Grid Code Workgroup Consultation Response Proforma

GC0101 EU Connection Codes GB Implementation – Mod 2

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 by **5pm** on **2 October 2017** to grid.code@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

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

Respondent:	*Greg Middleton*
Company Name:	*AMPS*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change that you wish to suggest, better	The original proposal better facilitates the objectives.

	facilitates the Grid Code Objectives?	
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	Small generators cannot control the line voltage, they can support it only by adjusting kVArs within the design specification of the generator
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*No*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	AMPS support the view that the requirements must not be more stringent than the RfG, but the existing Grid Codes should also be observed where the RfG is silent.
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	No Comment
3	Do you agree that the comments raised from the GC0087 frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	AMPS agree that the comments have been addressed
4	Do you agree with the proposed voltage/ reactive and frequency	No Comment

	requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	No Comment
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	No Comment
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	No Comment

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

Respondent:	*Tom Chevalier, Consultant* *01525 862870* AMO@PowerDataAssociates.com
Company Name:	*Association of Meter Operators*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any	*No comment*

	potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	
2	Do you support the proposed implementation approach?	*No comment*
3	Do you have any other comments?	I have some comments on the drafting. I have briefly reviewed the text and have the following comments: G98-2, figure 1 – the export and import meters are shown as separate devices. In practice they are normally a single device which measures the import & export energy. So, suggest show as a single meter with text to describe as an import/export meter. It should be noted that this applies to SMETS2 and existing HH meters. G98-2, figure 2 and Figure 3 – after the metering equipment there is a CB or switch fuse shown. This will typically also break the neutral, so single phase would be double pole isolator. G89-2, appendix 2 Note – Rather than just 'inform' the meter operator I would suggest the text should prompt the installer/customer to "…to confirm appropriate metering with the Meter Operator…" Similar points to above in respect of G98-1
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*No*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC	*No comment*

	systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	*No comment*
3	Do you agree that the comments raised from the GC0087 frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	*No comment*
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	*No comment*
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	*No comment*
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	*No comment*
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included	*No comment*

	as part of the drafting?	

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Please send your responses by **5pm** on **2 October 2017** to grid.code@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

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

Respondent:	*Please insert your name and contact details (phone number or email address)*
Company Name:	*Please insert Company Name*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change	Yes, I agree that the Original proposal facilitates the RfG national implementation for Voltage + reactive and frequency response provisions.

	that you wish to suggest, better facilitates the Grid Code Objectives?	
2	Do you support the proposed implementation approach?	Yes, we support the proposed approach.
3	Do you have any other comments?	No.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, http://www2.nationalgrid.com/uk/industry-information/electricity-codes/grid-code/modifications/forms-and-guidance/ and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	Although I am not fully aware of legal reasoning provided by alternative proposer, we believe any requirements that are existing in the current Grid Code and planned to taken forward with RfG should be thoroughly reviewed and CBA is conducted to verify this. From an Offshore Wind perspective, this is applicable for all the requirements planned to be taken forward for OTSDUW equipment.
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	We believe the comments raised in the GC0048 voltage + reactive consultation are addressed in the GC0101 report especially in regard to Configuration 1 AC Connected Offshore Power Park Modules.
3	Do you agree that the comments raised from the GC0087	Yes.

	frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	We agree with the proposed requirements.
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	No.
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	We believe the DC connected power park modules requiring to deliver/absorb Q at the connection point is not a valid requirement due to inherent nature of HVDC which cannot transfer the reactive power.
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	We believe the inclusion of OTSDUW in this should be assessed via CBA. We believe, the existing requirements on OTSDUW in addition to RfG requirements will be onerous on developers.

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

Respondent:	*Andy Vaudin* *andrew.vaudin@edfenergy.com*
Company Name:	*EDF ENERGY*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change	Yes, we agree that GC0101 Original proposal facilitates the Grid Code objectives.

	that you wish to suggest, better facilitates the Grid Code Objectives?	
2	Do you support the proposed implementation approach?	We support the proposed implementation approach of amending the existing Grid Code and Distribution Code.
3	Do you have any other comments?	None
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	No

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	We are not of the view that the Original proposal would apply more stringent requirements than the EU Network Codes allow. We are not clear what form the Grid Code would take under any "removing more stringent requirements" alternative proposal. A concern would be that many important requirements within the existing Grid Code would not be applicable to plant covered by the EU Codes. As an example, it could mean that the recent GC0077 sub-synchronous resonance modification was not applicable to new plant. It is our view that by removing important elements of the Grid Code, the "removing more stringent requirements" alternative proposal would work against Grid Code objectives (i) and (iii). We would expect National Grid to provide clear guidance to the workgroup as to any legal interpretations behind these "more stringent requirements" concerns.
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	The report includes the comments and the National Grid responses. We would expect National Grid to inform the workgroup if any of these issues has not been addressed.
3	Do you agree that the comments	The report includes the comments and the National

	raised from the GC0087 frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	Grid responses. We would expect National Grid to inform the workgroup if any of these issues had not been resolved.
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	We believe that these requirements are reasonable, based on the system security and operability needs.
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	We do not have any information on the materiality, if any, of this setting.
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	We believe that these requirements are reasonable, based on the system security and operability needs.
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	In that these arrangements are included in the existing Grid Code CCs then they should be included as part of the drafting.

