

GC0102 EU Connection Codes GB Implementation – Mod 3

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 Thursday 9th November 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 forwarded to grid.code@nationalgrid.com with subject clearly stating 'GC0102 Consultation Query'

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| Respondent: | <i>Peter Woodcock 07770302131 Peter.woodcock@rwe.com</i> |
| Company Name: | <i>RWE Generation UK</i> |
| Please express your views regarding the Workgroup Consultation, including rationale. (Please include any issues, suggestions or queries) | <p><i>For reference, the Grid Code objectives are:</i></p> <ul style="list-style-type: none"> 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 |
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| 1 | Do you believe that GC0102 Original Proposal, or any potential alternatives for change that you wish to suggest, better facilitates the Grid Code Objectives? | This is enabling the development of the transmission system and I can see that the security of the system will improve. However improving efficiencies in terms of competition, Code administration and generation costs has been worsened due to the complexity of the changes to the Code which have been enforced by RfG. However I cannot think of any significant improvement of what has been suggested by the Original Proposal or the Alternative Proposal. |
| 2 | Do you support the proposed implementation approach? | I am in support of this approach as it builds on the existing Code whilst integrating the RfG requirements into it. There are no significant concerns and just finer details which may be improved in future modifications once the Code is used in practice. |
| 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, I believe that the one currently under consideration is suitable. |

Specific GC0102 Consultation Questions

| Q | Question | Response |
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| 5 | Do you have any comments on the structure of the proposed relationship between the D Code, G59 and G83, and G98 and G99? In particular which of the three options in Section 3.2 of this consultation do you support and why? | I believe that option 3 is the most sensible structure to follow as this provides a concise document for microgenerators and a detailed document for larger projects who should have the technical capability of understanding which requirements are applicable for their situation. |
| 6 | Do you agree with the organization of G99 and how it applies to the different Types of generation? Do you have any alternative suggestions for structure? | Yes this seems sensible. |

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| 7 | Do you agree with the current view of how the Grid and Distribution Codes (and G98 and G99) will be applied to installations where new PGMs are installed alongside existing pre-RfG equipment? (see page 11) | <p>6.1.3.2 and 6.1.4.2 of G99 is clear and easy to understand. Table 6.1 is very useful to align specific projects to get a guide / appreciation of the approach to take, however not all scenarios are possible to cover here.</p> <p>What is the process if a dispute occurs between DNO and generator about the requirements for a project?</p> |
| 8 | Do you agree on the introduction of a Preliminary Operation Notification relating to the Compliance process for Transmission connected Type B and Type C PGMs? (See <i>Workgroup discussions section</i>) | <p>I think this is to the benefit of type B and C generators when considering connection to the transmission system as it gives a structured approach (process) to obtaining a FON. Therefore I do agree that a PON is required.</p> <p>However I would like clarification following the issue of a FON to a type B or C generator and then subsequent discovery of an compliance issue. Would a LON or PON be issued to manage the issue?</p> |
| 9 | Do you agree with the retaining of the current GB arrangements for automatic connection and reconnection and the logic for it? If not, what alternative should be proposed? (see section 4.1.2.2) | This does seem logical and so I agree with the approach. |
| 10 | Do you consider any parts of the proposed compliance, simulation or testing requirements for distribution-connected generators to be disproportionately onerous? (See section 5.2.5) | No |
| 11 | Do you agree it is appropriate to drop the designation Large and Small from the Distribution Code as proposed in section 3.3.1 of this consultation? Do you believe it is appropriate to drop the designation Large, Medium and Small from the Grid Code? | <p>As we are forced to adopt the Type definitions, it is appropriate to remove the LMS references as much as possible to avoid confusion for new generators.</p> <p>However it is too much work to do this completely and I would suggest that the term medium is kept in the interim for the D Code. For future clarity I would suggest that a working group should be set up to look at this and other Coding areas which utilise LMS and attempt to convert this to the Type definitions. Note that this may be part of the future European Network Code requirements (Electricity</p> |

