

**NC RfG DC Recommendation:**

**Annex 6 – Evaluation of responses to the public consultation (26 September until 21 November  
2022)**

# **Public Consultation**

**on**

# **the amendments to the Electricity Grid Connection Network Codes**

**(NCs RfG and DC)**

**PC\_2022\_E\_08**

# **Evaluation Report**

17 07 2023

## 1. INTRODUCTION

This report summarises the responses received to the public consultation on the amendments to the Electricity Grid Connection Network Codes ('public consultation'), and provides an evaluation of the points raised, in relation to the Agency for the Cooperation of Energy Regulators (ACER) consultation document PC\_2022\_E\_08.

The public consultation launched by ACER solicited feedback from various stakeholders on the revision of Grid Connection Codes as published on 26 September 2022 on ACER's website.

In preparation for this consultation, ACER published a Policy Paper<sup>1</sup> on the revision of the Network Code on Requirements for Grid Connection of Generators (NC RfG) and the Network Code on Demand Connection (NC DC) in September 2022 ('ACER Policy Paper'). This document aimed at transparently indicating to stakeholders the key policy areas in which amendments are to be expected. Moreover, the ACER Policy Paper drew on the alternative policy options and provided recommendations and proposed actions for the amendment process.

The public consultation ran from 26 September until 21 November 2022. The consultation resulted in a total of 60 responses (41 for NC RfG and 19 for NC DC) provided by 41 stakeholders (ENTSO-E, EU DSO and European energy stakeholders representing the industry across Europe). The list of respondents is available on ACER's website, alongside their responses<sup>2</sup>. In the present document we explain how the responses received have been taken into account for the network codes' amendment. The steps following the results of this public consultation are also outlined in this document.

The stakeholders proposed amendments mainly concerning the following policy areas:

- Technical requirements for pump storage hydro power generating modules (PMGs)
- Determination of significance of PMGs
- Determination of mixed customer sites (MCS)
- Requirements for Type A PGMs
- Significant modernisation of system users' facilities and equipment
- Requirements for storage and electromobility
- Simulation models and compliance monitoring
- Advanced capabilities
- Weather hazard resilience
- Active customers and energy communities
- Units providing demand response services
- Improvement of the applicable rules and procedures
- Demonstration of compliance.

## 2. EVALUATION OF RESPONSES

Following the close of the public consultation, ACER assessed stakeholders' views and concrete amendment proposals regarding the two GC NCs: the NC RfG and the NC DC.

Below we provide a detailed summary and analysis of the responses received, organised by policy area. It should be noted that the following table provides the responses received in the public consultation and focuses on the key issues raised by the respondents.

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<sup>1</sup> [https://acer.europa.eu/sites/default/files/documents/Position%20Papers/260908%20ACER%20GCNCs%20Policy%20Paper\\_final.pdf](https://acer.europa.eu/sites/default/files/documents/Position%20Papers/260908%20ACER%20GCNCs%20Policy%20Paper_final.pdf)

<sup>2</sup> <https://acer.europa.eu/documents/public-consultations/pc2022e08-public-consultation-amendments-grid-connection-network>

### 3. REQUIREMENTS FOR PUMP-STORAGE HYDRO PGMS

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	ENTSO-E, Oesterreichs Energie, Bundesverband Energiespeicher Systeme e.V., Eurelectric	Article 6(2)	The stakeholders propose amendments to Article 6(2) regarding pump-storage hydro power generating modules. The review of the technical requirements defined by NC RfG with regard to their applicability to Pump Storage Hydro power generating modules has demonstrated that a distinction between the relevant generation technologies and the operation modes is necessary for assessing and evaluating whether these requirements can reasonably be applied. The proposed amendment is in line with the report from the established GC ESC Expert Group "Requirements for pump-storage hydro power generation modules".	Agree	The proposed amendment covers several issues raised by stakeholders during the national implementation of the connection network codes regarding the definition of requirements for pump-hydro storage. <a href="#">The GC ESC Expert Group</a> "Requirements for pump-storage hydro power generation modules" had been established to clarify the issues and propose improvements. The proposed amendment by the stakeholders is in line with the final recommendations by the expert group.
NC RfG	VGBE, Undisclosed stakeholder	New paragraph after Article 2(65), Article 6(2)	The stakeholders propose amendments to Article 6(2) regarding pump-storage hydro power generating modules, based on the report from the established GC ESC Expert Group "Requirements for pump-storage hydro power generation modules". However, according to the stakeholders, in NC RfG an obligation for synchronous compensation mode is introduced only for Pump Storage Hydro technology, not for any other rotating technology e.g. DFIM Wind Farms or conventional power plants. Since synchronous compensation mode, is also a special operation for Pump Storage Power Plants additional investments e.g. for blade cooling, have to be done, even if the mode is not used by the relevant system operator. Therefore, reference to the synchronous compensation mode is removed from Article 6(2) and a new article and definition for synchronous condenser is proposed.	Partly agree	ACER acknowledges the proposed amendments, that are in line with the report from the established GC ESC Expert Group "Requirements for pump-storage hydro power generation modules". However, synchronous condensers are out of scope of the NC RfG and therefore a separate article and definition is not required.
NC RfG	Eurelectric, VGBE, Undisclosed stakeholder	Article 13(1)(a)(i), Article 14(3), Article 16(3)	The stakeholders note that table 2 of Article 13(1)(a)(i) does not apply for pumped hydro and for storage devices in pumping / charging mode. Furthermore, two stakeholders propose to introduce a paragraph covering synchronous power generating modules having low inertia regarding the FRT capability.	Partly agree	According to the report from the established GC ESC Expert Group "Requirements for pump-storage hydro power generation modules", in pumping mode these PGMs are not required to remain connected for certain frequency ranges. In light of the final findings of the expert group, specific provisions for the low inertia machines are not deemed necessary. Nevertheless, relevant power generating facility owners may request a derogation to one or several requirements of the NC RfG.
NC RfG	Oesterreichs Energie	Article 13(2)(a) and Article 15(2)(c)(iii)	The stakeholder proposes specific requirements for LFSM-O and LFSM-U that are also applicable for variable-frequency pump storage hydro power plants. Taking into account stability aspects, "hard-coded" LFSM-O or -U response time requirements might not be applicable/technically feasible for new or substantially modified variable-frequency pump storage hydro PGM technologies. In this case, the robustness of the frequency dependent functions, limiting components (e.g. dynamics of pressure pipes) and potential damages to the PGM or other facilities, due to too fast response times have to be considered. The proposed frequency thresholds for LFSM-O and LFSM-U for Continental Europe are in line with the ENTSO-E Implementation Guidance Document (IGD) on Limited frequency sensitive mode.	Agree	Frequency is shared in the same synchronous area, thus it is important to have the same behaviour regarding the frequency control functions to maintain frequency stability. LFSM-U and LFSM-O thresholds should thus be harmonized at synchronous area level and aligned with FSM settings to ensure a harmonized and stable behaviour. It is also important that the function is used in the same way by all TSOs in a synchronous area so that there is no unwanted interference.
NC DC	ENTSO-E, Edison S.p.A.	Article 3(2)(b), Article 5(1), Article 5(2)	Stakeholders propose to exclude pump-storage hydro units from the NC DC. Pumped-hydro applications are covered by the NC RfG, therefore reference to both network codes for these units could lead to legal ambiguity as two potentially conflicting sets of requirements could apply for when in pump-mode	Agree	The proposed amendment to NC DC reflects the outcomes of the GC ESC Expert Group "Pump Storage Hydro (PSH)".