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

Respondent:	Rob Wilson Robert.wilson2@nationalgrid.com 07799 656402
Company Name:	National Grid Electricity Transmission plc
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*[Note that parts of this response are identical to the NGET response to the GC0100 workgroup consultation where questions are in common or where referring to the 'more stringent' alternative proposal that has been raised against both GC0100 and GC0101]* This workgroup consultation represents the end of a very long development process. There is very little time now left to achieve compliance with the national implementation deadlines for the European Connection Codes (of which the first, RfG, is due on 17 May 2018). This work must now be brought to a timely close and hopefully this consultation will help in gathering any further evidence available and then allowing submission of the proposal(s) to the Panel and Authority without further delay. Noting that legal text for the alternatives is not included in this consultation, we would point out that this is not necessary to allow their progressing to Code Administrator consultation and submission to the Authority. Any further development of alternatives is the responsibility of the parties proposing them or, if they so choose, the workgroup. Given that there is very limited time remaining for compliance and that the principles behind the alternative proposals are complete this consultation should be sufficient to gather any further stakeholder views and evidence and allow the work to proceed. In terms of the legal text, the relevant clauses in the code are GR21.5 which states for the Code Administrator consultation that legal text may not be required if Panel and the Authority agree; and GR 22.1&2 regarding the final report which in GR22.2(g) requires an assessment of the changes only as below: *GR.21.5 Where the Grid Code Review Panel is of the view that the proposed text to amend the Grid Code for a Grid Code*

	Modification Proposal or Workgroup Alternative Grid Code Modification(s) is not needed in the Grid Code Modification Report, the Grid Code Review Panel shall consult (giving its reasons as to why it is of this view) with the Authority as to whether the Authority would like the Grid Code Modification Report to include the proposed text to amend the Grid Code. If it does not, no text needs to be included. If it does, and no detailed text has yet been prepared, the Code Administrator shall prepare such text to modify the Grid Code in order to give effect to such Grid Code Modification Proposal or Workgroup Alternative Grid Code Modification(s) and shall seek the conclusions of the relevant Workgroup before consulting those identified in GR.21.2. *GR.22.2 The matters to be included in a Grid Code Modification Report shall be the following (in respect of the Grid Code Modification Proposal):* *g) an assessment of:* *(i) the impact of the Grid Code Modification Proposal and any Workgroup Alternative Grid Code Modification(s) on the Core Industry Documents and the STC;* *(ii) the changes which would be required to the Core Industry Documents and the STC in order to give effect to the Grid Code Modification Proposal and any Workgroup Alternative Grid Code Modification(s);* *(iii) the mechanism and likely timescale for the making of the changes referred to in (ii);*

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	The original proposal for GC0101 better fulfils the Grid Code Objectives. An assessment of the original proposal against the Grid Code objectives is as follows: *i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity* Positive. In developing this code modification the task of the workgroup has been to find a balance between the costs that will be incurred by owners of equipment in complying with a more onerous specification and the benefit to the system in avoiding operational costs that

		would otherwise be incurred in providing support due to the connection of less capable equipment. This is also the aim of the European Network Codes as stated by ENTSO-E and is particularly important given the development of the system and the shift in the generation portfolio from larger, centrally despatched units to smaller and embedded renewable generation. ii. *To facilitate 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)* Positive. Ofgem have made clear during the workgroup proceedings that their decisions will be based on evidence in both directions – ie that where choices are made these are based on a tipping point being reached where the costs of choosing more onerous settings is evidenced to outweigh the operational benefit. iii. *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* Positive, as stated above, in making balanced choices for the overall benefit of the end consumer. iv. *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* Positive. This modification is required to implement elements of the 3 European Connection Codes forming part of the suite of European Network Codes resulting from the EU 3rd Package legislation (EC 714/2009). v. *To promote efficiency in the implementation and administration of the Grid Code arrangements*

		Neutral. Although noting that this is the 2nd (GC0100 being the first) comprehensive modification to be taken through Grid Code Open Governance and therefore one of the first Grid Code modifications to go through an official workgroup consultation which will be followed on acceptance of the workgroup report by the Grid Code Panel by a Code Administrator consultation. So as noted above, the GC0101 original proposal better facilitates objectives (i)-(iv) and is neutral against objective (v). The 'more stringent' alternative fulfils none of the objectives as summarised below. Assessment of the 'more stringent' alternative against the Grid Code objectives: i. *To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity* Negative. The 'more stringent' alternative does not embody the minimum solution as required by Ofgem for implementation of the European Network Codes and so does not permit efficient development. ii. *To facilitate 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)* Negative. The 'more stringent' alternative is not achievable in the time available and proposes striking out of national code requirements without which system security will be compromised and new connections will be unable to proceed under safety rules and due to a lack of clarity over equipment specifications. Further, due to the time that solving these issues will take the ability of new entrants to meet their European Connection Code obligations will be compromised as the leadtime that they will have prior to compliance

		being required will be reduced. *iii. 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* Negative. The 'more stringent' alternative will prevent secure connection of new entrants and stifle development of efficient solutions. *iv. 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* Negative. The 'more stringent' alternative is not a minimum or efficient solution as required by Ofgem. v. *To promote efficiency in the implementation and administration of the Grid Code arrangements* Negative' The 'more stringent' alternative will require comprehensive and unnecessary modifications to the existing national codes.
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	No
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, http://www2.nationalgrid.com/uk/industry-information/electricity-codes/grid-code/modifications/forms-and-guidance/ and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More	This argument is not valid, is in contradiction to advice from Ofgem, and its persistent reiteration has

	Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	wasted a great deal of time that could have been more profitably employed in completing implementation and giving developers and manufacturers greater leadtime for compliance. The European Connection Network Codes were intended to consider cross-border issues and to seek harmonisation. However, they were never intended to be a complete solution or to overwrite all national legislation. Ofgem has advised industry in their 2014 decision[1] on how to implement the European Network Codes of the need to adopt a minimum solution; this was explained to mean only bringing forward any new GB Code provisions required by virtue of the EU Connection Codes, and removing any conflicts with existing GB Code provisions. This advice was repeated in Ofgem's decision letter on urgency[2] for modification GC0103. In this letter, and in various other correspondence, Ofgem have also urged stakeholders to bring forward specific examples of where existing code provisions impact cross-border trade such that they can be dealt with through the existing code modification processes. No examples have been forthcoming. It is also worthy of note that article 7.3 of RfG (EU 2016/631; HVDC and DCC codes similar) states that: *'When applying this Regulation, Member States, competent entities and system operators shall: (d) respect the responsibility assigned to the relevant TSO in order to ensure system security, including as required by national legislation.'* To remove all national code provisions outside the scope of the European Codes by the 'more stringent' argument, unless it can be proven that cross-border trade is not impacted, would render the GB electricity system inoperable in contravention of this clause and would prevent any parties from connecting new equipment to the system until a full clause-by-clause review could be completed against both EU Connection Code requirements and the further legislation of other member states.

