

Workgroup Terms of Reference and Membership

GC0137: Minimum Specification Required for Provision of GB Grid Forming (GBGF) Capability (formerly Virtual Synchronous Machine/VSM Capability)

Responsibilities

The Workgroup is responsible for assisting the Grid Code Modification Panel in the evaluation of Grid Code Modification Proposal **GC0137: Minimum Specification Required for Provision of GB Grid Forming (GBGF) Capability (formerly Virtual Synchronous Machine/VSM Capability)**

1. raised by **National Grid Electricity System Operator** at the Modifications Panel meeting on **19 December 2019**. The proposal must be evaluated to consider whether it better facilitates achievement of the Applicable Grid Code Objectives.

Applicable Grid Code Objectives

- 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; and
- 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. In conducting its business, the Workgroup will at all times endeavour to operate in a manner that is consistent with the Code Administration Code of Practice principles.
- v) To promote efficiency in the implementation and administration of the Grid Code arrangements.

Scope of work

2. The Workgroup must consider the issues raised by the Modification Proposal and consider if the proposal identified better facilitates achievement of Grid Code Objectives.
3. In addition, the Workgroup shall consider and report on the following specific issues:

Workgroup Term of Reference	Location in Workgroup Report (to be completed at Workgroup Report stage)
a) Implementation and costs;	Page 50

b) Review draft legal text should it have been provided. If legal text is not submitted within the Grid Code Modification Proposal the Workgroup should be instructed to assist in the developing of the legal text; and	Annex 19
c) Consider whether any further Industry experts or stakeholders should be invited to participate within the Workgroup to ensure that all potentially affected stakeholders have the opportunity to be represented in the Workgroup. Demonstrate what has been done to cover this clearly in the report	Nominations for this workgroup achieved a quorate and diverse membership of 40+ members.
d) Consider EBGL implications	Page 8
e) Agree the minimum specification for Virtual Synchronous Machine (VSM) capability and define the term clearly.	Referenced throughout the report
f) Consider what the testing requirements would be	Page 33
g) Consider if adding the minimum specification to the Grid Code is a limiting factor to innovation	Page 42
h) Consider the related developments in the market and how that may affect the minimum specification (e.g. phase 2 of the stability pathfinder)	Page 42
i) Consider the inadvertent impact of the minimum specification for Virtual Synchronous Machine (VSM) capability on existing users	Referenced throughout the report
j) Consider other code impacts	Page 8
k) Consider examples of VSM technology	Referenced throughout the report

4. As per Grid Code GR20.8 (a) and (b) the Workgroup should seek clarification and guidance from the Grid Code Review Panel when appropriate and required.

5. The Workgroup is responsible for the formulation and evaluation of any Workgroup Alternative Grid Code Modifications arising from Group discussions which would, as compared with the Modification Proposal or the current version of the Grid Code, better facilitate achieving the Grid Code Objectives in relation to the issue or defect identified.
6. The Workgroup should become conversant with the definition of Workgroup Alternative Grid Code Modification which appears in the Governance Rules of the Grid Code. The definition entitles the Group and/or an individual member of the Workgroup to put forward a Workgroup Alternative Code Modification proposal if the member(s) genuinely believes the alternative proposal compared with the Modification Proposal or the current version of the Grid Code better facilitates the Grid Code objectives. The extent of the support for the Modification Proposal or any Workgroup Alternative Modification (WAGCM) proposal arising from the Workgroup's discussions should be clearly described in the final Workgroup Report to the Grid Code Review Panel.
7. Workgroup members should be mindful of efficiency and propose the fewest number of WAGCM proposals as possible. All new alternative proposals need to be proposed using the Alternative Request Proposal form ensuring a reliable source of information for the Workgroup, Panel, Industry participants and the Authority.
8. All WAGCM proposals should include the Proposer(s)'s details within the final Workgroup report, for the avoidance of doubt this includes WAGCM proposals which are proposed by the entire Workgroup or subset of members.
9. There is an option for the Workgroup to undertake a period of Consultation in accordance with Grid Code GR. 20.11, if defined within the timetable agreed by the Grid Code Panel. Should the Workgroup determine that they see the benefit in a Workgroup Consultation being issued they can recommend this to the Grid Code Review Panel to consider.
10. Following the Consultation period the Workgroup is required to consider all responses including any Workgroup Consultation Alternative Requests. In undertaking an assessment of any Workgroup Consultation Alternative Request, the Workgroup should consider whether it better facilitates the Grid Code Objectives than the current version of the Grid Code.
11. As appropriate, the Workgroup will be required to undertake any further analysis and update the appropriate sections of the original Modification Proposal and/or WAGCM proposals (Workgroup members cannot amend the original text submitted by the Proposer of the modification). All responses including any Workgroup Consultation Alternative Requests shall be included within the final report including a summary of the Workgroup's deliberations and conclusions. The

report should make it clear where and why the Workgroup chairman has exercised their right under the Grid Code to progress a Workgroup Consultation Alternative Request or a WAGCM proposal against the majority views of Workgroup members. It should also be explicitly stated where, under these circumstances, the Workgroup chairman is employed by the same organisation who submitted the Workgroup Consultation Alternative Request.