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	Swedenergy	Article 2 new definitions, Article 13(2), Article 13(3), Article 13(4), Article 13(5), new Article 13(8), Article 15(2), Article 15(4), Article 15(6)	<p>According to the stakeholder, the majority of the large Swedish hydro power units are built with guide vane opening as feedback to the turbine governor. The possibility to switch to active power as feedback has been investigated as that construction became feasible but with the result that guide vane feedback should be preserved. One important reason is that many of the underground hydropower plants are built without respect to the Thoma criterion for surge tank area. Hence, these plants risk self-excitation of surge tank water level, and hence in active power output, if operated with active power feedback. Another risk is that if active power control is incorporated, the water way dynamics will affect the control loop, which will affect the grid in a negative way. This is eliminated by using guide vane opening as feedback. Therefore, the stakeholder proposed to introduce another measured quantity in addition to active power as feedback in the main control scheme.</p>	Disagree	<p>The NC RfG does not go into the detail as to the turbine and governor used in the power generating module. Furthermore, the active power output of a synchronous hydro power generating module is essentially a function of the gate position and therefore there is a direct relationship between them. The network code, when referring to active power, does not exclude the possibility to use, within the governor, the guide vane opening as feedback, since the purpose is to eventually control the active power output of the power generating module. Therefore, there is no need to introduce these proposed amendments.</p>

**4. DETERMINATION OF SIGNIFICANCE OF PGMS**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	ENTSO-E, EUTurbines, CogenEurope	Article 5	The stakeholders' proposal is based on the GC ESC Expert Group "Mixed Customer Sites", which was formed to assess a solution to the issue of determination of significance. The proposal introduces a threshold (with a default value of 10MW, which can be varied on a national basis) below which the categorisation of generators will be on the basis of their size alone.	Agree	ACER acknowledges the need to remove the voltage threshold below a certain maximum capacity. Properly adjusted voltage criteria will adequately reflect significance of smaller PGMS, while still capturing the large PGMS' impact on the system.
NC RfG	EUTurbines, CogenEurope	Article 5	The stakeholders propose that the requirements described in NC DC will be applicable to power generating module which will not export power to the grid under any condition; requirements described in the present regulation do not apply to such PGM. PGMS that are expected to export power to the grid below the threshold applicable for Type A or in general to have limited power exported to the electrical system (below 30% of the installed power) will be subject to specific requirements.	Disagree	NC RfG provides for capabilities for PGMS in order to support the electricity system. It is important that the requirements applied to the PGMS are proportionate to the maximum capacity of the PGM and are not influenced by the presence or absence of demand behind a connection point.
NC RfG	IFIEC Europe, Green Power Denmark, EU DSO, Syndicat des Energies Renouvelables, Enel S.p.A.	Recital 10, Article 5	The stakeholders propose to remove voltage criteria for all types.	Partly agree	ACER acknowledges the need to modify the voltage criteria for the determination of significance. Nevertheless, properly adjusted voltage criteria should adequately reflect significance of smaller PGMS, while still capturing the large PGMS' impact on the system.
NC RfG	Swedenergy	Article 5	The stakeholder proposes to allow the possibility for national regulatory authorities (NRAs) to decide on the application of voltage criteria.	Partly agree	ACER acknowledges the need to modify the voltage criteria for the determination of significance. NRAs should have a role in setting specific criteria based on the national specificities.
NC RfG	VGBE, Undisclosed stakeholder	Article 5	The stakeholders propose to remove voltage criteria at the connection point for all types. Furthermore, one stakeholder suggests replacing the limit for the maximum capacity threshold for Type B with respective ranges, whereas another stakeholder proposes to replace the limit for the maximum capacity threshold for all types with respective ranges. The range for Type B PGMS is proposed to start at 100kW. Another stakeholder proposes that for the use of this classification in the operational regulations such as the system operation guideline (SOGL) and the network code emergency and restoration (E&R NC), the lowest range for Type B can be changed to 10 kW. This is proposed for Member States that want to keep the old thresholds (which are currently below 100kW) in the SOGL and E&R NC.	Partly agree	ACER acknowledges the need to modify the voltage criteria for the determination of significance. Nevertheless, properly adjusted voltage criteria should adequately reflect significance of smaller PGMS, while still capturing the large PGMS' impact on the system. As regards to the determination of significance of type A PGMS, it is purposeful to harmonise the threshold of maximum capacity. It will provide for economies of scale for mass-market products and thus the more efficient rollout of renewable energy sources and storage. However, the harmonisation of banding values would bring the claimed economies of scale only if married with associated full harmonisation of type A requirements.
NC RfG	CharIN	Article 5, Article 13, Article 30(1), Article 40(1), Article 41(1)	The stakeholder proposes to introduce an additional type A0 for PGMS with connection point below 1 kV and maximum capacity between 0,8 kW and 15kW (limited to 7.4kW for single phase) with corresponding rules on demonstration of compliance. PGMS with connection point below 110 kV and maximum capacity of 0,8 kW or more and up to type B lower limit (other than connection points under type A0) should be type A. No additional changes are proposed for other types, apart from the consideration that there should be European harmonisation of capacity thresholds for all four types. No concrete capacity thresholds are given.	Partly agree	ACER acknowledges the need to remove the voltage threshold below a certain maximum capacity. Properly adjusted voltage criteria will adequately reflect significance of smaller PGMS, while still capturing the large PGMS' impact on the system. As regards to maximum capacity criteria, it is purposeful to harmonise the threshold for smaller PGMS. However, the harmonisation of banding values would bring the claimed economies of scale only if married with associated full harmonisation of type A requirements. Introduction of new types of PGMS should be followed by a clear indication of applicable technical requirements for each of those types.
NC RfG	Oesterreichs Energie	Article 5	The stakeholder proposes that, apart from having connection point at 110kV or above, type D PGMS should in addition have maximum capacity above or equal to 5 MW.	Partly agree	ACER acknowledges the need to remove the voltage threshold below a certain maximum capacity. Properly adjusted voltage criteria will adequately reflect significance of smaller PGMS, while still capturing the large PGMS' impact on the system.



