

ACER draft amendments to the Network Code on Requirements for Generators

Fields marked with * are mandatory.

Introduction

This consultation aims to present ACER's draft amendments to the Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a **Network Code on Requirements for Grid Connection of Generators ('NC RfG')**.

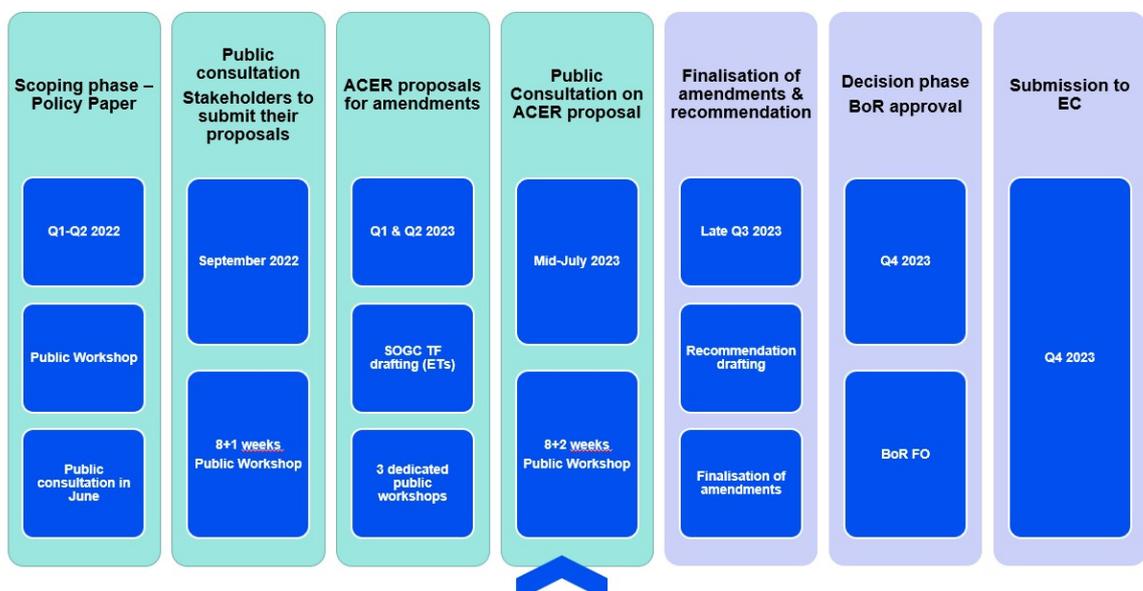
For draft amendments concerning Network Code on Demand Connection ('NC DC'), please go to the respective form: [NC DC](#).

Responses to this consultation should be submitted by 25 September 2023.

Background

Important developments in the policies of decarbonisation of the European Union (EU) energy and transport sectors have taken place since the inception of the development of the first European Grid Connection Network Codes (GC NCs) in 2012.

In the framework of the Grid Connection European Stakeholder Committee (GC ESC), the European Commission proposed for ACER to initiate the process towards the amendment of the existing GC NCs in September 2022. The amendment process, as presented to the GC ESC is outlined in the Figure below:



Following the scoping phase, ACER published the Policy Paper on the revision of the network code on requirements for grid connection of generators and the network code on demand connection in September 2022. The Policy Paper aimed to transparently indicate to stakeholders the key policy areas in which amendments were to be expected.

[Access the ACER Policy Paper on the revision of the NC RfG and NC DC.](#)

As a next step, ACER launched the Public Consultation to gather stakeholders' views and concrete amendment proposals regarding the GC NCs. The stakeholders could submit their inputs by 21 November 2022.

[Access the results of the Public Consultation on the amendments to the grid connection network codes.](#)

Additionally, in the preparation of the draft amendment proposals, ACER organised three dedicated public workshops, namely:

- [electromobility, power-to-gas demand units and heat-pumps](#) (held on 17 April 2023);
- [rate of change of frequency and grid forming capabilities](#) (held on 10 May 2023); and
- [electricity storage](#) (held on 11 May 2023).

After the evaluation of stakeholders' inputs, ACER has formulated its own proposal for the amendments of the GC NCs which is subject to this public consultation.

Stakeholder's details

ACER is highly committed in processing personal data in a lawful way.

Find out more how we process your data: <https://www.acer.europa.eu/the-agency/about-acer/data-protection>

* Name of the stakeholder:

CENELEC

* Contact person:

[REDACTED]

* Contact person's email address:

[REDACTED]

* Country of the stakeholder's headquarters or main country of operation:

Belgium

* Type of the stakeholder:

- Generator (including association)
- Consumer (including association)
- Transmission system operator (including association)
- Distribution system operator (including association)
- Manufacturers (including association)
- Academia/research institution
- Regulatory authority
- Other (please, elaborate)

Please, elaborate on your answer above, if necessary:

CENELEC is a European standardisation body including many stakeholders of generator, consumer, TSO, DSO Academia

* Do you consent to the publication of the stakeholder's name?

- Yes
- No

* Do you consent to the publication of provided answers?

- Yes
- No (please, note that your answer, without your name and organization, may be shared with the EU institutions and national authorities)

Instructions

Stakeholders are invited to submit their comments to the NC RfG articles amended by ACER in three mandatory steps:

1. by downloading the ACER draft amendments in the Word file provided below. The file can also be accessed on the right panel of the consultation form under the Background Documents;
2. by commenting on the ACER's draft amendments through this online consultation form and adding their alternative text proposals to the table, if any; and
3. by uploading the alterative amendment proposals to the **entire NC RfG** using the Track Changes mode in the ACER draft amendments file downloaded from **Step 1**.

Where the stakeholder does not have any comments regarding the amendments, the relevant cells in the consultation form can be left blank.

The mandatory steps for submitting the comments are listed below.

Step 1

Please see ACER's draft amendments in the Word file provided below. The file can also be accessed on the right panel of the consultation form under the Background Documents.

[**Download ACER draft amendments to the NC RfG here**](#)

Step 2

Kindly note that this consultation form follows the structure of the NC RfG amended legal text provided by ACER in Step 1.

The paragraph numbering in the form reflects paragraph numbers in the amended legal text. Nevertheless, stakeholders can comment on the deleted paragraphs/articles/titles, which are marked as [deleted]. New articles and titles are marked as [new].

Please use this form to comment on ACER draft amendments and/or to provide an alternative text proposal. The instructions are the following:

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below.

 Includes new articles

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|------------------|--------------------------------------|---|
| Article 1 | 1 | 2 |
| Article 3 | | |
| Article 4 | | |
| Article 4a [new] | | |
| Article 5 | | |
| Article 6 | | |
| Article 7 | | |
| Article 8 | | |
| Article 9 | | |
| Article 10 | | |
| Article 11 | | |
| Article 12 | | |

Please write your amendment proposals, if any, in the table below.

| | Text amendment proposal (if applicable) |
|-------------|---|
| New article | 3 |

Please upload figures or tables if necessary

 The maximum file size is 1 MB

Select file to upload **4**

1. Leave comments on the ACER draft amendment proposals.
2. Propose (if any) alternative wording of the relevant provision, as you provided in the Word file.
3. Provide (if any) your proposals for adding new provisions to the relevant section of the NC RfG, as you provided in the Word file.
4. Upload figures or tables if necessary; text inputs should be provided directly in the consultation form.