[1] https://www.ofgem.gov.uk/ofgem-publications/92240/openletteronencimplementationandconsultationonnemodesignation-pdf

[2] https://www.ofgem.gov.uk/publications-and-updates/gc0103-introduction-harmonised-applicable-electrical-standards-gb-ensure-compliance-eu-connection-codes-decision-urgency

		None of the other 27 EU member states implementing the European Connection Codes are considering the 'more stringent' argument as valid. All are adopting a similar minimum approach to GB in implementation. Legal advice from ENTSO-E on this subject is that member states are allowed to introduce or maintain more detailed and in certain cases more stringent requirements. This is as follows: *By virtue of Articles 2 and 4 of the Treaty on the Functioning of the European Union (TFEU), the EU does not have an exclusive but a shared competence on energy matters. According to Article 194 TFEU, Union policy on energy shall aim to ensure notably the functioning of the energy market and promote the interconnection of energy networks. An EU Member State could therefore adopt additional, national legislation to complement the CNCs. Nonetheless, this could only be to complement and render EU law more efficient and, by application of the principles of EU law direct effect and supremacy, could not be in contradiction to EU law, including the CNCs provisions.* *Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003 ("Regulation 714/2009") allows for the adoption of additional provisions at national level under certain conditions:* *- Article 8(7) Regulation 714/2009 states that "the network codes shall be developed for cross-border network issues and market integration issues and shall be without prejudice to the Member States' right to establish national network codes which do not affect cross-border trade". The notion of "cross-border trade" is however not defined by Regulation 714/2009. The notion appears however to be interpreted in a broad fashion by the Commission in order not to limit the scope and applicability of the network codes.* *- Article 21 of Regulation 714/2009 allows Member States to maintain or introduce measures that contain more detailed provisions than those set in Regulation 714/2009 also related to cross-border*

		trade issues; *- The CNCs, in their whereas parts (Whereas (30) RfG, (22) DCC and (18) HVDC), clarifies that the CNCs form an integral part of Regulation 714/2009, so that Article 21 of this Regulation applies to them. In application of these considerations, a Member State can adopt at national level:* *• network codes which do not affect cross-border trade and do not contradict EU law. For instance, Article 3(2) RfG enumerates several cases in which the RfG does not apply at national level: in this case Member States are still competent to define requirements applicable at national level. In addition, the RfG does not set rules to determine the voltage level to connection point: it lies within the competence of Member States (see Whereas (10) RfG);* *• more detailed provisions also related to cross-border trade issues than those established in the CNCs provided that, in accordance with the principle of subsidiarity, it is the most relevant level of intervention and they do not contradict the CNCs requirements in order to complement the EU Regulations.* *A possible criterion to evaluate the feasibility of national measures in the framework of energy matters could be the TFEU rules. According to the TFEU, it is possible to introduce measures constituting a barrier to trade if these measures are justified on limited grounds such as these foreseen in Articles 36 and 114 of TFEU.* *Applied to the CNCs, the following cases could be considered:* *- Extension of CNCs requirements to an additional category of grid user* *A national measure could apply to type B power generating modules (PGMs) requirements that the RfG only applies to type C PGMs. The RfG harmonises the application of the said requirements to PGMs. The national measure could therefore only be valid provided:* *- it is demonstrated it provides for a wide range of automated dynamic response with greater resilience to operational events defined by whereas (12) RfG;* *- it is allowed by the requirement's aims defined in the CNC's whereas and the specific CNC's*

		requirements; and *- it is demonstrated it does not affect cross-border trade, unless it is demonstrated the measure at national level merely details requirements of the CNCs.* *For instance :* *- Art. 4 RfG implies that type A and B existing power generating modules are not subject to RfG requirements even in case of substantial modifications. However, Member States can decide to extend the scope of application to such generating modules in order to improve CNCs' application provided the above conditions are met;* *- According to Article 18 of RfG, the U-Q/max profile applies only to type C and D synchronous power generating modules. A national measure can extend its scope of application to type B if compatible with the type B requirements' aims defined in whereas (12) RfG, the requirements' aims (see whereas (24) RfG) and type B requirements relating to voltage stability according to Article 17(2)(a).* *- Introduction of requirements not covered by the CNCs* *The possibility to introduce requirements at national level is feasible in two different cases:* *- not - cross border issues (most cases). The fact that a requirement is not detailed in a CNC could indicate that it is not affecting cross-border trade but this needs to be assessed on a case-by-case basis ;* *- in other cases, to complement EU regulations, provided that they do not contradict EU law.* *In case the measure would constitute a barrier to trade, it could still be valid provided it is justified by either Art. 30 TFEU or is considered as reasonable according to EU case law.* *- Wider national ranges of parameters than defined by CNCs* *Several CNCs requirements set ranges within which parameters need to be defined at the national level. It could be considered to define nationally parameters outside of the set range.* *For some requirements, the CNCs expressly authorise to define national parameters beyond the set ranges (e.g. frequency withstand capability for PGM, under Art. 13(2)(b) RfG). National measures doing so are justified as long as they respect the conditions set in the CNCs relevant provisions.* *When the national measures do no respect these*