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views
NC RfG	Edison S.p.A., EUROGEN, EUGINE	Article 5	The stakeholder proposes to remove voltage criteria for all types. In addition, the stakeholder proposes to introduce intermediate type A+ with a limit for maximum capacity threshold from which a power-generating module is of type A+ of 0.1 MW. Furthermore, the limit for maximum capacity threshold from which a power-generating module is of type B is proposed to be set, for Continental Europe, at 0.6 MW instead of 1 MW.  In addition, two stakeholders propose to fix the capacity threshold from which a power-generating module is of type B at 0.1 MW.	Partly agree  ACER acknowledges the need to modify the voltage criteria for the determination of significance. Nevertheless, properly adjusted voltage criteria should adequately reflect significance of smaller PGMs, while still capturing the large PGMs' impact on the system.  As regards to the determination of significance of type A PGMs, it is purposeful to harmonise the threshold of maximum capacity. However, the harmonisation of banding values would bring the claimed economies of scale only if married with associated full harmonisation of type A requirements.
NC RfG	Bundesverband Solarwirtschaft e.V.	Article 5	The stakeholder proposes to remove voltage criteria for all types. In addition, the stakeholder proposes to fix the capacity threshold from which a power-generating module is of type B for Continental Europe at 0.5 MW. In addition, it is proposed that Member States should not derogate from the values set out for Type A power-generating modules. Where such derogations exist, they should be harmonised not later than one year after entry of force of this regulation.	Partly agree  ACER acknowledges the need to modify the voltage criteria for the determination of significance. Nevertheless, properly adjusted voltage criteria should adequately reflect significance of smaller PGMs, while still capturing the large PGMs' impact on the system.  As regards to maximum capacity criteria, it is purposeful to harmonise the threshold for smaller PGMs. However, the harmonisation of banding values would bring the claimed economies of scale only if married with associated full harmonisation of type A requirements.
NC RfG	Undisclosed stakeholder	Article 5	The stakeholder proposes to fix maximum capacity thresholds for all PGM types at the current values according to Table 1. In addition, it is proposed that adoption of thresholds different from those set out in Table 1 must be justified by the TSO/DNO of each Member State and approved by the competent EU authority.	Partly agree  As regards to maximum capacity criteria, it is purposeful to harmonise the threshold of maximum capacity. It will provide for economies of scale for mass-market products and thus the more efficient rollout of renewable energy sources and storage. However, the harmonisation of banding values would bring the claimed economies of scale only if married with associated full harmonisation of type A requirements.
NC RfG	SolarPower Europe	Article 5	The stakeholder proposes to remove voltage criteria for types A and B. In addition, the stakeholder proposes to fix the capacity threshold from which a power-generating module is of type B for Continental Europe at 0.5 MW. In addition, if a Member State deems it necessary to introduce the criterion "connection point at a voltage level at 110kV or above" for type APGMs larger than 15 MW, to make it a type C or D type PGM, it has the option to do so.	Partly agree  ACER acknowledges the need to remove the voltage threshold below a certain maximum capacity. Properly adjusted voltage criteria will adequately reflect significance of smaller PGMs, while still capturing the large PGMs' impact on the system.  As regards to the determination of significance of type A PGMs, it is purposeful to harmonise the threshold of maximum capacity. However, the harmonisation of banding values would bring the claimed economies of scale only if married with associated full harmonisation of type A requirements.
NC RfG	SmartEn	Article 5	The stakeholder proposes to remove voltage criteria for all types. In addition, the stakeholder proposes to introduce 5 sub-categories of A PGMs with determined capacity range criteria. Furthermore, the stakeholder proposes to fix maximum capacity thresholds for all PGM types at the current values according to Table 1.	Partly agree  ACER acknowledges the need to modify the voltage criteria for the determination of significance. Nevertheless, properly adjusted voltage criteria should adequately reflect significance of smaller PGMs, while still capturing the large PGMs' impact on the system.  Introduction of new types of PGMs should be followed by a clear indication of applicable technical requirements and demonstration of compliance rules for each of those types.
NC RfG	WindEurope	Article 5	The stakeholder proposes to address the situation that where power generating modules subject to NC RfG are modified such that their maximum capacity or the voltage level of their connection point crosses the threshold from which a power generator module is of type B, C and D. In this case, according to the stakeholder, those power generating modules must then comply with the requirements of NC RfG applicable to the type within which the maximum capacity or voltage level of their connection point now lies.	Disagree  ACER considers that subsequent PGM modifications are to be tackled by improved legal text on the significant modernisation (Articles 4 and 4(a)).

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	Eurelectric	Article 5	<p>The stakeholder proposes that the voltage of 110kV should be used unless the regulatory authority decides something else. According to the stakeholder, the voltage of 110kV is not suitable in all Member States, so it should be possible for the regulatory authority to specify a different voltage level that indicates which production facilities are to be counted as type D regardless of size. Or as an alternative, remove the voltage criterion.</p> <p>Furthermore, it is proposed in the case of electricity generation modules belonging to self-consumption installations without surplus, the significance of such modules should be assessed, on an aggregate basis where applicable, exclusively by the maximum capacity without considering the voltage of the connection point of the associated demand-side installation. The significance of the MCS will be considered as the access and connection permit in those installation which the exceeding energy is below of the 30% of the total installation capacity.</p>	Partly agree	<p>ACER acknowledges the need to modify the voltage criteria for the determination of significance. National Regulatory authorities should have a role in setting specific criteria based on the national specificities.</p> <p>In addition, NC RfG provides for capabilities for PGMs in order to support the electricity system. It is important that the requirements applied to the PGMs are proportionate to the maximum capacity of the PGM and are not influenced by the presence or absence of demand behind a connection point.</p>
NC RfG	Undisclosed stakeholder	Article 5, Article 14, Article 17, Article 20, other affected articles	<p>The stakeholder proposes to remove voltage criteria for all types. In addition, the stakeholder proposes to remove type B from the NC RfG and base the determination of significance on the maximum export power capacity. In addition, the stakeholder proposes to remove type B from the NC RfG and base the determination of significance on the maximum export power capacity.</p>	Partly agree	<p>ACER acknowledges the need to modify the voltage criteria for the determination of significance. Nevertheless, properly adjusted voltage criteria should adequately reflect significance of smaller PGMs, while still capturing the large PGMs' impact on the system.</p> <p>Removal of any type of PGMs should be followed by a clear indication of subsequent changes to technical requirements and demonstration of compliance rules.</p>
NC RfG	Gunnar Kaestle	Article 5	<p>The stakeholder proposes to reshape the limits of thresholds between different types that these follow topological boundaries, e.g. the LV/MV substation or the MV/HV substation. The stakeholder emphasises that to clearly differentiate between low voltage units, and maybe medium voltage units from those at higher voltage levels, the voltage level is the most important not the power criterion.</p>	Partly agree	<p>ACER acknowledges the need to modify the voltage criteria for the determination of significance. Nevertheless, properly adjusted voltage criteria should adequately reflect significance of smaller PGMs, while still capturing the large PGMs' impact on the system.</p>
NC RfG	VW Group	Article 5	<p>The stakeholder proposes to remove voltage criteria for types A and B. In addition, the stakeholder proposes to introduce 4 sub-categories of A PGMs with determined capacity range criteria. Furthermore, the stakeholder proposes to fix maximum capacity thresholds for all PGM types at the current values according to Table 1.</p>	Partly agree	<p>ACER acknowledges the need to remove the voltage threshold below a certain maximum capacity. Properly adjusted voltage criteria will adequately reflect significance of smaller PGMs, while still capturing the large PGMs' impact on the system.</p> <p>Introduction of new types of PGMs should be followed by a clear indication of applicable technical requirements and demonstration of compliance rules for each of those types.</p>



**5. MIXED CUSTOMER SITES**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	Bundesverband Solarwirtschaft eV, SolarPower Europe, Svensk Solenergi	Article 6	The stakeholders proposed to classify MCS based on in feed capacity, ensuring that PGM requirements are the same for a directly DSO connected unit and for a MCS connected unit.	Partly agree	PGM requirements should be the same independent of whether a plant is connected to a MCS or to the RSO's network. Furthermore, properly adjusted voltage criteria will adequately reflect significance of smaller PGMs, while still capturing the large PGMs' impact on the system.
NC RfG	CogenEurope	Article 5	The stakeholder argued that power generating modules not exporting energy are exempted from complying with NC RfG and are ruled only basing on NC DC. Power generating modules exporting energy with a capacity lower than the minimum threshold for type A or lower than 30% of installed power should be classified according to a reference power agreed with the relevant system operator	Disagree	NC RfG provides for capabilities for PGMs in order to support the electricity system. ACER considers that it is important that the requirements applied to the PGMs are proportionate to the maximum capacity of the PGM, as specified in the connection agreement or as agreed between the relevant system operator and the power-generating facility owner.
NC RfG	CogenEurope	Article 6	The stakeholder proposed to have more clarity about the specification for cogen units exemptions.	Partly agree	ACER considers that the current wording of Article 6(4) sufficiently captures the intention for exemptions of combined heat and power generating facilities requirements relating to the capability to maintain constant active power output or to modulate active power output.
NC RfG	Eurelectric, VGBE, undisclosed stakeholder	Article 2	The stakeholders proposed to add a new definition of MCS as a site with one or several power-generating modules and consumption behind a single connection point to the grid. For the avoidance of doubt, the auxiliary services of the power -generating module are not considered as consumption in this definition. The definition applies to both CDSO and non CDSO sites.	Partly agree	In ACER's view, PGM requirements should be the same independent of whether a plant is connected to a MCS or to the RSO's network. However, capacities of units of different classes should not be aggregated for the purpose of the determination of significance.
NC RfG	Eurelectric	Article 5	The stakeholder considers that significance of MCS should be based on connection permit when the exceeding energy is below 30% of installation capacity.	Disagree	NC RfG provides for capabilities for PGMs in order to support the electricity system. ACER considers that it is important that the requirements applied to the PGMs are proportionate to the maximum capacity of the PGM, as specified in the connection agreement or as agreed between the relevant system operator and the power-generating facility owner.
NC RfG	Europgen	Article 3(2)	The stakeholder considers that power generating facilities that in normal conditions absorb power from the network should be exempted by the NC RfG provided that they are capable to switch into islanding operation, they can limit the amount of exported energy to max 30% of the total installed capacity and they are equipped with a protection device for rapid disconnection.	Disagree	
NC RfG	EUTurbines	Article 5	Application of NC DC only to power generating module that does not export energy into the network. Specific requirements for export capacity below 0,8 kW or below 30% installed capacity.	Disagree	
NC RfG	SmartEn	Article 5	The stakeholder proposed that the significance for MCS is based on export power at PCC.	Disagree	
NC RfG	SolarPower Europe	Article 6	For existing MCS, requirements should be applied to connection point of a PGM within the MCS.	Disagree	Provisions for existing PGMs are defined in NC RfG.
NC RfG	Svensk Solenergi	Article 6	The stakeholder proposed that the voltage significance criteria does not apply to MCS.	Partly agree	ACER considers that PGM requirements should be the same independent of whether a plant is connected to a MCS or to the RSO's network. Furthermore, properly adjusted voltage criteria will adequately reflect significance of smaller PGMs, while still capturing the large PGMs' impact on the system.

