

Grid Code Alternative and Workgroup Vote

GC0168: Submission of Electro Magnetic Transient (EMT) Models

Please note: To participate in any votes, Workgroup members need to have attended at least 50% of meetings.

Stage 1 – Alternative Vote

If Workgroup Alternative Requests have been made, vote on whether they should become Workgroup Alternative Grid Code Modifications (WAGCMs).

Stage 2 – Workgroup Vote

2a) Assess the Original and WAGCMs (if there are any) against the Grid Code objectives compared to the baseline (the current Grid Code).

2b) Vote on which of the options is best.

Terms used in this document

Term	Meaning
Baseline	The current Grid Code (if voting for the Baseline, you believe no modification should be made)
Original	The solution which was firstly proposed by the Proposer of the modification
WAGCM	Workgroup Alternative Grid Code Modification (an Alternative Solution which has been developed by the Workgroup)

For reference the Applicable Grid Code Objectives are:

- i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity

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- ii. *Facilitating effective competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity);*
- 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*

* See Electricity System Operator Licence

Workgroup Vote

Stage 1 – Alternative Vote

Vote on Workgroup Alternative Requests to become Workgroup Alternative Grid Code Modifications.

The Alternative vote is carried out to identify the level of Workgroup support there is for any potential alternative options that have been brought forward by either any member of the Workgroup OR an Industry Participant as part of the Workgroup Consultation.

Should the majority of the Workgroup OR the Chair believe that the potential alternative solution would better facilitate the Grid Code objectives than the Original proposal then the potential alternative will be fully developed by the Workgroup with legal text to form a Workgroup Alternative Grid Code modification (WAGCM) and submitted to the Panel and Authority alongside the Original solution for the Panel Recommendation vote and the Authority decision.

"Y" = Yes

"N" = No

"-" = Neutral (Stage 2 only)

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“Abstain”

Workgroup Member	Alternative 1 (Company, characteristic)
N/A	N/A

Stage 2a – Assessment against objectives

To assess the Original and WAGCMs against the Grid Code objectives compared to the baseline (the current Grid Code).

You will also be asked to provide a statement to be added to the Workgroup Report alongside your vote to assist the reader in understanding the rationale for your vote.

AGCO = Applicable Grid Code Objective

Workgroup Member	Better facilitates AGCO (i)	Better facilitates AGCO (ii)	Better facilitates AGCO (iii)	Better facilitates AGCO (iv)	Better facilitates AGCO (v)	Overall (Y/N)
	Julie Richmond, ScottishPower Renewables					
Original	N	N	Y	Y	-	N

Voting Statement:

SPR believe that EMT modelling of the GB network is required to ensure network security however this must not be made retrospective for every generator. SPR do not feel that the proposed technical requirements and timescales imposed on existing generators will result in better development, maintenance and operation of the network as the models likely produced will be generic and therefore provide no real benefit to NESO. The proposed implementation strategy on a region basis does not facilitate effective competition by giving advantage to those in a later regional area.

To support this proposal SPR would need to see further research into the capability of provision of EMT models for retrospective plant with detailed technical requirements along with a revised timeline for model collection. SPR welcomes the proposed cost recovery mechanism.

Workgroup Member	Better facilitates AGCO (i)	Better facilitates AGCO (ii)	Better facilitates AGCO (iii)	Better facilitates AGCO (iv)	Better facilitates AGCO (v)	Overall (Y/N)
	Frank Kasibante, NESO					
Original	Y	Y	Y	Y	-	Y

Voting Statement:

The Transmission System is becoming increasingly complex, not least as a result of the increasing use of power electronic converter technology much of which is used in modern generator and HVDC schemes. The additional complexity of these schemes necessitates the use of more advanced models so we can continue to operate a safe, secure, affordable and clean system.

We believe it is appropriate to set out a cost recovery mechanism for existing User's where an EMT model is requested, noted that some developers may incur quite significant costs arising from provision of a model, especially for those plants which are old and there was never any requirement for such a model when these plants were first connected to the system. The costs required to obtain a model, especially for plant designs which are no longer manufactured, are not insignificant and we believe it would be inappropriate for such costs to result in premature closure of these plants.

The change is offering more clarity for market participants.

Workgroup Member	Better facilitates AGCO (i)	Better facilitates AGCO (ii)	Better facilitates AGCO (iii)	Better facilitates AGCO (iv)	Better facilitates AGCO (v)	Overall (Y/N)
	Graeme Vincent, SP Energy Networks					
Original	Y	-	Y	-	-	Y

Voting Statement:

By ensuring that NESO (and by extension Transmission Owners where permissible) have access to the appropriate EMT models this will ensure that the GB transmission system continues to be developed in an efficient, coordinated and economic manner whilst ensuring that the level of security of the NETS is maintained. The provision of these models will also aid any future post-incident analysis enabling causes to be identified and cost effective solutions to be implemented.