Step 3

Where the stakeholder would like to propose an alternative amendment to the **entire NC RfG**, please upload the Word file (**downloaded from Step 1**) containing all your alternative amendment proposals in the Track Changes mode to the next **FILE UPLOAD** section and rename it with your stakeholder's name ("ACER_draft_RfG_stakeholder_name"). You can also upload your justification documents, where applicable.

In case the file size exceeds the 1MB limit, which is a consultation tool limit, kindly send the document to the functional mailbox shown on the right panel of the consultation form. Please rename the file with your stakeholder's name as indicated above and send it with the subject "ACER draft RfG legal text [stakeholder name]". Note that only submissions sent within the consultation deadline will be considered.

To facilitate the process, please, make sure that the **alternative text proposals provided in this consultation form are consistent**, to the extent possible, **with those in the Word file** you are uploading, taking into account the character limitations of each cell (max 5000 characters).

FILE UPLOAD

Please upload your file here

The maximum file size is 1 MB

Only files of the type pdf,doc,docx,odt,txt,rtf are allowed

Kindly note that in case the file size exceeds 1MB, the file can be sent to the functional mailbox shown on the right panel of the consultation form under Contact. Please ensure that the file name and email subject are consistent with the instructions in Step 3.

Please also upload any other document (i.e. **justifications**) below, if relevant.

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Due to the significant length of this survey:

- you have the possibility to edit your answer after submission. When clicking on "Submit" button, you will be given a Contribution ID which you can then use to access your answers and edit them, if necessary.
- we kindly suggest that you download the entire survey as .pdf (link on the right), prepare your answers and then upload them at once in the EU Survey Tool, to avoid a session timeout on submission.

The maximum length of each cell is 5000 characters. This is the maximum technical limit set by the EUsurvey tool, which cannot be increased.

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

Numbers in the first column correspond to the recitals of the amended version of NC RfG Whereas section, including new recitals

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|------|--|--|
| (1) | | |
| (2) | | |
| (3) | A major need for Harmonisation is the EU-wide trade of components for power generating modules. This aspect is missing in the list | Harmonised rules for grid connection for power-generating modules should be set out in order to provide a clear legal framework for grid connections, facilitate Union-wide trade in electricity, ensure system security, facilitate the integration of renewable electricity sources, increase competition facilitate Union-wide trade of components for power generating modules, and allow more efficient use of the network and resources, for the benefit of consumers. |
| (s1) | | |
| (s2) | | |
| (4) | | |
| (5) | | |
| (6) | | |
| (7) | | |
| (8) | | |
| | CENELEC agrees, that in many cases, generating units of different underlying technology should be considered independently when determining their significance and requirements as individual PPMs. However there are situations for example in case of a PV plant operated with integrated energy storage | ... Non-synchronously connected power-generating units of the same underlying technology, or of |

| | | |
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| (9) | <p>for the purpose of load optimisation, this is not the case. In this case it is only reasonable to consider the plant combination of PV and storage as one PPM.</p> <p>The definition of PPM should allow the flexibility to consider generating units of different underlying technology connected to the same point of connection either as independent PPMs or as one PPM. This flexibility must be given to the facility owner to define</p> | <p>different underlying technology where they are collected together to form an economic unit and where they have a single connection point should be assessed on their aggregated capacity.</p> <p>...</p> |
| (10) | | |
| (**) | | |
| (11) | | |
| (12) | | |
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| (31) | | |
| (32) | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|--------------------|--|
| <p>New recital</p> | <p>reasoning:</p> <p>Recital (50) of: 26.4.2023 PROVISIONAL AGREEMENT RESULTING FROM INTERINSTITUTIONAL NEGOTIATIONS Proposal for a regulation of the European Parliament and of the Council on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU of the European Parliament and of the Council (COM(2021)0559 – C9-0331 /2021 – 2021/0223(COD))</p> <p>Is also relevant for RfG and should be included in regard to harmonised vehicle charging. The same approach should also be adopted for the definition of grid connection requirements implementing RfG in the Memberstates</p> <p>Proposal:</p> <p>Add recital: Technical specifications for interoperability of recharging and refuelling points should be specified in European or international standards. The European standardisation organisations ('ESOs') should adopt European standards in accordance with Article 10 of Regulation (EU) No 1025/2012 of the European Parliament and of the Council. Those standards should be based on current international standards or ongoing international standardisation work, where applicable. To that end, European standardisation procedures for recharging and refuelling infrastructure should proceed quickly and in timely support of the timeline necessary for complying with the climate goals of the EU planning, tendering and building the infrastructure required under this Regulation. The standardisation processes for a European-wide harmonised charging infrastructure for stationary and dynamic charging should be accelerated or initiated.</p> <p>Add recital: Technical specifications for grid connection should be specified in European or international standards. The European standardisation</p> |

organisations ('ESOs') should adopt European standards in accordance with Article 10 of Regulation (EU) No 1025/2012 of the European Parliament and of the Council.

Those standards should be based on current international standards or ongoing international standardisation work, where applicable. To that end, European standardisation procedures for grid connection should proceed quickly and in timely support of the timeline necessary for complying with the climate goals of the EU planning, tendering and building the infrastructure required under this Regulation. The standardisation processes for a European-wide harmonised grid connection requirements charging infrastructure for stationary and dynamic charging should be accelerated or initiated.

Definitions (Article 2)

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

Includes new definitions

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|--------------|--|---|
| Article 2(1) | | |
| Article 2(2) | | |
| Article 2(3) | | |
| Article 2(4) | | |
| Article 2(5) | | |
| Article 2(6) | | |
| Article 2(7) | <p>Why is the owner and not the operator addressed in definition (7)? TSO is also Transmission System Operator and not Transmission System Owner.</p> <p>The legal quality of ownership only tells us about the investment situation, but not about the responsibility for operating (including planning, maintenance, or to sum up to have the technical know how to do this). In many cases the operator and the owner are the same legal person, but in some cases the owner only provides the investment sum and assigns an operator to have the responsibility for the operation and other technical duties. For instance, 50Hertz, a German TSO is (partly) owned by Global Infrastructure Fund, which seek an opportunity to park their money at a reasonable interest rate, but have no deep technical knowledge about operating a transmission system. Also pension funds may have an interest in investing in large, long-term</p> | <p>power-generating facility operator' means a natural or legal entity operating a power-generating facility;</p> |

| | | |
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| | <p>energy projects, but do not wish to be involved into the operating of the asset.</p> <p>The responsible legal entity should be the "operator" in the NC documents. It may be added that the operator is assigned by the owner for this task, if operator and owner are different legal entities. The technical responsibility should be bound to the operatorship.</p> | |
| Article 2(8) | | |
| Article 2(9) | | |
| Article 2(10) | | |
| Article 2(10a) | | |
| Article 2(11) | | |
| Article 2(12) | | |
| Article 2(13) | | |
| Article 2(14) | | |
| Article 2(15) | | |
| Article 2(16) | | |
| Article 2(17) | <p>The definition of PPM does not take into account the statement of recital (9). Recital (9) states, that only generating equipment "of the same underlying technology" shall be considered together as one PPM.</p> <p>the option to integrate units of different underlying technologies should be available to the facility owner</p> | <p>'power park module' or 'PPM' means a unit or ensemble of units of the same underlying technology ,or of different underlying technologies if they are forming an operational unit, that can generate electricity, which is not a synchronous power-generating module and which is either non-synchronously connected to the network or connected through power electronics, and that also has a single</p> |