**6. REQUIREMENTS FOR TYPE A PGMS**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	Bundesverband Solarwirtschaft eV, Enel SpA.	Recital 7, recital 11	The stakeholders suggested harmonising connection requirements to promote mass market.	Partly agree	ACER in principle agrees that a harmonisation of requirements for mass-market smaller-sized PGMS would facilitate the acceptance of Type A unit certificates all over the EU and reduce the costs for the energy transition by bringing economies of scale. However, full harmonisation of type A requirements would bring the claimed economies of scale only if married with the associated harmonisation of banding values which is more challenging. This is because principles of proportionality and subsidiarity need to be taken into account whilst Member States have different generation mixes, as well as, delineations between transmission and distribution systems. Also, some requirements, e.g. related to the electromagnetic compatibility, are out of scope of the NC RfG and tackled by the relevant standards.
NC RfG	Enercon, VGBE, Undisclosed stakeholder	New paragraph after Article 2(65)	The stakeholders propose to include a definition for Rate-of-change-of-frequency.	Disagree	Recital 25 already includes the phrase rate of change of frequency. Furthermore, the technical capability to withstand specific rate-of-change-of-frequency is specified in Article 13.
NC RfG	Cenelec	Article 13(8)	The stakeholder proposed to: <ul style="list-style-type: none"> <li>- Introduce UVRT capability as in type B,</li> <li>- Introduce OVRT capability,</li> <li>- Introduce phase jump capability.</li> </ul>	Partly agree	See proposed amendments from ENTSO-E regarding low-voltage-fault-ride-through and high-voltage-ride through and relevant section on advanced capabilities regarding the introduction of phase-jump capability.
NC RfG	Undisclosed stakeholder, Eurelectric, VGBE	Article 13(1)	The stakeholders propose to set RoCoF requirements at 1 Hz/s. TSOs should propose for each SA a frequency profile with moderate nadir or zenith. If higher RoCoF can be borne, the owner should inform the TSOs.	Partly agree	ACER acknowledges that, especially large, SPGMs might not be able to continue stable operation following high values of RoCoF. However, PPMs should be able to support the system at higher values of RoCoF.
NC RfG	Edison S.p.A., Eurelectric, CogenEurope	New after Article 13(7)	The stakeholder proposes new provisions for type A+ namely: <ul style="list-style-type: none"> <li>a) Fault Ride Through (FRT),</li> <li>b) Post Fault Active Power Recovery (PFAPR),</li> <li>c) Active Power Control (APC),</li> <li>d) undervoltage-ride-through (UVRT)</li> <li>e) overvoltage-ride-through (OVRT).</li> </ul>	Partly agree	See proposed amendments from ENTSO-E regarding low-voltage-fault-ride-through and high-voltage-ride through and post fault active power recovery.
NC RfG	ENTSO-E	Article 13(1)	The stakeholder proposes new RoCoF requirements: <ul style="list-style-type: none"> <li>±4,0 Hz/s over a period of 0,25 s</li> <li>±2,0 Hz/s over a period of 0,5 s</li> <li>±1,5 Hz/s over a period of 1 s</li> <li>±1,25 Hz/s over a period of 2 s</li> </ul> Plus proper frequency profiles to be respected.	Partly agree	ACER acknowledges that, especially large, SPGMs might not be able to continue stable operation following high values of RoCoF. However, PPMs should be able to support the system at higher values of RoCoF.
NC RfG	ENTSO-E	New article for type A synchronous generating modules before article 17	The stakeholder proposes to set FRT for type A generating module as exhaustive requirements, applicable upon request by the relevant TSO.	Agree	The number of installed Type A generation has reached a level where the operation of this equipment has a major impact on system security.
NC RfG	ENTSO-E	New article for type A power park modules before article 20	FRT for type A power park module as compulsory exhaustive requirements.	Agree	As the type A SPGM penetration is not comparable to the general and expected future type A PPM penetration, ACER considers that the need for FRT requirements for type A SPGM is currently sufficient to include as a "non-mandatory requirement" in the NC RfG. For system security reasons, like preventing large-scale loss of generation, ACER proposes to extend the FRT requirement to type A PPMs. This requirement demands the ability of the PPM to remain connected to the system during faults within a defined voltage-time profile, and thus avoiding disconnection of the power generating module.
NC RfG	EU DSO	New paragraph after Article 13(7)	The stakeholder suggests adding a new paragraph providing that reactive power capability is specified by the relevant system operator and compulsory voltage control that can modulate reactive and/or active power, as well as reactive power control and power factor control.	Agree	ACER considers that this requirement clarifies the stability requirement over the entire range of the voltage control.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	Eurelectric	Article 13(6)	The stakeholder suggests to include standardised interfaces with proper communication standards defined in a TCM proposed by EU DSO and approved by ACER.	Disagree	Standardised interface may indeed help, but such interfaces have been already developed by standardization bodies across Europe and the standards may thus be better defined at CENELEC.
NC RfG	Eurelectric	Article 13(7)	The power factor of the energy supplied to the distribution company's network must be as close as possible to unity and, in any case, greater than 0.98 when the installation operates at powers greater than 25 per cent of its nominal power.	Disagree	System operation issues are outside the scope of grid connection codes.
NC RfG	Europgen	New article before Article 13	The stakeholder proposes a new article defining minimum cyber security requirements for PGMs. No legal text is provided.	Partly agree	ACER considers that cybersecurity requirements are indeed relevant, but the grid connection network codes do not need to replicate this as the EC Network Code on Cybersecurity will define their scope and applicability.
NC RfG	Osterreichs Energie	Article 13(1)	The stakeholder proposes the following RoCoF requirements: ±2,0 Hz/s over a period of 0,5 s ±1,5 Hz/s over a period of 1 s ±1,25 Hz/s over a period of 2 s.	Partly agree	ACER acknowledges that, especially large, SPGMs might not be able to continue stable operation following high values of RoCoF. However, PPMs should be able to support the system at higher values of RoCoF.
NC RfG	Europgen	Article 13(1)	The stakeholder proposes to set maximum RoCoF at 2 Hz/s.	Partly agree	
NC RfG	EUTurbines, undisclosed stakeholder	Article 13(1)	The stakeholders propose to set maximum RoCoF at 1 Hz/s.	Partly agree	