		conditions or the CNCs do not expressly authorise to define national parameters beyond the set ranges, any deviation would go against the CNCs and is therefore not admissible, unless it is demonstrated the measure does not constitute a trade restriction. In summary, and in keeping with Ofgem's guidance, the proposals for GB implementation of the European Connection Codes are a minimum solution. Stakeholders are not precluded from identifying areas of further work where 'more stringent' requirements could be a restriction on cross-border trade but these do not have to be addressed now and are not part of the minimum solution for compliance.
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	Yes.
3	Do you agree that the comments raised from the GC0087 frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	Yes.
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	Yes.
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	No further comment on the proposals.
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules	Yes. This would seem to constitute a level playing field, technology neutral approach and as long as no undue costs are evidenced appears to be a sensible

	and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	way forward.
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	Yes, since unless these are included it will not constitute a complete solution (see answer to qu 6) or apply requirements equally to all equipment given current GB offshore arrangements.

Grid Code Workgroup Consultation Response Proforma

GC0101 EU Connection Codes GB Implementation – Mod 2

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 by **5pm** on **2 October 2017** to grid.code@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

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

Respondent:	*pthomas@nordex-online.com*
Company Name:	*Nordex Acciona Wind Power*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change that you wish to suggest, better	Yes

	facilitates the Grid Code Objectives?	
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	See below
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*No*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	No Comment
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	No Comment
3	Do you agree that the comments raised from the GC0087 frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	No Comment
4	Do you agree with the proposed	- ECC.6.3.2.6.1

	voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	- The referred parts ECC.6.3.2.3.2-5 apply to synchronous units. For clarification, do these parts also apply to power park modules of type C and D, and only in case of connection to embedded customers system or private network. - ECC.A.7.2.2 - Q(U) mode - The covered QU range of ECC.A.7.2.2c exceeds (ranges CDE and AGH) for some points the required QU steady state capability defined in Figure X3 for connections below 33 kV. Can it occur that continuously acting automatic voltage control is required from a power module connected to a voltage below 33 kV and will it be allowed to limit Q to what is shown in Figure X3? Do we interpret it correct that these range only have to be fulfilled if no current limits are exceeded? Please extend to current OR voltage limits. Nordex have implemented them where the connection permits reactive capability above X3. So the areas should be shaded and offered by the PPM (if available) - ECC.6.1.2.1.2 - If the frequency drops for a few seconds below 51.5 Hz and then again above 51.5 Hz, the power park module have to remain connected again for 15 minutes? Can a statement be added here that if 15 min including short interruptions where the frequency drops below 51.5 Hz. -
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	No Comment
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	No Comment

7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	No Comment

Grid Code Workgroup Consultation Response Proforma

GC0101 EU Connection Codes GB Implementation – Mod 2

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 by **5pm** on **2 October 2017** to grid.code@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

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

Respondent:	*Alan Creighton*
Company Name:	*Northern Powergrid*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change that you wish to suggest, better	The original proposal better facilitates the Grid Code and Distribution Code objectives. We are not convinced that the potential alternative related to the 'stringency' concern would better facilitate these

	facilitates the Grid Code Objectives?	objectives.
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	No
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*No* *If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, http://www2.nationalgrid.com/uk/industry-information/electricity-codes/grid-code/modifications/forms-and-guidance/ and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	We are not convinced by the arguments put forwards, but have no specific comments on the legality of the original proposal. Legal guidance from BEIS and / or Ofgem would probably be beneficial.
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	Yes
3	Do you agree that the comments raised from the GC0087	Yes

	frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	No response
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	No
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	No response
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	No response

Grid Code Workgroup Consultation Response Proforma

GC0101 EU Connection Codes GB Implementation – Mod 2

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 by **5pm** on **2 October 2017** to grid.code@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

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

Respondent:	*Alastair Frew*
Company Name:	ScottishPower Generation Ltd
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change that you wish to suggest, better	Yes as it implements European Law.

	facilitates the Grid Code Objectives?	
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	There is no question asking about legal text. I have the following legal text comments:- ECC.6.1.4.2.2 2nd sentence the word" voltage" has been replaced by the word "greater" where it should have been the word "wider" that was replaced. There are 2 sections numbered ECC.A.8.1.2 ECC.A.8.2.2.4 refers to the enclosed area with the points ABCDEFGH in figure ECC.A.8.2.2b the points are not referenced on the figure. ECC.A.8.2.2.6 refers to lines EF on figure EEC.A.8.2.2b which is not shown it also refers to line AB on figure EEC.A.7.2.2b, I assume it should be the figure EEC.A.8.2.2b and again line not shown Similarly ECC.A.8.2.2.7 refers to lines which are not shown. ECC.6.3.7.1.3 still has the reference "Gensets" in its text should this still be there.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	No