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| | | connection point to a transmission system, distribution system including closed distribution system or HVDC system |
| Article 2(18) | | |
| Article 2(19) | | |
| Article 2(20) | | |
| Article 2(21) | | |
| Article 2(22) | | |
| Article 2(23) | | |
| Article 2(24) | | |
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| Article 2(61) | | |
| Article 2(62) | | |
| Article 2(63) | | |
| Article 2(64) | | |
| Article 2(65) | | |
| Article 2(66) | | |
| Article 2(67) | | |
| | | 'maximum consumption capacity' means the maximum continuous active power which a demand unit or electricity storage module can consume, including any demand or losses associated solely with facilitating the operation |

| | | |
|---------------|--|--|
| Article 2(68) | <p>Definition of max consumption capacity has a copy past error from the definition of maximum capacity.</p> <p>it is not “less”, but “including” any demand and losses.</p> | <p>of that demand unit or electricity storage module, as specified in the connection agreement or as agreed between the relevant system operator and the demand facility owner or power-generating facility owner, or determined by other appropriate means, where an agreement is not required.</p> |
| Article 2(69) | | |
| Article 2(70) | | |
| Article 2(71) | | |
| Article 2(72) | | |
| Article 2(73) | | |
| Article 2(74) | | |
| Article 2(75) | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|--|--|
| | <p>Reasoning:</p> <p>This proposed definitions are aligned with the PGM definition and the IGD on Compliance Verification (2021);</p> <p>The definition of component has been adopted to typical appliances within PGMs. HVDC appliances have been removed.</p> <p>In many discussions within the EG HCF (and the ESC) it became obvious that a common understanding and, hence, stringent definition of the terms equipment and component is mandatory for the further design of compliance processes and their clear system delimitation.</p> <p>IGD definition has been formally extended to component of PGUs as these are likely to be applied also in PGU certification (e.g. protection relays)</p> <p>Certification and family concepts are on PGU and not PGM level</p> <p>PGU manufacturers produce similar products with variations on power size and voltage, while keeping all other characteristics the same. It is impractical for those manufacturers to obtain individual equipment certificates for each unit – in many cases this may require testing a large quantity of units (hundreds of tests). Therefore, an approach to allow testing a representative unit of a product “family” and apply the results to other members within the family is required.</p> <p>PGU Family definition is missing in existing NC RfG and is essential for acceptance of PGU certification among EU countries.</p> <p>Proposal:</p> <p>power generating unit’ or ‘PGU’ means an aggregation of components converting a primary source of energy into electricity at its terminals, which is synchronously connected to the network or which is either non-synchronously connected to the network or connected through power electronics.</p> <p>‘component’ means any hardware element or</p> |

New definition

software element having an impact on the electrical characteristics and /or operation of a power generating unit or a power-generating module.

‘PGU family’ means a group of PGUs from the same manufacturer with equivalent characteristics to the representative unit which has undergone conformance tests (tested unit), in terms of electrical performance. PGU family members may differ in power and voltage from the representative unit. The extent of the PGU family will be defined within the compliance scheme

‘Component family’ means a group of components from the same manufacturer with equivalent characteristics to the representative component which has undergone conformance tests (tested component), in terms of electrical performance. The extent of the component family will be defined within the compliance scheme

‘compliance scheme’ means a compliance verification programme provided by the relevant system operator which shall specify all evaluation and assessment measures to be taken, e.g. equipment certificates, tests, technical documentation and/or simulations, aimed to demonstrate the compliance of a PGM with the specified requirements during the operational notification process. The compliance scheme shall provide detailed information on the specified requirements or provide unambiguous references to relevant technical documents and standards. The compliance scheme may specify the format of the statement of compliance as well as further procedural information for embedding the statement of compliance in the operational notification process. Where equipment certificates are applied within the compliance scheme the scheme shall include or provide a reference to a certification scheme. The applied equipment certificates must be valid for the specific equipment installed within the PGM which a connection request has been made.

‘specified requirements’ are provisions on power generation units, power generation modules or their components and which need to be fulfilled

‘Statement of conformity’ means an attestation

based on a conformity assessment that the fulfilment of specified requirements has been successfully demonstrated. The statement of conformity is provided in the equipment certificate.

Reasoning:

Add definition for European standard. Proposal for a definition is taken from the Article 2 (23) of:
26.4.2023

PROVISIONAL AGREEMENT RESULTING FROM INTERINSTITUTIONAL NEGOTIATIONS
Proposal for a regulation of the European Parliament and of the Council on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU of the European Parliament and of the Council (COM(2021)0559 – C9-0331 /2021 – 2021/0223(COD))

Proposal

‘European standard’ means a standard as defined in Article 2, point (1)(b) of Regulation (EU) No 1025/2012 of the European Parliament and of the Council

Please upload figures or tables if necessary

The maximum file size is 1 MB

TITLE I - General provisions

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

Includes new articles

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|------------------|---|--|
| Article 1 | | |
| Article 3 | | |
| Article 4 | <p>as the time for providing proposals of the TSO plus the time to take decision by the designated entity adds up to 30 months, the actual requirements may not be known to the facility owner by the time of connection of the power generating module, especially in case of small mass market power generating facilities. A defined time to implement new requirements is needed</p> | <p>4(2)(b) the power-generating facility owner has concluded a final and binding contract for the purchase of the main generating plant by two years after the entry into force of the Regulation or by one year after the designated entity made a decision on requirement proposals according to article 7(6), whichever is the later.</p> |
| Article 4a [new] | <p>With the text stated here, an existing PV plant needs to be updated to the new RfG requirements if at the same point of connection a second PV Plant is connected. As all PV Plants at one connection point are seen as one PPM this second PV Plant would not be considered as a separate PPM, but it would be considered as a significant modernisation of a one PPM resulting in the need to update the existing plant.</p> | <p>Article 4a (3) An existing and unchanged part of an PPM is considered existing according to Article (4), provided a safe and undisturbed power supply is ensured.</p> |
| | | |

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|------------------|--|---|
| <p>Article 5</p> | <p>Regarding Article (5)(2) Due to the introduction of FRT and Fast active power recovery for Type A there is no need for very low banding thresholds between type A and Type B. A minimum threshold between Type A and Type B should be introduced at 50kW as the EG BftA report proposes or 0,1 MW what seems a reasonable value for WG03</p> <p>Regarding Article (5)(3) an agreement is necessary as the limit has to consider distribution networks needs and constraint</p> | <p>Regarding Article (5)(2)(b) (i) maximum capacity at or above a threshold specified by each relevant TSO in accordance with paragraph 3 type B threshold contained in Table 1 (type B). This threshold shall not be below [0,05MW / 0,1MW] and not be above the limits for type B power generating modules contained in Table 1 ;</p> <p>Regarding Article (5)(3) Proposals for maximum capacity thresholds for types B, C and D power-generating modules shall be subject to approval by the relevant regulatory authority or, where applicable, the Member State. In forming proposals, the relevant TSO shall coordinate with adjacent TSOs and agree with the RSO and shall conduct a public consultation in accordance with Article 10. A proposal by the relevant TSO to change the thresholds shall not be made sooner than three years after the approval of the previous proposal.</p> |
| <p>Article 6</p> | | |
| | | <p>3. When applying this Regulation, Member States, designated entities and system operators shall:</p> <p>6. Designated entities shall take decisions on proposals for requirements or methodologies within six months following the receipt of such proposals.</p> |

Article 7

in 7(1) a designated entity is described, in 7(3) and in 7(6) the term “competent entity” is used, but not defined.