**7. SIGNIFICANT MODERNISATION**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG & NC DC	ENTSO-E, Swedenergy, EUTurbines	Article 4(1)	The amended GC NCs should clarify the definition of significant modernisation for a better harmonisation and to minimise legal uncertainties.	Agree	ACER considers that the current wording of the GC NCs is unclear and may lead to several interpretations. The modifications of existing PGMs / demand facilities cumulatively have security implications for the whole European system and a common understanding of the problem is necessary. Specificities between the Member States exist and could be taken into account in the definition of the precise modification criteria which would be defined at the national level on the basis of the general principles specified in the GC NCs.
NC RfG	WindEurope, Swedenergy	Article 4(1)	Supporting the recommended amendment by the EG Criteria for Significant Modernisation.	Agree	
NC RfG	Edison S.p.a.	Article 4(1)	The current approach of Article 4(1) of NC RfG on the definition of significant modernisation, leaving room for different interpretations at national level, is the best suited to take into account national specificities.	Disagree	
NC RfG	Eurelectric	Article 4(1)	Any approach on the definition of significant modernisation should leave room for different interpretations at national level, to take into account national specificities	Agree	The GC ESC's Expert Group contribution should be explored and considered while proposing amendments to the codes.
NC RfG	Swedenergy	Article 4(1)	It is important that the NC RfG specifies an interval for each characteristic change required for a PGM to be covered by the NC RfG. It should be possible to adapt to national needs, but there must also be a specified minimum level of change to avoid great differences.	Agree	The clarification of the definition of significant modernisation and the requirements laid down in the GC NCs which must apply in these cases will allow the definition of coherent principles across Member States. However, given the different requirements of general application defined among Member States, defining strict criteria for significant modernisation in the GC NCs may not be appropriate for some Member States.
NC RfG & NC DC	ENTSO-E, CogenEurope, EUTurbines, undisclosed stakeholder	Article 4(1)	Stakeholders consider that, in case a modernisation of a PGM is notified to a system operator by a system user, the system operator should assess if this modernisation is substantial by considering the electrical characteristics listed in the GC NCs and notify the modernisation to the competent authority which then should decide which requirements of the relevant GC NC should apply and if the existing connection agreement needs to be revised or replaced.	Partly disagree	A case-by-case approach does not seem to be either the most effective solution for dealing with significant modernisations, nor the one allowing the best harmonisation. ACER would rather suggest that each Member State clarifies in one decision (which could be the same as the one regarding the other requirements of general application) the criteria for significant modernisation based on the general criteria (electrical characteristics, ranges of modification) defined in the NC as well as the requirements of the GC NCs that should apply and if the existing connection agreement needs to be revised or replaced.
NC RfG	Bundesverband Solarwirtschaft e.V.	New article before Article 4(5)	Significant modernisation should apply only to type B, C and D PGM. For Type A generators, the new requirements should not apply under any circumstances. That is because these are mass-market products. If a Type A generator fails or is replaced for any other reason in the future, it will automatically be replaced by new mass-market PGM which is compliant with this Regulation. The stakeholder considers that any other wording has a significant risk of deterring especially household customers from repairing faulty PGM if the resulting new requirements are not immediately clear.	Partly agree	In ACER's view, significant modernisation should not be limited to only type C and D PGMs as currently required by the NC RfG. Not to address modifications to Type A units could pose a security risk to the system and significant modernisation criteria should be defined for all the PGMs from type A to D. However, smaller units are indeed typically standardised products (off-the-shelf) which should not be unduly burdened with bureaucracy. Currently, it is assumed that smaller units when broken down receive a replacement of parts (e.g., converter) which are compliant with the GC NCs because the manufacturers/retailers do not keep stocks of old and outdated equipment. It is, however, a different case should a small PGM be replaced with a unit with a maximum capacity which is larger than that specified in the connection agreement. In this case, it is clear that the unit should be assessed for the criteria/principles determining significant modernisation. Individual approaches should in general be avoided to ensure a better harmonisation.
NC RfG	Undisclosed stakeholder, VGBE	Article 4(1)	Stakeholders proposed that significant modernisation should apply to all PGMs (type A, B, C and D).	Agree	ACER agrees that significant modernisation should not be limited to only type C and D PGMs as currently required by the NC RfG.



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views
NC RfG	ENTSO-E	New paragraph after article 4(1)(a)(iii)	<p>The stakeholder proposed that a significant modernisation of a PGM should be defined according to the following parameters:</p> <ul style="list-style-type: none"> <li>- a percentage increase above the existing maximum capacity of the PGM to be defined by the relevant system operator; or</li> <li>- a percentage deviation from the existing reactive power capability of the PGM to be defined by the relevant system operator in coordination with the relevant TSO; or</li> <li>- a change in frequency stability and active power management capabilities to be defined by the relevant TSO; or</li> </ul> <p>a change in voltage stability and reactive power management capabilities to be defined by the relevant system operator in coordination with the relevant TSO.</p>	Partly agree
NC RfG	EU DSO ENTITY	New paragraph after article 4(1)(a)(iii)	<p>The stakeholder proposed that a significant modernisation of a PGM should be defined according to the following parameters:</p> <ul style="list-style-type: none"> <li>- a percentage increase above the existing maximum capacity of the PGM to be defined by the relevant system operator; or</li> <li>- a percentage deviation from the existing reactive power capability of the PGM to be defined by the relevant system operator in coordination with the relevant TSO; or</li> <li>- a change in frequency stability and active power management capabilities to be defined by the relevant TSO.</li> </ul>	Partly agree
NC RfG	Bundesverband Solarwirtschaft e.V.	Article 4(2)	<p>The stakeholder proposed that a significant modernisation of a PGM should be defined according to the following parameters:</p> <ul style="list-style-type: none"> <li>- the replacement of the primary generator,</li> <li>- the replacement of more than 75 % of the PGM (related to its original capacity),</li> <li>- the increase by more than 10 % of the PGM's capacity.</li> </ul>	Partly agree
NC RfG	CogenEurope, EUTurbines	Article 4(1)	<p>The stakeholder proposed that a significant modernisation of a PGM should be defined according to the following parameters:</p> <ul style="list-style-type: none"> <li>- a percentage increase above the existing maximum capacity (Pmax) of the PGM to be defined by the relevant system operator except in case the increase happens when adding a new separate generating unit to the existing installation, in such a case the requirements of the present regulation apply to the new equipment(s), while applicability of the new requirement to the existing unit should be derogated or subject to CBA and feasibility evaluation;</li> <li>- a relevant percentage deviation from the existing required reactive capability of the PGM to be defined by the relevant system operator in coordination with the relevant TSO; or</li> <li>- a change in frequency stability and active power management capabilities to be defined by the relevant TSO.</li> </ul>	Partly agree
NC RfG	VGBE	Article 4(1)	<p>The stakeholder proposed that a significant modernisation of a PGM should be defined according to the following parameters:</p> <ul style="list-style-type: none"> <li>- a percentage increase above the existing maximum capacity (Pmax) of the PGM to be defined by the relevant system operator in the range of 15% to 30%; or</li> <li>- a percentage deviation from the existing required reactive capability of the PGM to be defined by the relevant system operator in coordination with the relevant TSO in the range of 15% to 30%; or</li> <li>- a change in frequency stability (such as inertia) and active power management capabilities to be defined by the relevant TSO.</li> </ul>	Partly agree

Electrical characteristics to consider for the definition of a significant modernisation should be defined in the GC NCs based on the potential impact of the on the safety of the system. Other parameters could be considered.

In addition, where possible, ACER considers that a range of potential values (to be specified at national level) of the thresholds concerning the significant modernisation criteria should be defined in the GC NCs to ensure both that modifications with a significant impact for the system (above the threshold) are necessarily considered as substantial and so that minor modifications (below the threshold) are not considered as substantial. For instance, a threshold of 15 % of an increase in the capacity of a PPM is mentioned in Article 5 of the Regulation 2022/2577 an such a threshold could be considered for the definition of significant modernisation as well.

