

Grid Code Alternative and Workgroup Vote

GC0151: Grid Code Compliance with Fault Ride Through Requirements

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) If WAGCMs exist, vote on whether each WAGCM better facilitates the Applicable Grid Code Objectives better than the Original Modification Proposal.

2c) 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)

The Applicable Grid Code Objectives:

- a) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity
- b) 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);
- c) 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;
- d) 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

- e) To promote efficiency in the implementation and administration of the Grid Code arrangements

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 Chairman 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

Workgroup Member	A1 ESO	A2 Drax	A3 Original + Drax	A4 ESO + Drax
Alan Mason				
Alastair Frew	Y	Y	Y	Y
Ben Turner / Chloe Harradine (alternate)	Y			
Christopher Smith / Chanditha Udalgama (alternate)	Y			
Garth Graham	Y	Y	Y	Y
Isaac Gutierrez		Y	Y	Y
Lisa Waters / Graz Macdonald (alternate)				
Rob Wilson / Laetitia Wamala (alternate)	Y	Y	Y	Y
Ryan Tumilty				
Sean Gauton	Y	Y	Y	Y
Sigrid Bolik				
Simon Lord				
Sudharsana Govindaswami	Y			
Tim Ellingham / Lauren Jauss (alternate)		Y	Y	Y
WAGCM?	WAGCM1	WAGCM2	WAGCM3	WAGCM4

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 (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
Alan Mason – Oceanwinds						
Original	Y	Y	Y	Y	Y	Y
WAGCM 1	N	N	Y	N	N	N
WAGCM 2	Neutral	Neutral	Neutral	Neutral	Neutral	N
WAGCM 3	Neutral	Neutral	Neutral	Neutral	Neutral	N
WAGCM 4	Neutral	Neutral	Neutral	Neutral	Neutral	N

Voting Statement:

As an offshore wind farm developer Ocean Winds assets will consist of multiple power park units per BMU. Any response to a network event will be complex as each power park unit will respond individually. In order to assess whether the response is legitimate the logs for each power park unit will need to be downloaded and analysed. The original proposal provides for time to undertake this exercise. The WAGCM1 proposal from the ESO maintains the position stated in the letter which would result in the User being curtailed or switched off with no compensation available while the User tries to prove whether or not each PPU trip is legitimate. As such we cannot support this proposal.

As for WAGCM 2,3 and 4 Ocean Winds is neutral. All three proposals contain additional changes to the fault ride through requirements with the view of using GC0151 as an opportunity to tidy up some previous drafting deficiencies. In terms of fault ride through it is important include manufacturers in the consultation. Ultimately it will be the manufacturer who will have to meet any new or revised requirement. Without input from a wide range of manufacturers there is a risk that any new proposal or change will not be possible to implement

Manufacturers were not well represented on this group and the suggestion is that these changes be subject to another workgroup with wider industry participation.

Workgroup Member	Better facilitates AGCO (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
Alastair Frew – Drax Power Station						
Original	Yes	Yes	Yes	Neutral	Neutral	Yes

WAGCM 1	Yes	Yes	Yes	Neutral	Neutral	Yes
WAGCM 2	Yes	Yes	Yes	Neutral	Neutral	Yes
WAGCM 3	Yes	Yes	Yes	Neutral	Neutral	Yes
WAGCM 4	Yes	Yes	Yes	Neutral	Neutral	Yes

Voting Statement:

WAGCM3 is best as it incorporate the Original which improves system security by restricting large losses and drives a timescale for repair whilst not restricting generation off the system and creating generation shortages. This option also includes the text from WAGM2 which clarifies and fixing legal text issues with the existing FRT text.

Workgroup Member	Better facilitates AGCO (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
Ben Turner / Chloe Harradine - Orsted						
Original	N	N	N	Neutral	Neutral	N
WAGCM 1	N	N	Y	Neutral	Neutral	N
WAGCM 2	N	N	N	Neutral	Neutral	N
WAGCM 3	N	N	N	Neutral	Neutral	N
WAGCM 4	N	N	N	Neutral	Neutral	N

Voting Statement:

Original - our main concerns are the timescales prescribed and constraint limits proposed do not meet Grid Code objective C.

For WAGCM 1 – In our view it remains unclear at the point in time in which The Company can impose a restriction on the User – proposed changes to OC5.4.2.3 use the word “potential” which implies this could be subjective rather than fact/evidence based. This in our view does not meet Grid Code objective B.