Regarding Article 7(3)(f)
recital (3) indicates Harmonisation being one objective of this regulation. The most powerful means of harmonisation in the EU is European standardisation. European standards should therefore become the default implementation of RfG, deviations from European standards should be the exception and should be solved between EU standardisation bodies and the relevant TSO in due time.

If IGD is kept in the list specify that IGDs, shall have a public transparent consensual process.

Regarding Number (4)
reduce implementation time to 18 Moths, as otherwise the remaining time until requirements must be fulfilled is too short for mass market product manufacturers.

Regarding new Numer 10

Regarding Article 7(3)(f)

(f) apply applicable agreed European standards and European technical specifications. If deviations from European standards are necessary, these shall be reasoned in a cost benefit analysis. TSOs or ENTSOE shall inform national and European technical committees respectively on applicable new requirements in due time.

(g) take into consideration implementation guidance documents developed by ENTSO-E in a transparent, consensual, public process and in accordance with Article 59(15) of Regulation (EU) 2019/943 , and relevant nuclear safety rules;

(h) take into consideration local system needs in specifying power-generating modules capabilities where necessary.

4. The relevant system operator or TSO shall submit a proposal for requirements of general application, or the methodology used to calculate or establish them, for approval by the designated entity within 18 month of entry into force of this Regulation. The Member State may provide for a shorter time period for all or parts of the requirements or the methodologies. In this case, the Member State shall communicate the shorter time period to the European Union Agency for the Cooperation of Energy Regulators (ACER).

| | | |
|------------|--|---|
| | <p>In accordance with Article 10 of Regulation (EU) No 1025/2012, the Commission may request European standardisation organisations to draft European standards setting technical specifications for areas referred to in Title II and Title IV of this Regulation for which no common technical specifications have been adopted by the Commission.</p> <p>Regarding new number 11 See other comments on compliance scheme resulting fomr HCF report.</p> | <p>10. In accordance with Article 10 of Regulation (EU) No 1025/2012, the Commission may request European standardisation organisations to draft European standards setting technical specifications for areas referred to in Title II and Title IV of this Regulation for which no common technical specifications have been adopted by the Commission.</p> <p>11. The relevant system operator or TSO shall submit a proposal for a detailed compliance scheme updated including the use of equipment certificate, for approval by the designated entity within 18 months from the entry into force of this Regulation. The Member State may provide for a shorter time. In this case, the Member State shall communicate the shorter time period to the European Union Agency for the Cooperation of Energy Regulators (ACER). The RSO and TSO shall coordinate the details of the compliance scheme with relevant stakeholders including manufacturers.</p> |
| Article 8 | | |
| Article 9 | | |
| Article 10 | | |
| Article 11 | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|-------------|---|
| New article | |

Please upload figures or tables if necessary

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TITLE II CHAPTER 1 - General Requirements

General requirements for type A power-generating modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

Includes new paragraphs

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|---------------|--|---|
| Article 13(1) | | |
| Article 13(2) | <p>Regarding (2)(b)(iv): how is the coordination between RSO and TSO understood? Has the TSO the right to reject a proposed solution? Would “agreement” be a more exact wording?</p> <p>Regarding 13/(2)(c) In the sentence “Protection schemes, other than those specifically referred in paragraph b(iii) above, shall not jeopardise frequency-ride-through performance specified in paragraph (b).”, b(iii) should be replaced by b.(iv)</p> | <p>If the rate-of-change-of-frequency is used for loss of mains protection, the relevant system operator, in agreement with the relevant TSO, shall specify the threshold of this rate-of-change-of-frequency-type loss of mains protection</p> <p>Regarding 13/(2)(c) Protection schemes, other than those specifically referred in paragraph b(iv) above, shall not jeopardise frequency-ride-through performance specified in paragraph (b).</p> |
| | <p>The requirements of § 13.3.a and § 13.3.c are contradictory : § 13.3.a mentions that the TSO decides upon the threshold whereas § 13.3.c sets a value</p> <p>Regarding 13(3)(d) Uniform characteristic curves for the frequency response should be defined across Europe. This avoids incorrect settings in type A bulk business. (d) Define default droops per synchronous area as done for f1 in Table X (15(2)(d). For central Europe 5%</p> | <p>Make § 13 (3)(a), 13(3)(b) and 13(3)(c) consistent. 13(3)(a) the power-generating module shall be capable of activating the provision of active power frequency response according to figure 1 at a frequency threshold and droop settings specified by the relevant TSO;</p> <p>Regarding 13(3)(d) (d) the droop setting shall be as defined in Table X of Article 15(2)(d);</p> <p>Article 13(3)(g) the power-generating module shall be capable</p> |

Article 13(3)

Regarding 13(3)(g)

The general need of such a blocking function is understood, but there is a high risk, that details will be defined differently in different countries undermining harmonisation and the common market.

Explicitly the question whether to stop LFSM-O (or U) if the blocking signal is received during an LFSM-O (or U) event, is not clear

Increase the value of European Standards, so that this function can be defined in detail in standards such as EN 50549 where already additional detail to LFSM-O is defined and applied in Europe.

Regarding 13(3)(g)(i) and 13(3)(g)(ii)

W.r.t the ACER Policy Paper (48) 1st paragraph and draft NC RfG, whereas (27), the value given in (i) and ii) shall not just distinguish between synchronous and power park modules but also mention technologies used with their dynamic characteristics as e.g. given in EN 50549-1 /-2. The proposed justification in case of higher response times is not feasible for mass market products of type A and in many cases type B.

regarding 13(3)(h):

(h) Define default droop and default threshold as done for f1 in Table X (15(2)(d)). For f1 as in

of operating stably during LFSM-O operation. When LFSM-O is active, the LFSM-O setpoint will prevail over any other active power setpoints which would result in an increase of power above the LFSM-O setpoint. The power generating module shall be able to receive and react on an external signal allowing the relevant system operator to block active power LFSM-O mode in real-time. The TSO in coordination with the RSO applying applicable European Standards shall define the framework conditions for the use of this function

Regarding 13(3)(g)(i) and 13(3)(g)(ii)

The response time, T_{resp} in Figure XX, for active power decrease in case of increasing frequency, shall be as fast a technically feasible with reference to applicable European Standards and as described below:

- For PV and battery inverters below 1 s for ΔP of 100 % P_{max} .
 - For wind turbines 2 s for $\Delta P < 50$ % P_{max} .
 - For combustion engines, gas turbines, fuel cells below 2 MW 66% /min for a 100% change.
 - For combustion engines, gas turbines, fuel cells above 2 MW 20% /min for a 100% change.
- If the response time is greater than stated above, the power-generating facility owner shall justify the delay, providing technical evidence to the relevant TSO.

