WAGCM9 - Grid Code Alternative Form

GC0141:
Preferred permutation across all GC0141 "Sub-Modification" workstreams

Overview:

The Alternative has been raised to cover the proposers chosen permutation in relation to the elements that comprise the modification.

Details of the chosen permutation as attached and summarised below:

Solution	Independent Engineer	Sharing for SSTI / SSCI	RMS & EMT Models	Fault Ride Through Definition & Retrospective Requirements	Compliance Repeat Plan	Enhanced FRT Studies	Torsional Data
WAGCM9	Min threshold 100MW before IE required	ESO/TO share models as required	Specification of RMS & EMT model (fully encrypted)	Adds a time duration & retrospective requirements	Every 5 years Users submit compliance statement and DRC Schedules	Additional studies for complex connections agreed at start of process	All Users provide torsional data (retrospective)

No change from Baseline
Original Proposal
Alternative Option

Requirement for an Independent Engineer – Alternative Option 1a – A minimum threshold for Users with a Registered Capacity of 100MW before an Independent Engineer is required.

Sharing of SSTI / SSCI Models – Original Proposal

Specification for RMS & EMT Models – Original Proposal

Fault Ride Through Definition and Retrospective Requirements – Original Proposal

Compliance Repeat Plan – Original Proposal

Enhanced Fault Ride Through Studies – Original Proposal

Provision of Torsional Data for Older Plant – Original Proposal

Proposer: Michael Smailes – Offshore Renewable Energy Catapult

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What is the proposed alternative solution?

The alternative covers the proposers chosen elements of the modification, with some elements differing from the Original Proposal.

What is the difference between this and the Original Proposal?

Requirement for an Independent Engineer – Alternative Option 1a – A minimum threshold for Users with a Registered Capacity of 100MW before an Independent Engineer is required.
It is believed that the Current Baseline is insufficient to ensure all areas of non-classical device interaction and implementation are adhered to. An Independent Engineer can provide User and Company assistance in reviewing information for a given project expanding expertise and minimising risk of elements being missed. That said it is believed that an Independent Engineer would provide an unnecessary additional administration for small projects leading to the suggestion of a minimum threshold of 100MW.

Sharing of SSTI / SSCI Models – Original Proposal
The sharing of SSRI and SSCI models is necessary to allow for required analysis of SSTI and SSCI as well as other interactions. While other options would permit this, they are not as efficient as the Original Proposal potentially leading to project delays.

Specification for RMS & EMT Models – Original Proposal
It is believed that the original proposal presents a positive development to create a shared understanding across GB industry for the specifications of EMT and RMS models.

Fault Ride Through Definition and Retrospective Requirements – Original Proposal
It is believed that the Original Proposal serves interests best.

Compliance Repeat Plan – Original Proposal
It is believed that the Original Proposal is necessary to ensure incremental changes to the User system do not have an unintended adverse cumulative effect on the original compliance.

Enhanced Fault Ride Through Studies – Original Proposal

Provision of Torsional Data for Older Plant – Original Proposal

What is the impact of this change?

Proposer's Assessment against Grid Code Objectives	
Relevant Objective	**Identified impact**
(a) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity	**Positive** Improved modelling, checking and review process creates a

	positive impact on the coordination and efficiency of the transmission system
(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);	**Neutral** Does not hinder competition or access to the market
(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;	**Positive** Improved modelling, checking and review process without negatively impacting access
(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	**Positive** Enforcing regular reviews to ensure cumulative effects do not have unintended consequence, proper review and improved modelling to check compliance
(e) To promote efficiency in the implementation and administration of the Grid Code arrangements	**Positive** Models readily available reducing delays

When will this change take place?

Implementation date:

In line with GC0141

Implementation approach:

Acronyms, key terms and reference material

Acronym / key term	Meaning
BCA	Bilateral Connection Agreement - between a User and ESO
ECC	European Connection Conditions – part of Grid Code
PC	Planning Code – part of Grid Code
TO	Transmission Owner
NG ESO	National Grid Electricity System Operator

Reference material:

None.