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope	Same response as in GC0100 as follows:- Looking at the third package it consists of a number of directives and regulations, with the two key pieces of legislation related to requirements on electricity providers being "Directive 2009/72/EC common rules for the internal market in electricity ..." and "Regulation 714/2009 on conditions for access to the network for cross-border exchanges in electricity ...". These two pieces of legislation seem to split requirements into two with 2009/72/EC dealing with the safety and minimum technical requirements, whilst 714/2009 deals with setting

	of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	cross-border rules on trade, energy flows and charging. In terms of 2009/72/EC when this was introduced in 2012 with GB responding indicating its minimum technical requirements were as follows "Article 5: Electricity Safety, Quality and Continuity Regulations 2002, Electricity Transmission Licence, Electricity Distribution Licence, Electricity Interconnector Licence attached. Technical codes including the Grid and Distribution Codes may be found at *http://www.ofgem.gov.uk/Licensing/ElecCodes/Pages/ElecCode.aspx* " Currently this consultation is dealing with the "Regulation 2016/631 Requirements for grid connection of generators" which has been produced as a deliverable from 714/2009. Given the scope of 714/2009 it is surprising that such a technically detailed version of 2016/631(RFG) has been produced on the bases of a three word title in Article 8 paragraph 6 (b) "network connection rules;", however we are where we are. Specifically dealing with no more stringent requirements, this seems to be based on a premise that any technical requirements not included in the connection codes 2016/631(RFG), 2016/1388(DCC) or 2016/1447(HVDC) are more stringent, and hence is not permissible. As previously stated minimum technical requirements are detailed within 2009/72/EC and not 714/2009 which defines the criteria for 2016/631(RFG). This is further emphased in the opening whereas section of 2016/431(RFG) in item (2) second sentence states "..... In addition Article 5 of Directive 2009/72/EC of the European Parliament and of the Council (2) requires that Member States or, where Member States have so provided, regulatory authorities ensure, inter alia, that objective technical rules are developed which establish minimum technical design and operational requirements for the connection to the system. ..." . This indicates that 2016/631(RFG) is an addition to any rules set by 2009/72/EC. Moreover it is clear that it was not the indention for the new network codes to remove existing national codes as 714/2009 which defines the requirements for drafting the network codes has in Whereas (7) third sentence "The network codes prepared by the ENTSO for Electricity are not intended to replace the necessary national network codes for non-cross-border issues." Given the above there does not seem to be any justification for the premise that technical requirements not included in the network codes are more severe and should not be allowed. In summary in GB the current accepted minimum technical standards appear to be the Electricity Safety, Quality and Continuity Regulations 2002, Electricity Transmission Licence, Electricity Distribution Licence, Electricity Interconnector Licence, the Grid and Distribution Codes with additional requirements of the network codes being added as they are enacted. The only issue which may exist is which version of the

		various documents is currently the approved version. Following the initial submission in 2012 there does not appear to be any clear evidence that the modification process in "Directive 98/34/EC laying down a procedure for the provision of information in the field of technical standards and regulations" has been followed.
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	Yes
3	Do you agree that the comments raised from the GC0087 frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	Yes
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	Yes
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	No

6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	Yes
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	Yes

Grid Code Workgroup Consultation Response Proforma

GC0101 EU Connection Codes GB Implementation – Mod 2

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

Respondent:	*Isaac Gutierrez* *Senior Electrical Engineer* *Telephone number work: 01416143104* *Mobile: 07761693652* *Email: igutierrez2@scottishpower.com*
Company Name:	*Scottishpower Renewable ltd (UK)*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity. Impact of this consultation on this objective is neutral ii. To facilitate 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).. Impact of this consultation on this objective is neutral iii. 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. Impact of this consultation on this objective is neutral iv. 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 . Impact of this consultation on this objective is negative as National Grid in trying to implement more onerous requirement is not complying with European Law v. To promote efficiency in the implementation and

	administration of the Grid Code arrangements. Impact of this consultation on this objective is neutral as the consultation seems to be rushed in a not very efficient manner

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	Yes, to some extent but please refer to comment within SPR response to this consultation.
2	Do you support the proposed implementation approach?	No, timescales are too short which are not allowing current wind farm tenderers to exactly know what grid code requirements they have to meet. The implementation date of 17 May 2018 does not provide enough room for timely decision making in regards to electrical balance of plant and wind turbines electrical specifications. SPR considers that a grace period should be implemented until December 2018 so any contract signed after December 2018 should comply with the Grid Code changes otherwise the implementation date of 17 May 2018 will highly impact developers.
3	Do you have any other comments?	No
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, http://www2.nationalgrid.com/uk/industry-information/electricity-codes/grid-code/modifications/forms-and-guidance/ and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members	Although currently most SPR power generating plant is able to meet the current UK Grid Code requirements, there is certainly opposition from SPR to National Grid applying more stringent requirement than those currently in RfG to new generators as

	that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	definitively there will be an impact in CAPEX and OPEX. SPR believes that there is incompatibility with European Law as some of the requirements that National Grid is trying to implement are more onerous than those set out in RfG
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	Agree
3	Do you agree that the comments raised from the GC0087 frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	No. SPR raised the issue that windfarm cannot respond to LFSM-U unless the windfarm deload as required for FSM. It is not clear from the current consultation what is expected for windfarms in regards to LFSM-U. SPR believe that the requirements need to be clearer for windfarms otherwise it should not be a mandatory requirement. Also SPR disagree with National Grid response in regards to inertia as wind turbines have some inertia but not enough as required by National Grid. Please refer to embedded annex 2 with National Grid responses where SPR highlight National Grid comments that have not been fully addressed during the current consultation. In addition, SPR made comments in regards to droop and ASBMON that not seem to have been included in Annex 2 or even been considered. Workgroup Consultation Annex 2 Frequency Response Provisions Response S
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and	No, Voltage ranges for DC connected power park modules are beyond those requested in RfG. This for a DC connected windfarm can definitively increase CAPEX and OPEX

	parameters) captured under the HVDC Code are reasonable? If not please advise why.	
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	No, there is no point on setting values longer than those required in RfG. Again National Grid is trying to apply a requirement that is more onerous than that in RfG requirement
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	No, as per boundaries shown in figure 5.1 (b) Tittle III will apply definitively offshore for DC connected power park modules. There will be an impact on the equipment to meet the requirement in the offshore DC platform and those requirement in the onshore connection for the proper operation of the system (cost increase is very likely).
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	Yes

Grid Code Workgroup Consultation Response Proforma

GC0101 EU Connection Codes GB Implementation – Mod 2

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Please send your responses by **5pm** on **2 October 2017** to grid.code@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

