

## Response ID ANON-8U19-V5YU-G

Submitted to **ENTSO-E Connection Network Codes\_revised Implementation Guidance Documents\_November 2020**

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### Introduction

#### 1 What is your name?

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#### 3 What is your organisation?

**Organisation:**

EUGINE – the European Engine Power Plants Association

#### 4 I want my answer to remain anonymous. If you tick this box, we will publish your comments but we will not publish your name and organisation.

**I want my answer to remain anonymous:**

No

#### 5 I want my answer to remain confidential - If you tick this box, we will not publish your answer to this consultation

**I want my answer to remain confidential:**

No

#### 6 I agree to ENTSO-E's Consultation Hub privacy policy

**I agree to ENTSO-E's Consultation Hub privacy policy (Required):**

Yes

### IGD on Autonomous connection/reconnection and admissible rate of change of active power

#### 1 Do you consider this IGD helpful?

#### 2 Does the content of the IGD cover the technical issues of this topic appropriately?

#### 3 Comments on the technical (or other) information within this IGD

Technical or other comments :

### IGD on Demand Response\_System Frequency Control

#### 1 Do you consider this IGD helpful?

#### 2 Does the content of the IGD cover the technical issues of this topic appropriately?

#### 3 Comments on the technical (or other) information within this IGD

Technical or other comments :

### IGD on Parameters of Non-exhaustive Requirements

#### 1 Do you consider this IGD helpful?

#### 2 Does the content of the IGD cover the technical issues of this topic appropriately?

#### 3 Comments on the technical (or other) information within this IGD

Technical or other comments :

## **IGD on Maximum Admissible Active Power Reduction at Low Frequencies**

**1 Do you consider this IGD helpful?**

**2 Does the content of the IGD cover the technical issues of this topic appropriately?**

**3 Comments on the technical (or other) information within this IGD**

Technical or other comments :

## **IGD on Frequency Ranges**

**1 Do you consider this IGD helpful?**

**2 Does the content of the IGD cover the technical issues of this topic appropriately?**

**3 Comments on the technical (or other) information within this IGD**

Technical or other comments :

## **IGD on Compliance Verification - Compliance Testing and Use of Equipment Certificates**

**1 Do you consider this IGD helpful?**

yes

**2 Does the content of the IGD cover the technical issues of this topic appropriately?**

no

**3 Comments on the technical (or other) information within this IGD**

yes

**Technical or other comments :**

General comment

A transition period is not defined. Each country needs time to implement the IGD requirements. The manufactures/operators, in turn, need at least one year after national requirements are published to adapt to them.

We suggest that each country should allow at least a one-year transition period after a new grid code is published or updated. Manufactures/operators are permitted to fulfil new guidelines earlier, and should not be obliged to fulfil older guidelines as soon as new ones are published.

Comment 1: Module and Unit definition

According to several codes, when dealing with SPGMs the definition of Module and Unit are the same. The UK G99 for instance gives clear examples as to HOW each technology should be treated.

In addition, in the EN 50549-2:2019 you can find the following definition and example for generating MODULE under section 3.2.1:

"3.2.1 Generating module:

"Either a generating unit of synchronous generating technology or the sum of all generating units of non-synchronous generating technology connected to a common point of connection including all elements needed to feed electric power to the distribution grid."

Based on those examples, SPGMs and PPMs should be treated differently when it comes to "unit" and "module".

Comment 2: Regarding the "definitions" section in IGD

We believe the schematics found in the definitions section are incomplete and could be modified to help understand the different types of certificates. The different types of certificates could for example be more clearly related to the UML diagram (further details have been provided by email).

Additionally, we see necessary to include examples of what "component certificates" are in the schematics (Actual examples to help understand what is considered a component, e.g. AVR, speed controller, converter, etc).

The concept "Unit certificate" should better explain what "an aggregation of components" means. For example, a "unit" could be a single gas engine generation set (motor + controller + Generator + AVR + Auxiliaries). A clear example should be given here.