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| | | <p>Balancing?).</p> <p>For example 6.1.3.1 in G99 still refers to large power stations in the Grid Code.</p> |
| 12 | Do you have any comments on the draft requirements for fault recording equipment for distribution-connected Type C PGMs as drafted in Section 13.11 and Appendix C3 of G99? | It may be more appropriate to only consider including harmonic recording if there is found to be a specific concern, say following a harmonics study. This would save unnecessary cost of including permanent harmonic monitoring, which may be a significant cost. |
| 13 | Do you agree that it is appropriate to include storage in G98 and G99, noting that as storage is explicitly excluded from the RfG, the technical requirements that arise solely from the RfG are not applied to storage in G09 and G99? | Yes, it is appropriate. It is entirely likely that distributed battery storage (e.g. bidirectional vehicle chargers) will be controlled by national 'aggregators'. In theory individual installations would/should come under Type A Generators. These Generators are likely to play an increasingly significant role in balancing, frequency response, arbitrage, etc.. and so should be considered alongside other non-storage technologies. |
| 14 | Do you agree that it is appropriate to include Type A PGMs <800W in capacity in G99, noting that those technical requirements that emanate from the RfG are not applied to PGMs <800W? | Is this in reference to section 2.3 and 6.1.2 of G99? If so this is not an issue as they refer the reader to G98. However it was my understanding that any PGM rated less than 800W does not need a type definition, so this question is a bit confusing. |
| 15 | If you do not consider the proposed solution to sufficiently harmonise the connection requirements for new parties connecting to the transmission and distribution networks, how would you propose this to be addressed? (See <i>Workgroup discussions section</i>) | I believe that the proposed solution is adequate enough for generators connected in England, which is my main focus. I do not have enough appreciation / experience for the complexities of network ownership in Scotland. |
| 16 | G98 and G99 include specific requirements for power quality, harmonic compliance etc. Do you believe it should be possible to use other international standards or requirements to achieve these ends such that these specific requirements can be dropped from these documents? An explanation | In the case of harmonics, G5/4 provides a means for calculating, or at least predicting, harmonic voltages from a manufacturer's supplied figures of harmonics currents. Reference to the G5/4, or equivalent, process should be sufficient without having to reiterate in G98/99. Accepting results of data from other international standards would have to be approached intelligently on a case-by-case basis. |

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| | of your views would be useful. | |
| 17 | Do you agree that the explanation of type testing, both full and partial, and the inclusion of equipment certificates, is sufficiently clear and unambiguous in G99 drafting? Please make any suggestions that could add clarity. | It would be very useful to include the table in section 5.2.5 of the workgroup report in G99 as I found this a very good summary. |
| 18 | The application of new technical requirements to non-type tested generation connecting to distribution networks will give rise to new processes etc. Please comment on how comprehensive the coverage of this is in the current drafting of G99 and please suggest any improvements | Ran out of time to review this in detail! |
| 19 | Do you have any views on how the data and information required and articulated within G99 can or should relate to the Distribution Data Registration Code in the Distribution Code? | No |
| 20 | Do you believe that this modification helps to promote transparency across the Industry and if not which areas should be improved? (see <i>Workgroup discussions section</i>) | <p>I believe that the debate on transparency and whether putting requirements in the bilateral agreement is acceptable needs to continue. This is a lot of work to identify all the references to bilateral agreements in the Code, however due to time restrictions in the working group meetings, more work does need to be done on this to identify specific examples and come up with a more transparent solution.</p> <p>At this stage, my personal opinion would be to make the additional BCA requirements public, e.g. intertrip, but not the technical details. This would then be published in a matrix with checks for all the applicable requirements. Competitors would then be able to cross reference similar sites and identify which requirements they are operating under the bilateral connection agreement.</p> |

Legal drafting questions

| Q | Question | Response |
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| 21 | The Proposed draft Grid Code legal text contains a number of comments | No further comments as of now. |

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| | incorporating both internal and workgroup comments. Please feel free to provide further comment on the documents (Annex 1-5) | |
| 22 | Do you have any views on the structure of the Grid Code drafting for System Management and Compliance? (Annex 1-5) | No |
| 23 | Are there are any areas in the Grid Code or Distribution Code drafting which you do not believe reflect the requirements of the RfG or HVDC Codes and, if so, why do you believe they are deficient? (Annex 1-9) | No |
| 24 | Please make any other comments on the legal text drafting for the Distribution Code, G98 and G99 using the appropriate templates issued with this consultation. | |