With regards to WAGCM 2, 3 & 4 - The FRT clarification additions, we are unable to support these, and consider that this would have been more appropriate to have been considered separately from the urgent modification given the compressed which would have allowed for additional discussion and consideration. We have concerns that these changes could impact requirements on existing connections and with the compressed timescales have had insufficient time to review with internal teams and assess the implications fully.

Workgroup Member	Better facilitates AGCO (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
Christopher Smith / Chanditha Udalagama – National Grid Ventures						
Original	Yes	neutral	Yes	neutral	neutral	Yes
WAGCM 1	Yes	neutral	Yes	neutral	neutral	Yes
WAGCM 2	Yes	neutral	Yes	neutral	neutral	Yes

WAGCM 3	Yes	neutral	Yes	neutral	neutral	Yes
WAGCM 4	Yes	neutral	Yes	neutral	neutral	Yes
Voting Statement: No voting statement						

Workgroup Member	Better facilitates AGCO (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
Garth Graham – SSE						
Original	Yes	neutral	Yes	Yes	neutral	Yes
WAGCM 1	Yes	neutral	Yes	Yes	neutral	Yes
WAGCM 2	Yes	neutral	Yes	Yes	neutral	Yes
WAGCM 3	Yes	neutral	Yes	Yes	neutral	Yes
WAGCM 4	Yes	neutral	Yes	Yes	neutral	Yes

Voting Statement:

As set out in the Original proposal form there were a number of fundamental issues in respect of FRT compliance that the ESO's 7th May 2021 letter highlighted as well as the associated need to codify the solution to those issues.

Relying merely upon a letter; the on-line version of which – but not the version sent to Users – had changed (without notification to Users); was not a legally robust or regulatorily correct way to proceed: in simple terms, one side to a multi-party contract should not be able to unilaterally change the compliance regime for that contract and impose it; without consultation or engagement with the other parties; upon the other parties.

The Original and all the WACMs, in codifying a solution that addresses the defect, are all therefore better than the Baseline.

They all to a greater or lesser extent address the serious reservations and considerable concerns that stakeholders have; in the Workgroup discussions and in response to the Workgroup consultation; identified with the ESO's 7th May 2021 proposed approach.

Therefore, they are all better in terms of Applicable Objectives (a), (c) and (d) whilst being neutral in terms of Applicable Objective (b) and (e).

Workgroup Member	Better facilitates AGCO (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
Lisa Waters / Graz Macdonald – Waters Wye						
Original	Y	Y	Y	Y	neutral	Y
WAGCM 1	Y	neutral	neutral	Y	neutral	N
WAGCM 2	Y	Y	Y	Y	neutral	Y
WAGCM 3	Y	Y	Y	Y	neutral	Y
WAGCM 4	Y	neutral	neutral	Y	neutral	N

Voting Statement:

The amendments made in WACM2 are clearly improvements over the baseline, providing needed clarity to GC users.

In relation to the Original proposal versus WACM1, it is our view that the Original better facilitates the GC objectives (as noted above) as compared to the baseline. It provides legal clarity to users, and a pragmatic approach to the process for identifying FRT non-compliance. This enables an efficient and coordinated transmission system (AGCOa). It limits output pragmatically and cost effectively against actual non compliance rather than a suspected non-compliance (AGCOb). Further, the original takes a pragmatic view to size of user that the proposal applies to and the restrictions that are applied in the event of an actual issue, thereby effectively reducing the potential risk to security of supply (AGCOc). Against AGCOd, the original proposal will better enable the ESO to ensure it is able to operate a safer, more efficient system, as per license requirements.

We feel that WAGM1 is arguably better than the baseline for AGCOs a and d in that it provides some clarity compared to the open letter that is now de facto baseline. However, against AGCOs b and c, WACM1 codifies the impositions of costly operational restrictions without a proportionate level of evidence. Not only is this inefficient and costly to Users, but it is also potentially costly to consumers, where there is a potential security of supply issue in the case where Users are unable to operate (including potentially downstream affected Users in the case of a network asset).

FRT non-compliance is a serious issue for the system, emerging as more serious as the makeup of the system changes. The Original Proposal and WACM3 reduce the FRT non-compliance risks in a balanced, equitable, clear, pragmatic manner.