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| | <p>Table X, droop for central Europe 5%.</p> <p>the possibility of PPM combining storage and generation should be taken into account as well. “In the case of electricity storage modules, Pref could be the actual active power at the moment the LFSM-O threshold is reached or the maximum capacity or maximum consumption capacity, as specified by the relevant system operator. ”</p> <p>In case of hybrid products it has to be clarified if these have to be dealt with like a storage system in setting this parameter or other.</p> | <p>13(3)(h)</p> <p>An electricity storage module shall be capable of activating the provision of active power frequency response from the current active power input or output automatically up to the maximum consumption capacity according to the indicative Figure 1 to the extent that is technically feasible. A frequency threshold and a droop setting specified by the relevant TSO in accordance with paragraph (3)(c) and (d) of this Article shall apply.</p> <p>.....</p> <p>.....</p> <p>In case of electricity storage modules and PPM combining storage and generation, Pref could be the actual active power at the moment the LFSM-O threshold is reached or the maximum capacity or maximum consumption capacity, as specified by the relevant system operator ...</p> |
| Article 13(4) | references wrong | <p>The power-generating module shall be capable of maintaining constant output at its target active power value regardless of changes in frequency, except where output follows the changes specified in the context of paragraphs 2 3 and 4 5 of this Article or points (c) and (d) of Article 15 (2) as applicable.</p> |
| Article 13(5) | | |
| Article 13(6) | | |
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| <p>Article 13(7)</p> | <p>CENELEC deems it necessary to require a communication interface to reduce output power. However there are several generating technologies that are not able to provide this function and due to their small marked share seem not critical to the grid. Generating modules of such technologies should be exempted from this requirement. This is: small generating units below 50 kW of the following generation technologies: CHP, fuel cell, rotating machinery, hydro.</p> <p>it is unclear what the “operable remotely” refers to. Please make this clearer.</p> <p>There must be a uniform interface for communication in Europe.</p> | <p>The power-generating module except small PPMs below 50 kW of the following generation technologies: CHP, fuel cell, rotating machinery, hydro, shall be equipped with a communication interface (input port) in order to reduce, without undue delay, active power output following an instruction being received at the input port.</p> <p>.....</p> <p>The relevant system operator shall have the right to specify requirements applying European Standards where applicable for equipment to make this Interface this power-generating module facility operable remotely.</p> |
| <p>Article 13(8)</p> | | |
| <p>Article 13(9)</p> | <p>wrong reference Replace 7 with 8</p> <p>Regarding Article 13(9)(e) to (f) In case of small size PPMs the synchronisation is not done with circuit breakers. “voltage phase angle difference measured on each side of the circuit breaker :” should be stated in a way which is technology neutral to allow other suitable switch types. see also https://www.electropedia.org/iev/iev.nsf</p> | <p>Within the capability defined in paragraph (8), the default settings for an autonomous connection shall be as follows:</p> <p>....</p> <p>(e) Condition on voltage phase angle difference measured on each side of the switch before connection: $\Delta\theta < 10^\circ$ (f) Condition on the voltage magnitude difference measured on each side of the switch before connection: $\Delta U < 0.04$ pu; and (g) Condition on the frequency difference</p> |

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| | <p>/display?openform&ievref=151-12-22 switch being the umbrella term</p> <p>Synchronization conditions specified here cannot be met by generating technologies without voltage generation at the generator side (such as asynchronous generators started using the generator).</p> | <p>measured on each side of the switch before connection: $\Delta f < 0,2 \text{ Hz}$</p> <p>Induction generators started using the generator energized from the grid are exempted from requirement (e), (f); (g).</p> |
| Article 13(10) | <p>This requirement is not clear especially for small generators. Requirement should be redrafted to understand its intent. We propose that the first sentence is deleted as it is misleading. Providing a “constant terminal voltage” is not possible for plants connected to a strong point of connection.</p> | <p>The relevant system operator shall have the right to specify, applying European Standards where applicable, the capability of a power-generating module to supply or absorb reactive power both when importing or exporting active power;</p> |
| Article 13(11) | <p>13 (11)(a)(i) A droop of 0,2% and a default of 1% would be way to sensitive and poses the severe risk of oscillations. The same range as for LFSM-O should be used 2% to 12% with a 5% default</p> | <p>13 (11)(a)(i) (i) The droop shall be adjustable between 2% to 12%. The default droop s shall be 5%;</p> |
| Article 13(12) | <p>Normally e.g. DCC and in EU Standards (e.g. EN50160), the distinction between LV and MV is done at 1000V. This should also be adopted in RfG.</p> <p>The same applies for 14a(2)(a)</p> | <p>12. With regard to voltage stability, unless otherwise provided in this Regulation, the power-generating module shall be capable of staying connected to the network and operate continuously within the range of 0,85 pu - 1,1 pu at the connection point should that be at or below 1000V. Conversely, the power-generating module shall be capable of staying connected to</p> |

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| | | the network and operate continuously within the range of 0,9 pu - 1,1 pu at the connection point should that be above 1000V and below 110 kV |
| Article 13(13) | | |
| Article 13(14) | <p>see ACER Policy Paper (48) 1st paragraph and draft NC RfG, whereas (27),. Rational: See results on EG Baseline for Type A report and related requirements in EN 50549-1 / -2. Exemption is only acceptable for CHP and generating units based on rotating machinery below 50 kW as EN 50465 for gas appliance requests disconnection in case of under voltage.</p> <p>Exclusions for certain technologies such as for small μCHP generators up to 50 kW are necessary so that reference to Article X and Y is not applicable</p> | (c) Small generating units below 50 kW of the following generation technologies: CHP, fuel cell, rotating machinery, hydro, are exempted of this requirement. |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|---------------|---|
| New provision | |

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[NEW] General requirements for type EV1 and EV2 V2G electric vehicles and associated V2G electric vehicle supply equipment

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|----------------|---|--|
| Article 13a(1) | <p>The sentence “If the rate-of-change-of-frequency is used for loss of mains protection, the rate-of-change-of-frequency threshold shall be set at higher values than the ones defined in point” is not complete. Which point is it made reference to ?</p> <p>13a.1.c “The protection schemes shall not jeopardise frequency-ride-through performance specified in paragraph (b)” are in contradiction with the statement in 13.2.b.(iv) and 13.2.c which allow to define any rate-of-change-of-frequency threshold for interface protections:</p> <p>13.2.b.(iv) “If the rate-of-change-of-frequency is used for loss of mains protection, the relevant system operator, in coordination with the relevant TSO, shall specify the threshold of this rate-of-change-of-frequency-type loss of mains protection”</p> <p>13.2.c : Protection schemes, other than those specifically referred in paragraph b(iiiiv) above, shall not jeopardise frequency-ride-through performance specified in paragraph (b).</p> <p>Put the requirements of 13a.1.b.(iii) and 13a.1.c in conformity with the requirement of 13.2.b.(iv) and 13.2.c.</p> <p>Allow the relevant system operator, in agreement with the relevant TSO, to define</p> | <p>If the rate-of-change-of-frequency is used for loss of mains protection, the relevant system operator, in agreement with the relevant TSO, shall specify the threshold of this rate-of-change-of-frequency-type loss of mains protection.</p> |