The following key electrical characteristics of the PGM seem important to consider when defining the criteria for significant modernisation:

- the maximum capacity of the PGM,
- the frequency stability and active power management of the PGM,
- the reactive power capability of the PGM,
- change of components/assets of a PGM.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	Undisclosed stakeholder	Article 4(1)	A modernisation should be considered significant in case electrical and grid-dynamic interaction have been significantly altered. In this regard, an increase of the capacity of a PGM above a certain threshold seems to be the relevant criteria.	Partly agree	
NC RfG	Eurelectric, Edison S.p.A	Article 4(1)	Electrical characteristics that lead to an increased ability to provide a particular service should be considered (e.g. the frequency stability and the active power management, the reactive power capability and/or the short-circuit current of the PGM/demand facility) and not the simple change of components/assets and/or the maximum capacity of the units since these latter interventions do not fundamentally impact the ability to provide a service.	Disagree	
NC RfG & NC DC	ENTSO-E, EU DSO ENTITY, undisclosed stakeholder, Eurelectric, EUTurbines, VGBE	New articles after article 4(7) or Article 4(2)	Where parts are added or replaced for an existing PGM or transmission connected demand or distribution facilities those new parts should be compliant with the requirements of the GC NCs, not limit the eventual compliance of the PGM if compliance with the GC NCs is required in the future. Maintenance activities or spare parts are not concerned.	Partly agree	The compliance of new parts should be required as far as possible so as not to prevent compliance with the GC NCs in the event of subsequent additional modifications. If the addition / replacement of a part / component does not trigger a significant modernisation criterion and if the compliance of the new part /component implies the need to retrofit other parts of the PGM / demand facility, the compliance of this new part should not be required. ACER further considers that maintenance and spare parts should not be included.
NC RfG	Swedenergy	Article 4(1)	Modernisations should not limit the eventual compliance of the PGM if compliance with the GC NCs is required in the future.	Agree	
NC RfG	Bundesverband Solarwirtschaft e.V.	Article 4(1)	The stakeholder proposes that existing power-generating modules should not be subject to the requirements of the NC RfG, if: <ul style="list-style-type: none"> <li>- there is a replacement of components within the PGM by equivalent components due to defects/ maintenance (this includes an exchange with new equivalent components and repair), provided the interoperability within the PPM is given and the maximum infeed capacity as agreed with the system operator is not increased;</li> <li>- the original requirements applied to the plant are still fulfilled; and</li> <li>- if new components are used for replacement which are capable of fulfilling the NC RfG requirements.</li> </ul>	Partly agree	In ACER's view, existing PGMs should not be subject to the NC RfG unless they are undergoing a modernisation increasing significantly their impact on system security.
NC RfG	CogenEurope	New articles after article 4(7)	Parts replacement should not trigger new requirements in case the replacement is aimed at improving efficiency, reducing emissions (overall plant emissions as well), permitting process optimization. Forced alignment to new requirements should not be a limitation to the priority target of decarbonization and safety. In addition, the stakeholder considers that emission requirements and efficiency target are continuously evolving and plant facilities are continuously upgrading. Alignment to new requirement would add an unnecessary burden considering cost associated to modification and re-certification for units that are not expected to change their own behaviour.	Disagree	The NC RfG should ensure that proportionate requirements apply to system users with respect to their impact on the network and on the safety of the network. ACER considers that modernisations that do not result in any change in the impact of the PGM on the network would therefore not fall within the definition of significant modernisation.
NC RfG	Eurelectric, undisclosed stakeholder	Article 4(2) or new article after article 4(7)	The notions maintenance and spare parts is to be considered as the definition used in common industrial practices and in international standards. Maintenance activities are commonly defined as "activities to retain or maintain the original required function of the item" and a spare part as "an item to replace a corresponding item in order to retain or maintain the original required function of the item". This definition should also include the replacement of huge parts of the installation, which can also be considered as spare parts.	Agree	ACER agrees that the definitions used in the standards are relevant to define spare parts and maintenance activities.
NC RfG	Bundesverband Solarwirtschaft e.V.	Article 4(3)	In case of a significant modernisation of parts of the PGM, new requirements to components of the PGM that are not part of the modernisation, have to be economically proportionate, i.e. that the costs for fulfilling the additional requirements do not exceed 10% of the modernisation costs.	Partly agree	ACER considers that the requirements should be proportionate in order not to excessively constrain PGMs. However, a significant modernisation should be defined at the PGM level. Then for each significant modernisation, it should be defined which requirements apply and which part of the PGM should be compliant (only the new parts or the whole PGM) in order to apply proportionate requirements with regards to the safety of the system and the costs for the PGM.
NC RfG	Swedenergy	Article 4(1)	The stakeholder proposed that only the modernised part of the facility must meet the NC RfG requirements.	Disagree	
NC RfG	Swedenergy	Article 4(1)	The NC RfG should provide guidance to the NRAs / competent authority on which articles of the NC RfG should be applied in relation to the extent of the modernisation.	Agree	



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC DC	ENTSO-E	New paragraph after article 4(1)(a)(iii)	<p>The stakeholder proposed that a significant modernisation of a transmission-connected demand or distribution facility should be defined according to the following parameters:</p> <ul style="list-style-type: none"> <li>- a percentage increase above the existing maximum import or export capability to be defined by the relevant TSO;</li> <li>- a percentage increase, to be defined by the relevant TSO, in the short-circuit current contribution; or</li> <li>- an increase, to be defined by the relevant TSO, in the range of reactive power exchange.</li> </ul> <p>In addition:</p> <ul style="list-style-type: none"> <li>- in the case of a distribution system (including CDS) the replacement of a percentage of the equipment comprising that distribution system, the percentage threshold being defined by the relevant TSO;</li> <li>- in the case of a demand unit providing demand response services, any change in the range of frequencies or voltages over which the demand unit can operate and a percentage deviation, to be defined by the relevant system operator in co-ordination with the relevant TSO, from the demand response capacity notified to the relevant system operator.</li> </ul>	Partly agree	<p>Electrical characteristics to consider for the definition of a significant modernisation should be defined in the GC NSs based on the potential impact of the demand facility / distribution facility on the safety of the system. Other parameters could be considered.</p> <p>In addition, where possible, a range of potential values (to be specified at national level) of the thresholds concerning the significant modernisation criteria should be defined in the GC NCs to ensure both that modifications with a significant impact for the system (above the threshold) are necessarily considered as substantial and so that minor modifications (below the threshold) are not considered as substantial.</p> <p>ACER considers that the following key electrical characteristics of the demand facility/distribution system seem important to consider when defining the criteria for significant modernisation:</p> <ol style="list-style-type: none"> <li>a) the maximum capacity of the demand facility;</li> <li>b) the frequency stability and active power management of the demand unit</li> <li>c) the reactive power capability of the demand facility;</li> <li>d) the short-circuit current of the demand facility/distribution facility; and</li> <li>e) change of components/assets of a demand facility/distribution system.</li> </ol>
NC DC	EU DSO ENTITY	New paragraph after article 4(1)(b)	<p>The stakeholder proposed that a significant modernisation of a transmission-connected demand or distribution facility should be defined according to the following parameters:</p> <ul style="list-style-type: none"> <li>- in the case of a transmission-connected demand facility and a transmission-connected distribution facility: <ul style="list-style-type: none"> <li>o a percentage increase, to be defined by the relevant TSO, from the total main demand equipment capacity (in MVA) affording the connection; or</li> <li>o a percentage increase, to be defined by the relevant TSO, in the short-circuit current contribution from the demand facility or distribution facility; or</li> <li>o an increase, to be defined by the relevant TSO, in the range of reactive power exchange with the facility.</li> </ul> </li> <li>- in the case of a distribution system (including closed distribution systems) the replacement of more than 95% of the assets comprising that distribution system.</li> <li>- in the case of a demand unit that can be used by a demand facility or closed distribution system to provide demand response services: <ul style="list-style-type: none"> <li>o any change in the range of frequencies over which the demand unit can operate,</li> <li>o a percentage deviation, to be defined by the relevant system operator in co-ordination with the relevant TSO, from the demand response capacity notified to the relevant system operator.</li> </ul> </li> </ul>	Partly agree	
NC RfG	EUTurbines	Article 4(1)(b)	<p>The stakeholder considers that applying requirements to existing units should be based on CBA and feasibility study to avoid high costs and remunerate existing units to ensure the certainties of the investment to the plant owner.</p>	Disagree	<p>The current version of the NC RfG already requires the TSO to carry out a CBA in order to make existing PGMs subject to all or some of the requirements. Regarding the remuneration / compensation for the retrofitting of existing units, this should be decided at Member States' level.</p>
NC RfG	Eurelectric	Article 4(2)(b)	<p>In the case of introducing or tightening the requirements for offshore units, there should be an exemption from the application of new requirements for those units that have signed a final and binding contract for the purchase of the main generating plant – like in NC RfG art. 4(2)(b).</p>	Partly agree	<p>The provision in Article 4(2)(b) applies to all PGMs. Furthermore, the definition of existing PGMs is and should be the same for all technologies.</p>