Workgroup Member	Better facilitates AGCO (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
Rob Wilson – National Grid, ESO						
Original	No	No	No	Neutral	No	N
WAGCM 1	Yes	Neutral	Yes	Neutral	Neutral	Y
WAGCM 2	Neutral	Neutral	Neutral	Yes	Neutral	Y
WAGCM 3	No	No	No	Neutral	No	N
WAGCM 4	Yes	Neutral	Yes	Neutral	Neutral	Y

Voting Statement:

The ESO has to be able to manage compliance of the Grid Code effectively, particularly where this impacts system security. The original, as it does not allow immediate or effective restriction of infeed to the system when a user is suspected of failing to ride through a fault, increases operational risk impacting consumers either by an increased risk of disruption to supply or increased operational costs incurred in mitigating this.

The ESO alternative allows greater breadth in the rare cases where a suspected FRT issue is not easily resolved but as a safeguard still requires agreement with users where a restriction will be applied.

The Drax amendments, which can be taken alone or in conjunction with other solutions, are also supported by the ESO although there has not been much time available to scrutinise this in detail.

As pointed out elsewhere, links to REMIT are not relevant as withholding availability where there is a sound technical reason to do so is allowed.

Finally, we would like to note the similar subject matter here to the Accelerated Loss of Mains Programme; this has invested considerable effort and money in reducing FRT risks from smaller embedded generators. It would be paradoxical to now reinstate this risk by putting a process in place that does not allow the ESO to pursue FRT compliance or adequately reduce risk from larger generators.

Workgroup Member	Better facilitates AGCO (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
Ryan Tumilty – SSEN (ESO nominating Party)						
Original	No	No	No	Neutral	No	N
WAGCM 1	Yes	Neutral	Yes	Neutral	Neutral	Y
WAGCM 2	Neutral	Neutral	Neutral	Yes	Neutral	Y
WAGCM 3	No	No	No	Neutral	No	N
WAGCM 4	Yes	Neutral	Yes	Neutral	Neutral	Y

Voting Statement:

The original proposal does not support the ESO in making an effective restriction to infeeds where a User is potentially not meeting FRT or increases operational risk. WAGCM1 (ESO) offers a more effective alternative whilst still ensuring that User agreement is built into the process. There has not been sufficient time to fully scrutinise in detail the other alternatives (WAGCM2 – 4) but 2 and 4 have some merit.

Workgroup Member	Better facilitates AGCO (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
Sean Gauton – Uniper						
Original	Y	Y	Neutral	Y	Y	Y
WAGCM 1	Y	Y	Y	Y	Y	Y
WAGCM 2	Y	Y	Y	Y	Y	Y
WAGCM 3	Y	Y	Neutral	Y	Y	Y
WAGCM 4	Y	Y	Y	Y	Y	Y

Voting Statement:

The original and all alternatives better facilitate the applicable Grid Code Objectives than the baseline. The NGESO letter of 7th May 2021 creates ambiguity which is reduced by the original and the alternatives. In the event of a suspected FRT non-compliance, the original modification proposed different treatment of parties based on MW output and prescribed output restrictions post event. These issues are better addressed in the alternative WAGCM 4, the combination of

the ESO and Drax proposals, which adds clarity to technical requirements, makes no distinction on the basis of MW output and properly asserts the principle that any output restrictions are agreed between the user and the ESO.

Workgroup Member	Better facilitates AGCO (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
	Simon Lord – Engie					
Original	Yes	Neutral	Yes	Neutral	Neutral	Yes
WAGCM 1	Yes	Neutral	Yes	Neutral	Neutral	Yes
WAGCM 2	No	Neutral	No	Neutral	Neutral	No
WAGCM 3	Neutral	Neutral	Neutral	Neutral	Neutral	No
WAGCM 4	Neutral	Neutral	Neutral	Neutral	Neutral	No

Voting Statement:

The workgroup has not completed its deliberations on the technical details of WACM 2-4, as such these alternatives may not be suitable for the code. Whilst we acknowledged some of the issues have merit a detailed review has not taken place by the working group as only limited time was available to review the proposal. As such WACM 2-4 do not improve the baseline. These should be raised as separate modification following the none-urgent process.

The key issues associated with WACM1, and the original are set out below and this guides our views as to the solution.