We also believe the "module certificate" concept is incorrect (based on the "module" and "unit" definitions discussed in the previous point), as in some countries

(like the UK), a module is NOT a generation facility when it is referred to synchronous units. In those cases, "module" and "unit" would be the same. This should be reflected in the definition.

Comment 3: regarding responsibility of testing procedure

The document states the following:

"Methodology, how to check the capability, have to be specify in certification program by the certification body".

We believe that the methodologies and pass criteria should be either defined by the grid operator in question or based on existing standards (such as the upcoming IEC 50549-10). The certification body should only be responsible of carrying out the checks based on pre-existing documentation created for the explicit purpose of verifying that a certain technology can fulfil the requirements. This will avoid having multiple methodologies to test the same requirements, while also avoiding the use of PPM specific methodologies for testing SPGMs and vice versa.

Comment 4: introduction of the FAMILY concept for SPGMs

Similar to what is found in the German TR 3 or Spanish Technical Supervision of Conformity Norm, when SPGMs share similar characteristics (such as the same prime mover technology, same unit controller, same AVR, same type of generator, etc), the verification procedure applied in a particular unit should be VALID for OTHER similar units within a pre-specified power range (to be defined by each member state) as long as the "similarity" conditions are met. This is of particular interest to manufacturers that have HUNDREDS of combinations of different sized prime movers (engines in our case) and generators.

We would propose the introduction of a concept for SPGMs that can be standardized in all EU states and could be worded as follows:

"Generating modules are considered in the same family as long as they share the following characteristics:

- "• Same unit controller model
- "• Same or greater Unit controller software version (with no changes on relevant functions for grid parallel operation and requirement fulfilment)
- "• Same AVR model and same or greater software version (with no changes on relevant functions for grid parallel operation and requirement fulfilment)
- "• Same generator alternator technology (synchronous generator alternator), based on definition according to IEC 63400.

"The brand (manufacturer), construction (salient pole or round rotor) associated to the synchronous generator is not relevant for this definition because the active and reactive power response of the unit solely depend on the unit's controller and AVR. The excitation system shall be the same for all units considered within the family (either static, rotating, permanent magnets, etc as defined in IEEE 421)"

A similar concept could be created for PPMs.

Comment 5: FRT simulation validated model

A validated model certified by an authorized body with testing performed by an independent testing laboratory or institute based on an FRT profile defined within the NC RfG should be accepted in all EU states. This would imply including at EU level a procedure to validate FRT testing (when performed); the proposal made in Germany in the TR4 (tolerance criteria and methodology) and IEC 61400-27 (methodology) could be applied at EU level (this has already been adopted in Spain and Italy).

The advantage of this will be that once a unit or module has received a certification for the model in a EU state, it could be used in others without incurring in additional costs and work for each manufacturer while still guaranteeing the accuracy and validity of the models.

Comment 6: Modifications on Tables regarding mandatory testing

If a CERTIFIED and properly validated model for Type B and C units is available (as proposed in the previous point) for the particular generation set, testing for Types B and C should NOT be mandatory. The testing should only be used for model validation and certification. The FRT capability of the units can be better assessed via simulations with the actual characteristics defined by local site conditions.

The proposal is to modify the "Mandatory Requirements for Equipment Certification" table on page 16, as follows:

1) Original Text: Island Operation

Comment: the test definition is unclear yet, there are no reference documents. The test definition should be verified and confirmed as a suitable solution before becoming a mandatory requirement.

Modification suggestion: remove mandatory tests (C, D).

2) Original Text: Post fault active power recovery

Comment: the test is part of FRT tests. Since FRT is not mandatory, the post fault active power recovery should be simulated by validated model.

Modification suggestion: remove mandatory tests (B,C).

3) Original Text: Fast fault current injection

Comment: the test is part of FRT tests. Since FRT is not mandatory, the Fast fault current injection should be simulated by validated model.

Modification suggestion: remove mandatory tests (B,C). Add as a mandatory simulation (C, D)