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	VGBE	Article 4(2)	The stakeholder proposed to delete the sentence "A Member State may provide that in specified circumstances the regulatory authority may determine whether the power-generating module is to be considered an existing power-generating module or a new power-generating module" as it considers that it is not useful in the next version of the NC RfG.	Disagree	ACER acknowledges that it is highly important to clarify how "new" and "existing" PGMs are defined in new version of NC RfG. However, the mentioned provision is still valid for "new" PGMs in the new version of NC RfG.
NC RfG	VGBE	Article 4(3)	If significant factual changes in circumstances, such as the evolution of system requirements including penetration of renewable energy sources, smart grids, distributed generation or demand response, impose the application of this Regulation to existing power-generating modules, negotiations have to be conducted with the existing power-generating modules to define the costs of the required modifications, the bearer of the costs and the socioeconomical benefits. The cost benefit analysis required in Article 4(3) could be deleted.	Disagree	The current version of the NC RfG already requires carrying out a CBA in order to make existing PGMs subject to all or some of the requirements. Regarding the remuneration / compensation for the retrofitting of existing units, this should be decided at Member State level.

**8. REQUIREMENTS FOR STORAGE AND ELECTROMOBILITY**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	Cenelec	Article 3	The stakeholder proposed to include electrical energy storage modules including electric vehicles as V2G into NC RfG and treat them as PGM, as well as to delete Article 3(2)(d).	Agree	Electricity storage modules have an increasing significance for the power system and have the capability to provide many grid supporting functions. Electric vehicles and associated V2G electric vehicle supply equipment which are capable of injecting energy into the grid are equally to be considered.  Electricity storage modules are considered state of the art and already considered in several national implementations of NC RfG for example VDE-AR-N 4105 in Germany and the European Standard EN 50549.
NC RfG	Cenelec, Eurelectric	Article 13(2)(f)	Several stakeholders proposed to add a paragraph (iii): " <i>in case of electrical energy storage modules in discharging mode at the beginning the event, these shall be capable of switching to charging mode if needed corresponding to the droop.</i> "	Agree	ACER agrees with the proposal, but the concrete legal wording needs to be adapted for clarity and consistency.
NC RfG	Bundesverband Solarwirtschaft eV	Article 5	Bundesverband Solarwirtschaft eV proposes to add a new paragraph (6) setting out: " <i>The relevant system operator shall not require Type A and Type B energy storage facilities to equalize phase-imbalances in non-synchronous mode.</i> "	Disagree	To the extent that ACER understands the proposal, we reject the suggestion that PGM owners should not be required to pay attention to phase imbalance in liaison with the DSO.
NC RfG	Bundesverband Solarwirtschaft eV	Article 13	Bundesverband Solarwirtschaft eV proposes to add a new paragraph (8) aiming to ensure that: " <i>The requirements related to type A PGMs and electrical storage modules in terms of LVRT, LFSM and reactive capability apply at their terminals.</i> "	Disagree	A very significant number of Type A will be connected at LV (depending to the threshold established at national level) and for as long as there are no reactive power requirements on Type A, there is no difference between terminals and connection point. There is good analysis on this in the draft <a href="#">EG report on harmonisation of certification and family grouping</a> . To introduce this amendment would go against the logic throughout the NC RfG.
NC RfG	Bundesverband Solarwirtschaft eV	Article 14	Bundesverband Solarwirtschaft eV proposes to add a new paragraph (6) aiming to ensure that: " <i>Where a power generating module is combined with an energy storage facility, the power-generating facility owner choose to which extend the grid power of the energy storage facility or the combined power of the PGM and the energy storage facility will be limited regarding its injection of energy into the grid. This limitation may be different for different 15-minute intervals of the day and different during particular months. The relevant system operator shall only take into account the actual energy which is to be injected into the grid under ensure a maximum use of the available grid capacity by both, the power-generating facility and the energy storage facility while at the same time allowing both to stay within its limitations when operated alone or combined (dynamic capacity restrictions).</i> "	Disagree	We believe this is unnecessarily complicated and not in line with the rational of the NC RfG. The RSO and PGM owner can agree what the operating conditions are in the usual way. These are commercial, not technical, issues
NC RfG	Bundesverband Solarwirtschaft eV, smarten, VW Group	Recital 9 and new Articles	The stakeholders proposed changes to this section aiming at clarifying that when there are different classes of assets behind a single connection point (e.g. photovoltaic, wind, combined heat and power, stationary storage, and mobile storage) these should not be collected together for the purpose of determining their significance. This is because their generation patterns differ strongly and independently.	Agree	ACER agrees with the concept but the concrete legal wording needs to be adapted for clarity – see the revised recital (9).
NC RfG	Bundesverband Solarwirtschaft eV, smartEn	Article 5	The stakeholders proposed in a new paragraph (5) that bidirectional cars and vehicle chargers should never be considered as type B.	Partly agree	In principle, ACER agrees with the idea that below a certain capacity, bidirectional vehicles and chargers should not bear too-onerous (type B) requirements, but considerations needs to be given to the high capacity NC DC charging stations/chargers. Also, in certain circumstances, e.g. low capacity networks, additional requirements may be required by the system operator and subject to a connection agreement.
NC RfG	smarten, VW Group	Article 13 and Article 14	The stakeholders proposed in a new paragraph (8) in Article 13 and paragraph (6) in Article 14 that electric vehicles and charge points for electric vehicles should be considered Type A in all cases. They should always be assessed on the individual unit level and should not be assessed on a summed level.	Partly agree	Certain electric vehicles and associated charging infrastructure can exceed 1 MW capacity, e.g. ferries, boats, hauler trucks. Nevertheless, ACER has considered harmonisation of requirements for individual electric vehicles and associated charging infrastructure.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views
NC RfG	smartEn	Article 6	<p>The stakeholder proposes in a new paragraph (3) that "Storage power park modules as well as electrical charging parks offering V2G with either on (i.e. AC) or off-board (i.e. DC) converters shall fulfil all the relevant requirements in both generating and consuming operation mode. Both systems are firstly loads to the network and their functionalities as generators should only be considered when their generating capacity is permitted for being activated by the power-generating facility owner or user. They should not be considered as power-generating modules if their generation mode cannot be activated."</p> <p>The stakeholder proposes to add in paragraph (3) after the first comma: "which includes all types of power-generating modules".</p> <p>The stakeholder proposes to clarify at the end of paragraph (3) that it "...also applies to electrical charging parks as vehicles could also be used in emergency cases."</p>	<p>Disagree</p> <p>It would be impossible to trace and ensure compliance in case these assets change owners. Also, in such case the economies of scale would be lost as manufacturers would have to keep a double inventory (compliant and non-compliant assets). Instead, ACER proposes certified products be used across the EU.</p> <p>The first sentence of the concerned paragraph (3) is sufficiently clear already.</p> <p>Similarly, the current wording of paragraph (3) is sufficiently clear while pointing out that individual asset classes could turn out unclear for other asset classes.</p>
NC RfG	smartEn	Article 42	<p>The stakeholder proposes: "Type A AC bidirectional charging compliancy shall be based of individual type-test certificates issued as per Regulation (EC) No 765/2008 regarding the charging station on one side and the Electric Vehicle homologated platform on the other side. But a certification including for instance the data exchange protocol, or system performance criteria, associating the charging station and the Electric Vehicle homologated platform shall be issued."</p>	<p>Partly agree</p> <p>In principle, ACER agrees with the idea, but the wording needs to be adapted for consistency.</p>
NC RfG	VW Group	Article 40	<p>The stakeholder proposed that: "All type A1 and especially bidirectional electric vehicle manufacturer shall be allowed to self-declare European grid code and EN50549-1 conformity through a unified 18marten18 CE declaration process. Member states shall be prohibited to request further certification for Type A1 generation units."</p>	<p>Partly agree</p> <p>ACER agrees that the use of type-test certificates is reasonable for mass market products. Nevertheless, the wording and placement of such provision needs to be adapted for consistency.</p>
NC RfG	CharIN	Article 13	<p>The stakeholder proposes to add a paragraph (8) aiming at defining the storage module maximum capacity using the lowest value between that defined in the technical specification or that limited by software. A similar proposal in made to define the maximum capacity of the facility using energy management system or export power limiter.</p>	<p>Disagree</p> <p>In principle, there is an issue of subsequent tampering with software setting if used for determination of maximum capacity. Moreover, ACER considers that the proposal would reduce the level of harmonisation of requirements that are used by manufacturers.</p>
NC RfG	CharIN	Article 13	<p>The stakeholder proposes to clarify for storage modules that their fulfilment of requirements is dependent on the available energy to feed-in (also considering owner preferences) in a new paragraph (9).</p>	<p>Partly agree</p> <p>ACER agrees with the fact that ESM requirements need to take into account the available energy; however, they cannot be subject to the owner's preferences.</p>
NC RfG	CharIN	Article 13	<p>The stakeholder proposes that for small storage modules, no additional requirements (outside those of NC RfG) may be required.</p>	<p>Disagree</p> <p>Some requirements, e.g. harmonics and electromagnetic compatibility, which are out of scope of the NC RfG and tackled in standards still need to apply.</p>
NC RfG	Several stakeholders (e.g. CogenEurope, ENTSO-E, EU-DSO Entity)	New recital	<p>Several stakeholders propose a new paragraph clarifying the definition of electricity storage that includes electric vehicles.</p>	<p>Disagree</p> <p>Appropriate definitions are considered in Article 2.</p>
NC RfG	CogenEurope	Recital 27	<p>The stakeholder proposes that the development of non-exhaustive requirements is carried involving European standardisation organisations.</p>	<p>Disagree</p> <p>The NC RfG cannot impose such a requirement on the mentioned entities. Nevertheless, ACER understands that non-site specific and non-exhaustive requirements are in any way developed in coordination of European standardisation organisations.</p>
NC RfG	Several stakeholders (e.g. CogenEurope, ENTSO-E, EU-DSO Entity)	New recital	<p>Several stakeholders proposed adding new paragraphs clarifying how the requirements apply to electricity storage module.</p>	<p>Agree</p> <p>ACER agrees with the inclusion on clarifying how the requirements apply to electricity storage modules, but the place and wording is adapted for consistency.</p>
NC RfG	Several stakeholders (e.g. CogenEurope, Undisclosed stakeholder, ENTSO-E, Edison, Enel, Enercon, Eurelectric, EUTurbines, Green Power Denmark, VDE-	Article 1, Article 2, ...	<p>Several stakeholders proposed to consider the changes proposed by the EG Identification of storage devices while including in Article 1 and Article 2 clarifications that the notion of power-generating module includes electricity storage module which can inject and consume electrical energy to and from the network. Also, various definitions on electricity storage and electricity storage module were proposed, as well as, to include the electricity storage modules explicitly in Article 3(1). Also, the stakeholders proposed to remove the non-application to storage devices from Article 3(2). In addition, some stakeholders</p>	<p>Agree</p> <p>ACER agrees with the need to properly define and include the electricity storage modules, as well as, defining their associated capabilities, but the concrete wording should be adapted so as to ensure clarity and coherence.</p>