- 1) The interaction between OC5.4.2.2 and OC10. The process detailed in OC10.4.1.4 (below) is assumed to take precedence and this is how a user expects to respond to a notice so after 2 hours a user can submit a preliminary report that can be followed up as soon as is reasonably practical with a full written report (engineering). With agreement with ESO we can delay the primary report beyond the 2 hours.
- 2) Once a user is notified of a possible issue any restriction the ESO may wish to impose needs to be agreed with the User if there is no agreement then the user can continue to operate as normal and there is no obligation on the user to agree as it continues to investigate the issue prior to submit its written report.
- 3) The main differentiator between Original and WACM1 is the automation restrictions that apply during the investigation. We believe that any restrictions should not be automatic and should be agreed between the user and the ESO

As such we think that WACM1 is best.

Workgroup Member	Better facilitates AGCO (a)	Better facilitates AGCO (b)	Better facilitates AGCO (c)	Better facilitates AGCO (d)	Better facilitates AGCO (e)	Overall (Y/N)
	Tim Ellingham / Lauren Jauss – RWE Generation UK, RWE Renewables					
Original	neutral	Yes	Yes	Yes	Neutral	Y

WAGCM 1	Neutral	No	No	No	Neutral	N
WAGCM 2	Neutral	Yes	Yes	Yes	Neutral	Y
WAGCM 3	Yes	Yes	Yes	Yes	Neutral	Y
WAGCM 4	neutral	No	No	No	neutral	N

Voting Statement:

Any modification which enables unilateral power to remove a generator's access to market is not conducive to the aims of the grid code in terms of competition or system security.

Stage 2b – WAGCM Vote (If required)

Where one or more WAGCMs exist, does each WAGCM better facilitate the Applicable Grid Code Objectives than the Original Modification Proposal?

Workgroup Member	Company	WAGCM1 better than Original Yes/No	WAGCM2 better than Original Yes/No	WAGCM3 better than Original Yes/No	WAGCM4 better than Original Yes/No
Alan Mason/Sarah Graham	Oceanwinds	No	No	No	No
Alastair Frew	Drax Power Station	No	No	Yes	No
Ben Turner Chloe Harradine (alternate)	Orsted	Yes	No	No	No
Christopher Smith/ Chanditha Udalgama (alternate)	National Grid Ventures	No	No	No	No
Garth Graham	SSE	No	No	No	No
Lisa Waters Graz Macdonald (alternate)	Waters Wye	No	No	Yes	No
Rob Wilson / Laetitia Wamala	National Grid ESO	Yes	Yes	No	Yes
Ryan Tumilty	SSEN (ESO nominating Party)	Yes	Yes	No	Yes
Sean Gauton	Uniper	Yes	Yes	Yes	Yes
Simon Lord	Engie	Yes	No	No	No
Tim Ellingham / Lauren Jauss (alternate)	RWE Generation UK, RWE Renewables	No	No	Yes	No

Stage 2c – Workgroup Vote

Which option is the best? (Baseline, Proposer solution (Original Proposal), WAGCM1, WAGCM2, WAGCM3, WAGCM4)

Workgroup Member	Company	BEST Option?	Which objective(s) does the change better facilitate? (if baseline not applicable)
Alan Mason	Oceanwinds	Original	(a), (b), (c), (d) and (e)
Alastair Frew	Drax Power Station	WAGCM3	(a),(b),(c)
Ben Turner Chloe Harradine (alternate)	Orsted	Baseline	
Christopher Smith Chanditha Udalagama (alternate)	National Grid Ventures	Original	(a) And (c)
Garth Graham	SSE	Original	(a), (c) and (d)
Lisa Waters Graz Macdonald (alternate)	Waters Wye	WAGCM3	(a), (b), (c) and (d)
Rob Wilson / Laetitia Wamala (alternate)	National Grid ESO	WAGCM1	(c)
Ryan Tumilty	SSEN (ESO nominating Party)	WAGCM1	(c)
Sean Gauton	Uniper	WAGCM4	AGCO a,b,c,d & e
Simon Lord	Engie	WAGCM1	(a), (c)
Tim Ellingham / Lauren Jauss (alternate)	RWE Generation UK, RWE Renewables	WAGCM3 (Drax+original)	(a), (b), (c) and (d)

Of the 11 votes, how many voters said this option was best.

Option	Number of voters that voted this option is best
Original	3
WAGCM1	3
WAGCM2	0
WAGCM3	3
WAGCM4	1
Baseline	1