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| | <p>coordinated rate-of-change-of-frequency thresholds for interface/loss of main protections which shall not jeopardise frequency-ride-through performance except in case of local and temporary needs.</p> | |
| <p>Article 13a(2)</p> | <p>In the Document: 26.4.2023 PROVISIONAL AGREEMENT RESULTING FROM INTERINSTITUTIONAL NEGOTIATIONS Proposal for a regulation of the European Parliament and of the Council on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU of the European Parliament and of the Council (COM(2021)0559 – C9-0331/2021 – 2021/0223(COD))</p> <p>bidirectional communication of EV charging equipment is defined. RfG must be harmonised with the updated AFID. AFID will state: Operators of recharging points shall ensure that all publicly accessible recharging points operated by them built after [please insert: the date of application referred to in Article 24] of this Regulation or renovated from the sixth month following [please insert: its date of application as referred to in Article 24] are capable of smart recharging.</p> <p>‘smart recharging’ means a recharging operation in which the intensity of electricity delivered to the battery is adjusted in real-time, based on information received through</p> | <p>2. A V2G electric vehicle supply equipment shall be capable of smart recharging according [please insert final reference to AFID recast]</p> |

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| | electronic communication; | |
| Article 13a(3) | | |
| Article 13a(4) | | |
| Article 13a(5) | | |
| Article 13a(6) | <p>regarding 13a(6)(d)</p> <p>Why is the response time for: 13a(5)(e)LFSM-EV-U differently defined as the LFSM-EV-O13a(6)(d)?</p> <p>§ 13.3.e does not allow any delay in the action of LFSM-O for other PPM. Why is it allowed for EV ?</p> | <p>regarding 13a(6)(d)</p> <p>Make both § consistent: (d) the start of active power decrease (initial delay time T_{id} (Figure XX)) by the power- generating module shall not be intentionally delayed.;</p> |
| Article 13a(7) | <p>Reference made to § 2 and 4 for specified active power variation is not correct. § 2 refers to cyber protection and § 4 to parameters for connection. May be § 5 and 6 are meant for LFSM-U and LFSM-O</p> | <p>..... ...specified in the context of paragraphs 52 and 64 of this Article.</p> |
| Article 13a(8) | <p>Reference to § 10 for LVRT is not correct. § 9 deals with LVRT</p> | <p>Replace § 10 with § 9</p> |
| Article 13a(9) | | |
| Article 13a(10) | | |
| Article 13a(11) | | |

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| | Text amendment proposal (if applicable) |
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General requirements for type B power-generating modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|------------------------|--|---|
| Article 14(1) | | |
| Article 14(2)[deleted] | | |
| Article 14(2) | | |
| Article 14(3) | <p>Regarding 14(3)(a)(iv) The DSO calculates the short circuit at the connection point of the generator based on the data provided by the TSO</p> <p>Regarding 14(3)(b) According to EN 50549-2 article 4.5.3.1 “The requirements apply to all kinds of faults (1ph, 2ph and 3ph)”; this proposal shall align this and will guarantee that a TSO does not create a more stringent profile than that defined for symmetrical faults.</p> <p>Regarding 14(3)(c) Fig X demands to ride through voltage swells up to 1.3 p.u. for 100 ms. This may not be technically feasible for some components of present generating modules. OVRT for type A and B has been standardised in EN 50549 since 2019 with a survey in 2022 resulting in no need to increase the present values of 125%@ 100ms. We propose to use the OVRT curve being state of the art in Europe also in RfG or refer to this standard. Also the option to further increase the requirements by the TSO/RSO results in a very unsecure situation</p> | <p>14(3)(a)(iv) each TSO in agreement with the relevant system operator shall specify and make publicly available the pre-fault and post-fault conditions for the fault-ride-through capability in terms of:</p> <p>14(3)(b) fault-ride-through capabilities in case of asymmetrical faults shall be specified by each TSO but will stay within the limits defined for symmetrical faults according to 14(3)(a).</p> <p>(c) The power-generating module shall be capable of operating stably without disconnecting from the network, if none of the phase-to-phase voltages exceeds the voltage-against-time-profile defined in Figure X at the connection point. The diagram represents the higher limit of a voltage-against-time profile of the voltage at the connection point, before, during and after a fault. Urecf is the maximum voltage specified in paragraph 2</p> <p>replace figure X</p> |

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| | for equipment manufacturers and hinders the common market for mass market equipment. | |
| Article 14(4) | The DSO should also decide on the reconnection conditions | the use of autonomous connection function shall be subject to prior authorisation by the relevant system operator and to the reconnection conditions specified by the relevant TSO and the relevant system operator taking into account specific RSO operational needs |
| Article 14(5) | | |

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| | Text amendment proposal (if applicable) |
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| New provision | |

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[NEW] Requirements for type EV3 electric vehicles and associated V2G electric vehicle supply equipment and V2G electrical charging parks

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|----------------|--------------------------------------|---|
| Article 14a(1) | | |
| Article 14a(2) | | |
| Article 14a(3) | | |
| Article 14a(4) | | |
| Article 14a(5) | | |
| Article 14a(6) | | |
| Article 14a(7) | | |
| Article 14a(8) | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|---------------|---|
| New provision | |

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General requirements for type C power-generating modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|---------------|--|--|
| Article 15(1) | | |
| Article 15(2) | <p>15(2)(d)(i) [second dashed item] copy paset error must be "in-feed" and "minimum energy"</p> <p>15(2)(d)(i) [third dashed item]</p> <p>It seems some words are missing because the added text does not fit in with the prior sentence sentence is not complete. Please complete as was intended or remove.</p> <p>IN Table 4: With reference to table 4, 0.06% value seems wrong, since $15m/50=0.03\%$. Anyway, reporting both dfi and dfi /fn seems redundant</p> <p>In Figure 5: FSM: How can P_{ref} be the active power at the moment of reaching the FSM threshold, for FSM that shall operate continuously in case of zero-deadband or a deadband smaller than the measurement noise? The reference power can only be a power setpoint defined by the operation mode.</p> | <p>15(2)(d)(i) [second dashed item] - in case of underfrequency, the active power frequency response is limited by maximum capacity, and, in case of electricity storage modules, also by the maximum in-feed capacity or minimum energy content of the electricity storage module in its operative condition (as declared by manufacturer)</p> <p>15(2)(d)(i) [third dashed item] the actual delivery of active power frequency response depends on the operating and ambient conditions, as well as, on the underlying energy storage technology for the, of the power-generating module when this response is triggered, in particular, but not limited to, limitations on operation near maximum capacity at low frequencies according to paragraphs 4 and 5 of Article 13 and available primary energy sources</p> <p>IN Table 4: Delete dfi /fn subrow</p> <p>In Figure 5 "P_ref is the active power at the moment of reaching the FSM threshold" to "active power setpoint"</p> |