As this modification is retrospective it is noted that, if approved, some Users may incur significant expenditure in order to meet their obligations it is therefore important that consideration of a cost recovery mechanism within CUSC is aligned with the implementation timescales of this modification.

Workgroup Member	Better facilitates AGCO (i)	Better facilitates AGCO (ii)	Better facilitates AGCO (iii)	Better facilitates AGCO (iv)	Better facilitates AGCO (v)	Overall (Y/N)
	Martin Aten, Uniper					
Original	Y	-	Y	Y	-	Y

Voting Statement:

This vote has been cast in the understanding that it is conditional to a cost recovery mechanism within CUSC being implemented. Whereas the need for EMT models is understood, it also has to be recognised that it will be expensive for Users to provide such EMT models retrospectively. Acceptance of compliance with this requirement shall be treated pragmatically and on a best endeavour basis, for example in the absence of a specific EMT model, it shall be acceptable that a generic EMT model is

provided with values tuned to match available data or test results of a generator as far as practically possible.

Workgroup Member	Better facilitates AGCO (i)	Better facilitates AGCO (ii)	Better facilitates AGCO (iii)	Better facilitates AGCO (iv)	Better facilitates AGCO (v)	Overall (Y/N)
	Ross Strachan, EDF Renewables					
Original	Y	-	Y	-	-	Y
<p>Voting Statement:</p> <p>EDF support the GC0168 modification but stress this is only on the basis that a cost recovery mechanism is introduced to allow User's to recover costs associated with developing EMT models for sites that were connected prior to 1st September 2022. A cost recovery mechanism was still to be raised as a CUSC modification at the time of voting on this GC0168 modification.</p> <p>As discussed in the workgroup, EDF expect that NESO will take a reasonable approach to requesting retrospective EMT models and not overload User's with retrospective EMT model requests where that User may have a large number of sites connected prior to 1st September 2022; and NESO will be flexible in administering timelines for the delivery of retrospect EMT model's, with reference to the legal text "unless otherwise agreed" in PC.A.9.2.2.1 and PC.A.9.2.2.2.</p>						

Workgroup Member	Better facilitates AGCO (i)	Better facilitates AGCO (ii)	Better facilitates AGCO (iii)	Better facilitates AGCO (iv)	Better facilitates AGCO (v)	Overall (Y/N)
	Srinivas Edla, SSEN Transmission					
Original	Y	-	Y	Y	Y	Y
Voting Statement:						

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1. I am voting Yes on the proposed solution (Original) to mandate the collection of EMT models from all relevant Users. This initiative is crucial for several reasons:
2. Enhanced Grid Code Compliance: Updating the clauses in the Grid Code Planning Code (PC.3.3, PC.A.5, PC.A.6, and PC.A.9) and the Grid Code General Conditions (Annex to the General Conditions referenced in GC.11) ensures that our regulations are up-to-date and comprehensive.
3. Development of Relevant Electrical Standard: The creation of a Relevant Electrical Standard will provide clear guidance on modelling requirements, including the collection of retrospective EMT models. This standardization is essential for consistency and reliability.
4. Improved Modelling and Analysis: By feeding these models into a wider GB model, we can conduct thorough investigations in the near term, as well as post-fault and planning studies. This comprehensive approach will significantly enhance our ability to analyze and respond to various scenarios.
5. Safe and Reliable Transmission System Operation: The ultimate goal of this proposal is to ensure the safe and reliable operation of the Transmission System. By having accurate and up-to-date models, we can better predict and mitigate potential issues, thereby enhancing the security of our grid.

In conclusion, this proposal is a forward-thinking and necessary step towards maintaining and improving the integrity and security of our Transmission System.

Of the 6 votes, 5 voters said the original solution was better than the Baseline.

Option	Number of voters that voted this option as better than the Baseline
Original	5
WAGCM	N/A

Stage 2b – Workgroup Vote

Which option is the best? (Baseline or Proposer solution (Original Proposal))

Workgroup Member	Company	Industry Sector	BEST Option?	Which objective(s) does the change better facilitate? (if baseline not applicable)
Julie Richmond	ScottishPower Renewables	Generator	Baseline	N/A
Frank Kasibante	NESO	System Operator	Original Proposal	i, ii, iii, iv
Graeme Vincent	SP Energy Networks	Network Owner / Operator	Original Proposal	i, ii
Martin Aten	Uniper	Generator	Original Proposal	i, iii, iv
Ross Strachan	EDF Renewables	Generator	Original Proposal	i, iii
Srinivas Edla	SSEN-Transmission	Transmission Owner	Original Proposal	i, iii, iv, v