12. The Workgroup is to submit its final report to the Modifications Panel Secretary on **21 July 2021** for circulation to Panel Members. The final report conclusions will be presented to the Grid Code Review Panel meeting on **29 July 2021**.

Membership

13. It is recommended that the Workgroup has the following members:

Role	Name	Representing
Chair	Kavita Patel	Code Administrator Representative
Technical Secretary	Rashpal Gata-Aura	Code Administrator National Grid Electricity System Operator
Proposer	Matt Baller	National Grid Electricity System Operator
Technical Codes Representative	Antony Johnson	National Grid Electricity System Operator
Workgroup Member	Alastair Frew	Drax
Workgroup Member	Andrew Roscoe	Siemens Gamesa Renewal Energy
Workgroup Member	Andrzej Adamczyk	G E Power
Workgroup Member	Andy Vaudin	EDF
Workgroup Member	Ben Hillman	SP Energy Networks
Workgroup Member	Ben Marshall	SHE Transmission Ltd
Workgroup Member	Carl Barker	GE Power
Workgroup Member	Christopher Smith	National Grid Interconnectors Ltd
Workgroup Member	Damian Jackman	SSE

Workgroup Member	Dr.-Ing. Thorsten Bülo	SMA Solar Technology AG
Workgroup Member	Eric Anthony Lewis	Enstore
Workgroup Member	Francesco Cristiano	Highview Power
Workgroup Member	Goran Drobnjak	General Electric
Workgroup Member Alternate	Iftekhharul Huq+B3B23:C34	Siemens AG
Workgroup Member	Isaac Gutierrez	Scottish Power Renewables
Workgroup Member Alternate	Janet Lees	SSE
Workgroup Member	Marko Grizelj	Siemens AG
Workgroup Member	Meghdad Fazeli	Swansea University & Innoverters-Ltd
Workgroup Member	Mike Kay	P2Analysis
Workgroup Member	Qing-Chang Zhong	Syndam LLC
Workgroup Member	Robert Longden	Cornwall Insight
Workgroup Member	Roberto Rosso	ENERCON GmbH
Workgroup Member	Ruth McKelvie	Scottish Power Renewables
Workgroup Member	Sigrid Bolik	ITPEnergised Ltd
Workgroup Member	Simon Orr	National Grid Electricity Transmission
Workgroup Member	Sridhar Sahukari	Hornsea 1 Limited
Workgroup Member	Tusitha Abeyasekera	Mitsubishi Heavy Industries (Vestas Offshore)
Workgroup Member	Vicenç Casadevall	GE Renewable Energy
Workgroup Member	Ben Gomersall	National Grid Electricity Transmission
Workgroup Member	Shurooque Baloch	National Grid Electricity Transmission

14. A (*) Workgroup must comprise at least 5 members (who may be Panel Members). The roles identified with an asterisk (*) in the table above contribute toward the required quorum, determined in accordance with paragraph 15 below.
15. The Grid Code Review Panel must agree a number that will be quorum for each Workgroup meeting. The agreed figure for this modification is that at least 5 Workgroup members must participate in a meeting for quorum to be met.
16. A vote is to take place by all eligible Workgroup members on the Modification Proposal and each WAGCM proposal and Workgroup Consultation Alternative Request based on their assessment of the Proposal(s) against the Grid Code objectives when compared against the current Grid Code baseline.
 - Do you support the Original or any of the alternative Proposals?
 - Which of the Proposals best facilitates the Grid Code Objectives?

The Workgroup chairman shall not have a vote, casting or otherwise. The results from the vote and the reasons for such voting shall be recorded in the Workgroup report in as much detail as practicable.

17. It is expected that Workgroup members would only abstain from voting under limited circumstances, for example where a member feels that a proposal has been insufficiently developed. Where a member has such concerns, they should raise these with the Workgroup chairman at the earliest possible opportunity and certainly before the Workgroup vote takes place. Where abstention occurs, the reason should be recorded in the Workgroup report.
18. Workgroup members or their appointed alternate are required to attend a minimum of 50% of the Workgroup meetings to be eligible to participate in the Workgroup vote.
19. The Technical Secretary shall keep an Attendance Record for the Workgroup meetings and circulate the Attendance Record with the Action Notes after each meeting. This will be attached to the final Workgroup report.
20. The Workgroup membership can be amended from time to time by the Grid Code Review Panel and the Chairman of the Workgroup.