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| Article 15(3)[deleted] | | |
| Article 15(3) | | |
| Article 15(4) | | |
| Article 15(5) | <p>15(5)(c)(iii) With reference to third dashed item “be open source generic model for cross border network stability studies; ”</p> <p>in the case that encrypted detailed RMS models are accepted by the relevant TSO, the relevant TSO shall specify the requirements of the model encryption according to national regulations (for example use of source code, the model structure and the signal interfaces to be observable in the network studies);”</p> <p>And considering that generic and detailed models are different, the above text would lead to make generic models mandatory and detailed one optional, apparently upon discretion of the SO.</p> <p>Generic models based on generally accepted standards, such as European Standards are needed, especially for mass market. We propose to the ACER and to the Commission to request European standardisation bodies to draft relevant standards according 1025/2012 Article (10).</p> <p>15(5)(c)(v)</p> | <p>15(5)(c)(iii) With reference to third dashed item “rely on generic models, if available for the plant technology, in case of TSO request or unavailability of suitable generic models, rely on encrypted detailed RMS models. TSO may enforce national requirements (for example use of source code, the model structure and the signal interfaces to be observable in the network studies)”</p> <p>Move 15.5.c.v. to Article 16 and replace in Article 15.5.c.v. with: For the purpose of frequency domain simulations for the risk assessment of the resonance stability of the power park module, the relevant system operator or the relevant TSO shall have the right to request from the power-generating facility owner the frequency dependent impedance model of the power-generating facility at the connection point. Without prejudice to the Member State's rights to introduce additional requirements, the following requirements shall apply:</p> <ul style="list-style-type: none"> - The impedance model of the power-generating facility shall be requested at least in the range 5.0 Hz - 2500Hz; As an additional requirement, the relevant system operator or the relevant TSO can extend the required applicability of the model to up to 9 000 Hz. - The relevant system operator or the relevant TSO |

in Reference to the third, fourth and fifth dashed item. It is worth to point that these models, taking into consideration the closed loop control of the plant, that differs between grid following and grid forming modes, underly complex studies, that are not sustainable for Type C plants, as type C starts in some zones at only several MW. We consider it sufficient to use a simplified Norton equivalent for Type C.

shall have the right to request the calculation of the impedance model of the power-generating facility either numerically (using the EMT model) or analytically (using transfer function);

- The harmonic model of the plant, shall be relying on Norton equivalent of the converter.
- The impedance model of the power-generating facility shall be provided for the positive, negative and for the zero phase sequence;
- The power-generating facility owner shall specify and justify simplifications made in the calculation of the impedance model.

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
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| New provision | |

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General requirements for type D power-generating modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|---------------|--------------------------------------|---|
| Article 16(1) | | |
| Article 16(2) | | |
| Article 16(3) | | |
| Article 16(4) | | |

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| | Text amendment proposal (if applicable) |
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| New provision | |

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TITLE II CHAPTER 2 - Requirements for synchronous power-generating modules

[NEW] Requirements for type A synchronous power-generating modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|-----------|---|---|
| Article X | Article (x)(1(d) and (e) refere to paragraphe 3, but there is no paragraph 3 in Article (x) | Give the articles to which the mentioned paragraphs refer |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
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| New provision | |

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Requirements for type B synchronous power-generating modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|---------------|--------------------------------------|---|
| Article 17(1) | | |
| Article 17(2) | | |
| Article 17(3) | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
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| New provision | |

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Requirements for type C synchronous power-generating modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|---------------|--------------------------------------|---|
| Article 18(1) | | |
| Article 18(2) | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|---------------|---|
| New provision | |

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Requirements for type D synchronous power-generating modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

Includes new paragraphs

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|---------------|--------------------------------------|---|
| Article 19(1) | | |
| Article 19(2) | | |
| Article 19(3) | | |
| Article 19(4) | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|---------------|---|
| New provision | |

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TITLE II CHAPTER 3 - Requirements for power park modules

[NEW] Requirements for type A power park modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|--------------|---|--|
| Article Y(1) | | |
| Article Y(2) | | |
| Article Y(3) | | |
| Article Y(4) | | |
| Article Y(5) | gridforming needs to be specified mutually between TSO and RSO | the relevant TSO in agreement with the relevant system operator may specify that type A power park modules shall be capable of providing and /or activating grid forming capability at the connection point. |
| Article Y(6) | | |
| Article Y(7) | | |
| Article Y(8) | Art 8 makes grid forming capabilities compulsory for all power park modules whereas Art 5 makes them only a possibility for type A power park modules | 8. A power park module, if specified accordingly in Article Y(5), shall be capable of providing grid forming capability at the connection point as listed below. |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
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| New provision | |

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Requirements for type B power park modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

Includes new paragraphs

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|---------------|--|--|
| Article 20(1) | | |
| Article 20(2) | <p>regarding deleted item (b) fast fault current injection must be kept as Article Y(7) allows that PPMs are connected in grid following mode if needed by the DSO. In such cases these PPMs must be capable of FFCI. The ACPPM proposal maintained Article 20(2) (b) but stated it not applicable if grid-forming according to Article Y(5) is provided</p> | <p>(b) If, according to Article Y(7), grid-forming mode according to Article Y(8) is not activated the relevant system operator in agreement with the relevant TSO shall have the right to specify that a power park module be capable of providing fast fault current at the connection point in case of symmetrical (3-phase) faults, regarding the following:</p> <p>un-delete all of further items of 2(b) and (c)</p> |
| Article 20(3) | | |
| Article 20(4) | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
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| New provision | |

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Requirements for type C power park modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

Includes new paragraphs

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|-------------------------|--------------------------------------|---|
| Article 21(1) | | |
| Article 21(2) [deleted] | | |
| Article 21(2) | | |
| Article 21(3) | | |
| Article 21(4) | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
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| New provision | |

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Requirements for type D power park modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

Includes new paragraphs

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|---------------|--------------------------------------|---|
| Article 22(1) | | |
| Article 22(2) | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|---------------|---|
| New provision | |

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TITLE II CHAPTER 4 - Requirements for offshore power park modules

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|------------|--------------------------------------|---|
| Article 23 | | |
| Article 24 | | |
| Article 25 | | |
| Article 26 | | |
| Article 27 | | |
| Article 28 | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|-------------|---|
| New article | |

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TITLE III - Operational notification procedure for connection

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

Includes new articles

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|-------------------|--|--|
| Article 29 | <p>Modification of paragraph 2 brings the compliance scheme topic and the fact that it needs to be applied</p> <p>new paragraphs ensure that an acceptance of equipment certificates is facilitated by a clear specification by the RSO on</p> <p>a) respectively accepted certification schemes and</p> <p>b) respectively accepted specified requirements, e. g. grid codes, from other member states, on which the conformity assessment is performed</p> | <p>2. The relevant system operator shall clarify and make publicly available the details of the operational notification procedure which shall include the compliance scheme.</p> <p>3. the compliance scheme shall address the use of equipment certificates of PGU and component.</p> <p>4. The compliance scheme should refer to applicable international or European standards if available.</p> |
| Article 30 | | |
| Article 30a [new] | | |
| Article 30b [new] | | |
| Article 31 | | |
| Article 32 | | |
| Article 33 | | |
| Article 34 | | |
| Article 35 | | |
| Article 36 | | |
| Article 37 | | |
| Article 38 | | |
| Article 39 | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|-------------|---|
| New article | |

