management of interaction studies assists more clearly defining the analysis needs of each party, minimising confusion, unnecessary overlap and cost in the design phase?	Yes, these should be clearly set out.
17	Do you agree that small signal analysis supporting the screening of interaction cases should be clearly specified within this grid code change, to better focus the range of EMT studies being discussed, and within the context of existing SSTI and SSO analysis better inform assessment of risks and the need for detailed dynamic simulation which includes shaft data for SSTI?	Small signal analysis requires very detailed data and parameters from the systems and components. Normally the WTG, FACTS & HVDC manufactures do not provide the details of their control systems required to perform small signal analysis. Small signal analysis can provide the necessary insight into the stability of the interconnected systems. However, due to issues with the IPR of these systems, it is not foreseen that small signal analysis can be performed.
18	What is your view on the separation of the simplified RMS model and EMT model when it comes to confidentiality, distribution and the protection of IP?	<p>We would support separate treatment of RMS and EMT models. There is a benefit to industry to mandate a simplified RMS model template in line with international standards to offset concern over manufacturer-specific information and consistency.</p> <p>However, as also noted in the consultation report, there is a trade-off between mandating simplified RMS model (50Hz RMS modelling framework) which affects overall accuracy. EMT models are often proprietary while distribution would compromise confidentiality. Intellectual Property rights of the manufacturers need be protected.</p>

19	As it currently stands, what is your view on the process by which detailed manufacturer EMT-type models are exchanged for necessary studies as part of project delivery?	Manufacturers normally do not share their detailed EMT models. Normally they only share their blackboxed EMT models. During the lifetime of an asset many modifications and updates will be implemented onsite. This makes the EMT model obsolete as manufacturers will not take the responsibility to update the project EMT models.
20	Are sections PCA.9.8 and PC.A.9.9 better suited to a guidance document and or should they be included, at least partly, within the legal text? Are there any specific concerns with respect to requirements set out within those sections?	Some of the more practical requirements should be codified in the Grid Code, such as scope, technical description, performance and validation. We would be supportive of the RMS and EMT Modelling Appendix 9 Alternative which suggests that parts of this section might be better suited to a guidance document as some of the detail in the legal text could be quite onerous to update once set in the Code.
21	In terms of the requirement for existing users to provide sub-synchronous torsional data for existing plant that may be provided, do you see any issues in regard to the provision of this data?	We echo the concerns expressed in the Interactions - SSCI / SSTI section in the consultation with regards to requirements for existing users' provision of SSTI. The ESO can have a clear role to conduct screening on oscillatory frequencies to check appropriateness before requesting such torsional data for existing plant, as it can be difficult and expensive to obtain, particularly for offshore wind sites. As such, the roles and responsibilities should be clearly defined in the legal text as set out in the Interactions SSCI/SSTI – Alternative.
22	Should responsibility for interoperability remain with the generator or the ESO, inclusive of interoperability studies such as control interactions and SSCI/SSTI studies? Please provide your reasoning.	The outcome of these studies changes with changes in the grid data e.g. configurations of the grid and upgrades of grid components will influence the SSCI/SSTI study results. The ESO should be responsible for the overall network interoperability, but the generator should be responsible for its own project studies. It will not be beneficial for the ESO to take responsibility for SSCI/SSTI studies. This will result in significant risk in the project time schedule, as these studies play a critical role in the tuning of converter controls and require a deep understanding of the converter technology.