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

Respondent:	*Please insert your name and contact details (phone number or email address)*
Company Name:	*Please insert Company Name*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change	Yes

	that you wish to suggest, better facilitates the Grid Code Objectives?	
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	The timeframe for review has been insufficient to fully analyse the proposed changes to the legal text. We understand the U/Q and voltage control charts shown in Figure X2 (paragraph ECC.6.3.2.6.2) applies when the grid transformer OLTC is within control of the PPU. In Scotland the grid transformer and OLTC will often be within control of the relevant TSO and in this case Figure X3 (paragraph ECC.6.3.2.6.3) should apply.
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, http://www2.nationalgrid.com/uk/industry-information/electricity-codes/grid-code/modifications/forms-and-guidance/ and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	The EU Network Codes are in most areas flexibly worded to allow individual members to derive national requirements. Of highest importance is the focus on interconnection requirements rather than new more stringent requirements for individual generators. Current grid code review and other existing panels should be used to discuss and derive the requirement based on cost benefit analysis. NGET as network operator and member of ENTSO-e has significant input into the development of the EU Network Codes and should adhere to GB review and acceptance processes. EU Network Codes in its overall framework are not intended to interfere significantly with national matters and to drive higher requirements.
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in	Yes

	particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	
3	Do you agree that the comments raised from the GC0087 frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	Yes
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	We believe it would be appropriate to have a reduced set of requirements for offshore PPM connected via an HVDC link.
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	We believe it would be appropriate to have a reduced set of requirements for offshore PPM connected via an HVDC link.
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	No

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GC0101 EU Connection Codes GB Implementation – Mod 2

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 by **5pm** on **2 October 2017** to grid.code@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

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

Respondent:	*Marko Grizelj, marko.grizelj@siemens.com, 01614466930*
Company Name:	*Siemens*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	In general, the work group consultation was a success with a number of key topics being addressed. Unfortunately, due to the lack of manufacturer presence, particularly for HVDC, a number of topics were not addressed in sufficient detail. Siemens's views on particular matters within this consultation will be reflected in the answers to the questions below. *For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives?	
2	Do you support the proposed implementation approach?	
3	Do you have any other comments?	
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*If yes, please complete a WG Consultation Alternative Request form, available on National Grid's website, http://www2.nationalgrid.com/uk/industry-information/electricity-codes/grid-code/modifications/forms-and-guidance/ and return to the Grid Code inbox at grid.code@nationalgrid.com*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in	The comments have not been fully addressed. Reactive power requirements for Remote HVDC Converters are the same as those for Title II Converters. Suitable wording must be included in the

	particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	modification to ensure that these requirements can be subject to change if agreed with the GB System Operator, the Generator and the Offshore Transmission Licensee (similar wording has been used in GC0100 and for the DC Connected Power Park Modules). A similar principle should be applied for DC connected power park modules, example on the last paragraph of page 14 of the mod. This will ensure that the most cost-effective solutions can be implemented as needed, within the regulations set out within the European Grid Code.
3	Do you agree that the comments raised from the GC0087 frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	As stated above, the requirements imposed on remote end HVDC converters and DC connected power park modules should allow for flexibility (within the terms of European Grid code) if agreed on a project specific basis. It is unreasonable to apply onshore requirements to an offshore grid that is completely decoupled from the main network. The offshore grid voltage, frequency and power requirements are completely controlled by the remote end HVDC converter and/or DC Connected power park modules. This flexibility should be reflected in the grid code implementation.
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	As an example, the proposed time durations for 47.0 Hz with 60 seconds will require an overdesign of aux-equipment especially converter cooling pumps or the usage of an UPS system for the converter cooling.
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined	Yes, for HVDC Systems. No for DC Connected Power Park Modules and Remote End HVDC Connectors. The offshore system (when connected via a HVDC link) is decoupled from the Onshore AC grid. Consequently, the voltage, frequency and, in particular, reactive power requirements should be made adjustable (within the framework of the EU

	under RfG? If not please state so.	code) to take in to consideration the topology of the offshore array, technology deployed by the turbine manufacturer, technology deployed by the HVDC manufacturer and the corresponding agreements between the relevant stakeholders.
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	Yes.

Grid Code Workgroup Consultation Response Proforma

GC0101 EU Connection Codes GB Implementation – Mod 2

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 by **5pm** on **2 October 2017** to grid.code@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

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

Respondent:	*Graeme Vincent* *Graeme.vincent@spenergynetworks.co.uk*
Company Name:	*SP Energy Networks*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change	We believe that the proposals outlined in the GC0101 Original Proposal better facilitate the Grid Code Objectives.

	that you wish to suggest, better facilitates the Grid Code Objectives?	
2	Do you support the proposed implementation approach?	Yes
3	Do you have any other comments?	Only one specific query, which we were unsure of; The consultation states that "For operation in LFSM-O Mode it would also mean that the Power Output should start to drop off above 50.4Hz irrespective of the loading point of the Power Generating Module. Would it be possible for synchronous machines operating at SEL, to de-load below their *real* Stability Export Limit?
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*No*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	We do not share this interpretation and don't believe that this was the original intention when the codes were being developed.
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	We note that the comments which we previously made have been addressed.
3	Do you agree that the comments	No response

	raised from the GC0087 frequency response consultation have been addressed; if not please advise why these issues have not been addressed?	
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	No response
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	No response
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	No response
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	Yes – the codes should equally apply to these arrangements and therefore to provide certainty and also transparency, these arrangements should be included within the drafting.

