

WAGCM5 - Grid Code Alternative Form

GC0141:

Torsional Data for existing plant supplied by request (PC.A.5.3.2)

Overview: Original proposal suggests that in addition to new connections all existing synchronous generators should supply torsional shaft data to NG ESO to facilitate speedy sharing of data with developers of new connections to allow torsional interaction studies (EEC.6.3.17.1). This Alternative suggest that existing power stations provide the information when requested by NG ESO.

Proposer: Mark Horley, NG ESO

Contents

- What is the proposed alternative solution?
 - Difference between this and the Original Proposal
- 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?

This Alternative suggests that existing power stations provide the torsional shaft information only when requested by NG ESO.

What is the difference between this and the Original Proposal?

This Alternative makes provision of the information by requested rather than a requirement on all existing synchronous generators to fulfil. Torsional information may not be needed from all existing plant and can be difficult/expensive to obtain if the information was not recorded at time of original commissioning.

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: Avoids cost on existing generators unless there is a proven requirement for data to be supplied
(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);	Negative: developers connecting new plant where the studies for ECC.6.3.17.1 are required will have a delay while data is sourced from existing power stations.
(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;	None: Information will still be required where necessary
(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	None: Information will still be required where necessary. Existing users will need to provide information on request. New Users may be subject to a delay in getting information
(e) To promote efficiency in the implementation and administration of the Grid Code arrangements	None

When will this change take place?

Implementation date:

September 2021

Implementation approach:

Does not require any changes to systems or processes

Acronyms, key terms and reference material

Acronym / key term	Meaning
Torsional shaft data	Information on rotational masses and shaft stiffness for a generating unit necessary in studies of torsional interactions required by ECC.6.3.17
ECC	European Connection Conditions – part of Grid Code
PC	Planning Code – part of Grid Code

Reference material:

Annex 1 - Legal Text

Changes to existing Grid Code drafting underlined

PC.A.5.3.2

(g) Generating Unit Mechanical Parameters

It is occasionally necessary for **The Company** to assess the interaction between the **Total System** and the mechanical components of **Generating Units**. For **Generating Units** (including **Synchronous Generating Units** within a **Synchronous Power Generating Module**);

with a **Completion Date** on or after 01 April 2015, or:

with a **Completion Date** before 01 April 2015 when requested by **The Company** in accordance with good industry practice and without undue delay.

the following data items should be supplied:

The number of turbine generator masses.

Diagram showing the Inertia and parameters for each turbine generator mass (kgm^2) and Stiffness constants and parameters between each turbine generator mass for the complete drive train (Nm/rad).

Number of poles.

Relative power applied to different parts of the turbine (%).

Torsional mode frequencies (Hz).

Modal damping decrement factors for the different mechanical modes.