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TITLE IV - Compliance

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|------------|---|---|
| Article 40 | | |
| Article 41 | | |
| Article 42 | | |
| Article 43 | | |
| Article 44 | | |
| Article 45 | | |
| Article 46 | | |
| Article 47 | To support unified market for mass market products, equipment certificates must be based on European Standards rather than deviating national requirements. | <p>Power-generating facility owners shall undertake LFSM-O and LFSM-U-ESM response compliance tests in relation to type B power park modules.</p> <p>Instead of the relevant test, the power-generating facility owner may use equipment certificates issued by an authorised certifier to demonstrate compliance with the relevant requirement. In that case, the equipment certificates shall be provided to the relevant system operator. If applicable European Standards and European Specifications are available, these shall be taken into account.</p> |
| | To support unified market for mass market products, equipment certificates must be based | <p>1. In addition to the compliance tests for type B power park modules described in Article 47, power-generating facility owners shall undertake the compliance tests set out in paragraphs 2 to 9 in relation to type C power park modules.</p> <p>Instead of the relevant test, the power-generating facility owner may use equipment</p> |

| | | |
|------------|--|---|
| Article 48 | on European Standards rather than deviating national requirements. | certificates issued by an authorised certifier to demonstrate compliance with the relevant requirement. In such a case, the equipment certificate shall be provided to the relevant system operator. If applicable European Standards and European Specifications are available, these shall be taken into account. |
| Article 49 | | |
| Article 50 | | |
| Article 51 | | |
| Article 52 | | |
| Article 53 | The DSO should also be able to require a stability compliance for the reactive power control in a close loop operation | (1) (a) The relevant TSO and the RSO has the right to request a stability compliance for reactive power capability control in a close loop operation set up of the synchronous power-generating module. |
| Article 54 | To support unified market for mass market products, equipment certificates must be based on European Standards rather than deviating national requirements. Regarding deleted Paragraph 3 regarding Article 20(2)(b): See comment on Article 20(2)(b) | 1. Type B power park modules are subject to the compliance simulations in paragraphs 2 to 5. Instead of all or part of those simulations, the power-generating facility owner may use equipment certificates issued by an authorised certifier, which must shall be provided to the relevant system operator. If applicable European Standards and European Specifications are available, these shall be taken into account. undelete former paragraph 3 |
| | | 1. In addition to the compliance simulations for type B power park modules set out in Article 54, |

| | | |
|------------|---|---|
| Article 55 | <p>Article 55(1) To support unified market especially, but not only for mass market products, equipment certificates must be based on European Standards rather than deviating national requirements.</p> <p>Article 55(4)(c)</p> | <p>type C power park modules are subject to the compliance simulations set out in paragraphs 2 to 7. Instead of all or part of those simulations, the power-generating facility owner may use equipment certificates issued by an authorised certifier, which must shall be provided to the relevant system operator. If applicable European Standards and European Specifications are available, these shall be taken into account.</p> <p>Article 55(4)(c) for the simulations of pointaragraph (a) of Article 55(4) the relevant TSO in coordination with the RSO should define an external short-circuit power and inertia to supplement the island scenario at the connection point.</p> |
| Article 56 | | |
| Article 57 | | |
| Article 58 | | |
| Article 59 | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|--------------------|---|
| <p>New article</p> | <p>New Art ZZ (after Art 43)</p> <p>Reasoning:</p> <p>New article ZZ (after article 43) to provide a detailed and harmonised framework on equipment certificates.</p> <p>Following its conclusions in the final report the Expert Group is convinced that these clarifications provided in this new article will promote the provision and application of equipment certificates into the notification process and will, thus, reduce the struggle many MS are facing today due to unclear definitions and knowledge of formal requirements. Especially a clear obligation to the RSO to specify what certification programmes and requirements the RSO is willing to accept will help a lot to deploy certificates in the overall process.</p> <p>Proposal:</p> <p>Article ZZ</p> <p>Common Provisions on Equipment Certificates</p> <p>1. In the case that the compliance scheme specified by the RSO provides for the use of equipment certificates issued by an authorised certifier in the context of Title III and/or Title IV, the equipment certificates shall comply with the following provisions:</p> <p>a) Any equipment certificate shall be based on the certification scheme as specified in the compliance scheme.</p> <p>b) The equipment certificates are classified into PGU certificates, component certificates and PGM certificates. The equipment certificates shall demonstrate the conformity with the specified requirements as defined in the compliance scheme by applying the respective evaluation and assessment measures according to the certification scheme</p> <p>c) Specified requirements referred to within equipment certificates may be defined by the requirements as set out in Title II, provided by a national implementation under this Regulation, by relevant internationally recognized European standards and/or alternative schemes that may</p> |

also be applicable.

2. RSOs shall accept equipment certificates issued by authorized certifiers of any Member States whose accreditation is given by the respective national affiliate of the European cooperation for Accreditation ('EA').

3. RSOs may accept equipment certificates that provide a statement of conformity with respect to specified requirements others than the requirements at national level implemented under this Regulation according to the provisions of Article 7 (1), i.e. the RSOs' national grid codes. In such case, the RSO shall specify the acceptance conditions within the compliance scheme, as well as which additional information needs to be provided in order to demonstrate the compliance of the equipment with the established requirements at national level implemented under this Regulation.

4. The compliance scheme defined by the RSO may define as eligible those equipment certificates where the statement of conformity covers only selected specified requirements (e.g. FRT, LFSM, etc.). These will be used within the compliance scheme required by the RSO.

RSOs may accept equipment certificates for PGU and/or components which belong to a family to the extent defined within the compliance scheme, required by each RSO, under which the assessed PGU and/or component is certified. This subset of PGUs and/or components shall comply with the definition for PGU family, if not otherwise defined in the compliance scheme.

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TITLE V - Derogations

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|------------|--------------------------------------|---|
| Article 60 | | |
| Article 61 | | |
| Article 62 | | |
| Article 63 | | |
| Article 64 | | |
| Article 65 | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|-------------|---|
| New article | |

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[DELETED] TITLE VI - Transitional arrangements for emerging technologies

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|--------------------|--------------------------------------|---|
| Title VI [deleted] | | |

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|-------------------|--------------------------------------|---|
| Article 70a [new] | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|-------------|---|
| New article | |

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TITLE VII - Final provisions

Please write your comments on the ACER draft amendments and your alternative text proposals, if any, in the table below

Includes new articles

| | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|-------------------|--------------------------------------|---|
| Article 71 | | |
| Article 71a [new] | | |
| Article 72 | | |

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|-------------|---|
| New article | |

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Other additional provisions

Please write your amendment proposals, if any, in the table below

| | Text amendment proposal (if applicable) |
|----------------------|---|
| Other new provisions | |

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Background Documents

[NC_RfG_ACER_draft_amendments_for_PC_2023_E_07.docx](#)

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