Grid Code Workgroup Consultation Response Proforma

GC0101 EU Connection Codes GB Implementation – Mod 2

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 by **5pm** on **2 October 2017** to grid.code@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

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

Respondent:	*Garth Graham (garth.graham@sse.com)*
Company Name:	*SSE*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	*For reference, the Grid Code objectives are:* i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity ii. To facilitate 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) iii. 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 iv. 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 v. To promote efficiency in the implementation and administration of the Grid Code arrangements

Standard Workgroup Consultation questions

Q	Question	Response
1	Do you believe that GC0101 Original proposal, or any potential alternatives for change that you wish to suggest, better	**ORIGINAL** We do not believe that GC0101 does better facilitate the Grid Code Objectives as it fails to discharge the

	facilitates the Grid Code Objectives?	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. As the National Grid presentation to EnergyUK on 23rd May 2017 noted, in respect of the three connection codes (RfG, DCC and HVDC), the aim of these Network Codes is to "*Set consistent technical requirements across EU for new connections of user equipment (e.g. generation / interconnectors)*". This accords with the recitals of the RfG, DCC and HVDC Network Codes. However, as both the Proposer's explanations to the Workgroup and the legal text makes clear there is not even to be a set of consistent technical requirements across GB (let alone with the EU) for new connections as a result of GC0101 as, for example, apparently many of these multiple technical requirements are, instead, to be determined by the network operate alone, in a non-open / non-transparent way, and applied differently to each new connection. This non-harmonised approach is inconsistent with the EU Network Codes. Furthermore, the imposition of additional costs (such as the twelve items listed on pages 44-45 of the Workgroup consultation document) will affect cross border trade between Member States as well as within the Member State (between GB and Northern Ireland) and as such will not be in compliance with Article 8(7) of Regulation 714/2009. In addition to not being better in terms of Objective (iv) the GC0101 Original does better facilitate the Grid Code Objectives (ii), (iii) and (v) as it: fails to facilitate competition in the generation and supply of electricity (by not complying with EU law – see above – and imposing additional costs on GB generation); fails to promote security and efficiency in electricity generation (by not complying with EU law – see above); and fails to promote efficiency in the implementation and administration of the Grid Code arrangements (by not

		complying with EU law – see above). **POTENTIAL ATLERNATIVE (a)** We do believe that potential alternative (a) does better facilitate the Grid Code Objectives as it ensures the discharging of the obligations imposed upon the licensee by its license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency. As the National Grid presentation to EnergyUK on 23rd May 2017 noted, in respect of the three connection codes (RfG, DCC and HVDC), the aim of these Network Codes is to "*Set consistent technical requirements across EU for new connections of user equipment (e.g. generation / interconnectors)*". This accords with the recitals of the RfG, DCC and HVDC Network Codes. It is clear that this potential alternative (a) seeks to ensure that only those obligations applicable to newly connecting parties that fall within the scope of the EU Network Codes will be implemented into the GB national network codes (such as, but not limited to, the Grid Code and Distribution Code) as required by those EU Network Codes. As detailed on pages 40-47 of the Workgroup consultation document there are clear reasons as to why this is required. In addition to being better in terms of Objective (iv) the potential alternative (a) also better facilitate the Grid Code Objectives (ii), (iii) and (v) as it: as by complying with EU law – see above – and not imposing additional costs (over and above those required by law) on GB generation it facilitates competition in the generation and supply of electricity; as by complying with EU law – see above – and not imposing additional costs (over and above those required by law) on GB generation it promotes security and efficiency in electricity generation; and as by complying with EU law – see above – and not

		imposing additional costs (over and above those required by law) on GB generation it promotes efficiency in the implementation and administration of the Grid Code arrangements.
2	Do you support the proposed implementation approach?	We note the proposed implementation approach set out in Section 8 and support this.
3	Do you have any other comments?	We have two further comments relating to (1) the draft legal text and (2) the affect on cross border trade. Firstly, we do not agree that the draft legal text contained in Annex 3 delivers the intent of the solution outlined in Section 3. This is because the intent of the GC0101 solution is to ensure that all the requisite applicable articles of the EU Network Codes (RfG, DCC and HVDC) are implemented into the national network codes (namely the Grid Code and Distribution Code). However, there is no evidence provided that clearly maps over each of the EU Network Code obligations (that GC0101 is intended to implemented into the national network codes) to the draft legal text. It was clear from the August Workgroup review of the draft legal text that multiple gaps and inconsistency existed (at that time) between the draft legal text and the delivery of the intent of the solution outlined in Section 3 of the Workgroup consultation. Our review of the latest draft legal text shows that many gaps and inconsistencies still exist. Absent a clear mapping of the EU Network Code articles to the draft legal text we cannot see how either (a) the Workgroup; or (b) stakeholders; or (c) the requite Code Panel(s); or (d) Ofgem can say that the draft legal text does deliver the solution outlined in Section 3. Notwithstanding the above, we also note that the draft legal text appears to be in direct contravention of the EU Network Codes. By way of example, the suggested use of the existing national definitions, amended in part by the EU Network Code requirements, has the unintended (or possibly intended?) consequence that it will not be clear to existing connected parties that, in fact, they

		are not actually bound by the EU Network Code amended definitions within the Grid Code (or Distribution Code) as this would be applying those EU Network Codes definitions (and associated obligations) to existing connected parties without either (1) a CBA being undertaken or (2) those parties having substantially modified their respective connection agreement(s) which would be in direct contravention of the RfG, DCC and HVDC Network Codes. Secondly, we note the Workgroup deliberations in respect of the *affect on cross border trade*. The Workgroup may wish to take due notice of the Commission's guidance in this regard – available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3Al26113 It sets out the following: *"**the concept of "trade between EU countries"**: the concept of "trade" is not limited to traditional exchanges of goods and services across borders. It is a wider concept, covering all cross-border economic activity including establishment. This interpretation is consistent with the fundamental objective of the Treaty to promote free movement of goods, services, persons and capital. The requirement that there must be an effect on trade "between EU countries" implies that there must be an impact on cross-border economic activity involving at least two EU countries;* ***the notion "may affect"**: the function of the notion "may affect" is to define the nature of the required impact on trade between EU countries. According to the standard test developed by the Court of Justice, the notion "may affect" implies that it must be possible to foresee with a sufficient degree of probability on the basis of a set of objective factors of law or fact that the agreement or practice may have an influence, direct or indirect, actual or potential, on the pattern of trade between EU countries. In cases where the agreement or practice is liable to affect the competitive structure inside the EU, EU law jurisdiction is established; "*
4	Do you wish to raise a WG Consultation Alternative Request for the Workgroup to consider?	*No.*

