

## WAGCM12 - 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
WAGCM12	Min threshold 100MW (inc of Users at LON status or material change) before IE required	User employs a Consultant who sees network data & carries out the studies	Specification of RMS & EMT model (fully encrypted)	Adds a time duration & retrospective requirements	Every 5 years Users submit compliance statement and DRC Schedules	No requirement to agree additional studies for complex connections at start of process	User provides data when asked prior to a completion date of 1st April 2015
	No change from Baseline						
	Original Proposal						
	Alternative Option						

**Requirement for an Independent Engineer** – Alternative Option 1c – A minimum threshold for Users with a Registered Capacity of 100MW (inclusive of Users at Limited Operational Notification (LON) status or the User has notified material change which impact on Grid Code Compliance) before an Independent Engineer is required

**Sharing of SSTI / SSCI Models** – Alternative Option 2b (User should employ a consultant to carry out studies on behalf of a User (without User getting the model data) to allow User to fulfil obligations to demonstrate compliance with (EEC.6.3.17). Terms of arrangements agreed in Bilateral Connection Agreement.)

**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** – Current Baseline

**Provision of Torsional Data for Older Plant** – Alternative Option 7a (requirement for User to only provide Torsional Data for Generating Units with a completion date before 01 April 2015 on request)

**Proposer:** Sigrid Bolik – Siemens Plc

## Contents

- What is the proposed alternative solution?
- What is the impact of this change?
- When will the change take place?
- Acronyms, key terms and reference material

## 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 1c – A minimum threshold for Users with a Registered Capacity of 100MW (inclusive of Users at Limited Operational Notification (LON) status or the User has notified material change which impact on Grid Code Compliance) before an Independent Engineer is required

This is to ensure an independent engineer, accepted by both parties, is reviewing changes; including evaluating reason for LON or the impact of any material change impacting Grid Code Compliance. This will ensure initial as well as consistent quality of submission. That said, it is considered that only projects above 100MW will have a noticeable impact and as such, smaller project should be exempt.

**Sharing of SSTI / SSCI Models** – Alternative Option 2b (User should employ a consultant to carry out studies on behalf of a User (without User getting the model data) to allow User to fulfil obligations to demonstrate compliance with (EEC.6.3.17). Terms of arrangements agreed in Bilateral Connection Agreement.)

An independent expert consultant performing the studies, engaged by the User, will likely have the opportunity to impact tuning or change of settings, removing potential resonances issues. Also, it is hoped that this would be acceptable to be independent. Therewith it is believed a consultant to be more efficient placed to performing the studies.

### **Specification for RMS & EMT Models** – Original Proposal

The Original proposal has been worked on in collaboration between ESO and interested/affected members of the working group in is therewith considered to give a good future proof legal text option. Some areas such as protection representation in the models require further scrutiny and discussion. As it likely that as knowledge about interaction and technologies improve, modelling and elements of models need to be updated and changed. As such the proposed text refers to other documents rather than codifying specific solutions.

### **Fault Ride Through Definition and Retrospective Requirements** – Original Proposal

Adds a time duration and retrospective requirements and considers to improves clarity about the applicable changes.

### **Compliance Repeat Plan** – Original Proposal

Every 5 years Users submit a compliance statement and DRC Schedules. It is believed that a firm action will allow for a review of the project. It is likely that particularly during the first five years of operation, tuning or changes may have taken place. Also, maintenance contracts/ownership may have changed, and it is required to make sure compliance,

exemptions and agreements are properly reviewed in regard to Grid Code compliance and it not just for completeness and general operation. This will support higher ongoing quality in operation in an ever-changing connection environment.

### **Enhanced Fault Ride Through Studies – Current Baseline**

The main features include 30-minute stability upon FRT connection. As power systems become more and more complex and flexible, it is likely that 30 minutes after a FRT event all boundary conditions have changed, and a generic compliance benchmarked against initial conditions does not seem to give any additional value. Also, it will increase the burden to Users to show compliance. Due to the complexity in regard to a large transient event within a power system, unrelated to the particular user, it is considered that such a requirement will burden users unfairly.

**Provision of Torsional Data for Older Plant – Alternative Option 7a** (requirement for User to only provide Torsional Data for Generating Units with a completion date before 01 April 2015 on request)

As models improve, older plants and their representation may likely cause interaction to become a hindrance for investigation and improvements in security. However, not all plant may be connected in a place of relevance. To minimise burden, it is considered that requirements shall be only applied upon request.

## **What is the impact of this change?**

<b>Proposer's Assessment against Grid Code Objectives</b>	
<b>Relevant Objective</b>	<b>Identified impact</b>
(a) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity	Positive
(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);	Positive
(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
(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	Positive

decisions of the European Commission and/or the Agency; and	
(e) To promote efficiency in the implementation and administration of the Grid Code arrangements	Positive

### 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.