Specific GC0101 questions

Q	Question	Response
1	As set out under 'Potential Alternatives - (a) Removing More Stringent Requirements' concerns have been expressed by some Workgroup Members that applying more stringent requirement on newly connecting parties (that fall within this scope of the EU Network Codes for generation, demand and HVDC systems) maybe incompatible with EU law. Do you have any views on this topic that could assist the Workgroup when they are considering the topic in due course?	We fully support the concerns set out on pages 40-47 of the Workgroup Consultation as regards the need to remove (from the proposed Original) the more stringent requirements when implementing the EU Network Codes into the GB national codes (namely the Grid Code and Distribution Code). We note that to date the deliberations within the Workgroup have tended to be focused by those who hold a contrary view on the 'policy' position; namely that those who hold this contrary view (which is primarily network operators) seek to retain the existing status quo obligations set out in both the Grid Code and Distribution Code on new connecting parties who in the future will be encompassed within the scope of the EU Network Codes. However, this is at odds with both the position of BEIS and Ofgem who have both acknowledges that it may be necessary to remove or amend existing GB national network code obligations that conflict with the EU Network Code obligations. This position was most recently reaffirmed by Ofgem in their 30th August 2017 letter (in respect of GC0103): "*To ensure the full and timely implementation of the EU Connection Codes, we are therefore encouraging the Grid Code Panel to focus on:* *a) bringing forward any new Grid Code provisions made necessary by virtue of the EU Connection Codes; and* *b) removing or amending any existing Grid Code provisions which may conflict with the EU Connection Codes.*" [emphasis added] Whilst we can appreciate that some Workgroup members may hold a contrary view from a 'policy' perspective, we note that, in our view, this is a matter of 'law' (not 'policy') and that no counter legal arguments have been forthcoming. Furthermore, even if such arguments were to come forward we would strongly argue that the Workgroup should put forward this potential alternative as a formal Alternative so that Ofgem (who are the correct

		body to consider this matter) are able to determine on this matter of law by choosing between the two (the Original and this potential alternative). Failure to put forward this as a formal Alternative runs the serious risk that Ofgem will either: (a) be unable to determine on GC0100 (and have to send it back); or (b) (depending on the CMP261 deliberations around the legality or otherwise of post send back changes to WACMs) reject the Original proposal, and any other Alternative(s) related to it, as it does not address the 'more stringent' matter which is in contravention of EU law. Either of these necessary additional aspects will, if applicable, delay the implementation of the GC0101 solution which is not in the wider interest of all concerned. Notwithstanding any Ofgem decision on GC0101 it should also be noted that all TSOs, DSO and relevant network operators are bound to comply with the applicable EU law even if this is in contravention of any national law provisions (such as, but not limited to, their respective licences or national network codes including, but not limited to, the Grid Code or Distribution Code). They cannot, for example, rely on any national provisions that place them in contravention of their EU law duties. Newly connecting parties which fall within the scope of the EU Network Codes could, in those circumstances where EU law has been contravened, seek full legal redress against the contravening party or parties in the national and / or EU courts.
2	Do you agree that the comments raised from the GC0048 voltage/reactive consultation have been addressed, in particular those relating to the Offshore reactive range. If not please advise why these issues have not been addressed?	Yes – we agree these points have been adequately addressed.
3	Do you agree that the comments raised from the GC0087 frequency response consultation have been addressed; if not	Yes – we agree the comments from GC0087 have been adequately addressed.

	please advise why these issues have not been addressed?	
4	Do you agree with the proposed voltage/ reactive and frequency requirements (including associated diagrams and parameters) captured under the HVDC Code are reasonable? If not please advise why.	Yes – we agree the proposed voltage / reactive and frequency requirements under the HVDC code are reasonable.
5	Do you have any views on the time durations proposed for the frequency ranges defined in the Annex I of the HVDC Code? The time durations must be longer than those stipulated for RfG, however is there any materiality for an HVDC System in setting a value longer than that required under the RfG Code.	No.
6	Do you believe it is reasonable to require HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG? If not please state so.	In our view it is only reasonable for HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet the requirements of the applicable EU Network Code for connection which, in this case, is the HVDC Network Code. Noting that the approval of the RfG preceded the approval of the HVDC Network Code it is clear that if the drafters (of the HVDC Network Code) had intended for HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet similar requirements to Type D Power Park Modules defined under RfG that they would have simply (and easily) drafted it accordingly. If they have not done so then there must have been a reason for this and it is not for the national implementation to undermine the intent of the EU law in this regard.
7	Do you agree that the Offshore Transmission Arrangements (OTSDUW) should be included as part of the drafting?	In our view it is only reasonable for HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations to meet the requirements of the applicable EU Network Code for connection which, in this case, is the HVDC Network Code. The application to Offshore Transmission Arrangements (OTSDUW) which has the effect of applying the HVDC Network Code and / or other EU

		Network Codes to new Offshore Transmission connections (that are not HVDC Systems, DC Connected Power Park Modules and Remote End HVDC Converter Stations) would be both inappropriate and incompatible with EU law.