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
	FNN, VGBE, VW Group, WindEurope)		proposed to define storage equipment and their import/export capacity. Moreover, depending on the individual stakeholder proposal other articles were subject to their proposals to cover requirements on electricity storage modules.		
NC RfG	Several stakeholders (e.g. CogenEurope, ENTSO-E)	Article 6	Several stakeholders proposed to add a new paragraph (6) clarifying that electricity storage modules should be capable of satisfying the requirements of the Regulation irrespective of whether the electricity storage modules inject and consume active power to and from the network.	Agree	ACER agrees on the inclusion of such paragraph, but the concrete wording should be adapted so as to ensure clarity and coherence.
NC RfG	Several stakeholders (CogenEurope, ENTSO-E)	Article 13(2)	Several stakeholders proposed to add a new subparagraph (h) clarifying that an electricity storage module which is absorbing active power during an overfrequency event should increase the level of active power absorbed according to the LFSM-O characteristic, if technically feasible. The electricity storage module should absorb power up to filling the maximum energy that it is able to store, then it may cease consumption. The relevant TSO may define a different characteristic or establish that the electricity storage module when absorbing active power will maintain the absorption level even during the overfrequency event.	Agree	ACER agrees with the inclusion of such paragraph, but the concrete wording should be adapted so as to ensure clarity and coherence.
NC RfG	CogenEurope	Article 13(2)	The stakeholder proposed to add in a new subparagraph (h) clarifying that the TSO can define a different characteristic or establish that the electricity storage module when absorbing active power will maintain the absorption level even during the over frequency event. The stakeholder further proposed that for specific technologies, a specific absorption characteristic may be used in agreement with the system operator and based on technical or other constrains.	Disagree	Allowing for characteristics to be defined differently could lead to non-harmonised requirements and increase the overall costs for reaching the RES targets.
NC RfG	Several stakeholders (CogenEurope, ENTSO-E)	Article 13(2)	Several stakeholders proposed to add to the text below Figure 1a a clarification that in the case of electricity storage modules, Pref should be defined by the relevant system operator either as the actual active power at the moment the LFSM-O threshold is reached or the maximum capacity or maximum consumption capacity.	Agree	ACER agrees on the inclusion of such clarification, but the wording and placement of such requirement should be adapted so as to ensure clarity and coherence.
NC RfG	CogenEurope	Article 13(6)	The stakeholder proposed the electricity storage module be equipped with an input port to cease active power import upon instruction of the relevant system operator.	Partly agree	ACER considers that the PGM should be equipped with a communication interface (input port) in order to reduce (in case of ESM to modulate) active power. This was discussed in a dedicated ACER public workshop <sup>3</sup> .
NC RfG	Several stakeholders (CogenEurope, ENTSO-E)	Article 13, 15	Several stakeholders proposed different approaches to tackle the behaviour of electricity storage modules in underfrequency conditions (LFSM-U) considering their operational mode and other technical limitations.	Agree	Appropriate capabilities for electricity storage modules in underfrequency conditions need to be appropriately tackled. This was discussed in a dedicated ACER public workshop .
NC RfG	Several stakeholders (CogenEurope, ENTSO-E)	Article 14(2)(a)	Several stakeholders proposed a capability of modulating the import of active power following an instruction at the input port of the electricity storage module consuming active power.	Agree	ACER agrees on the inclusion of such paragraph, but the wording and placement should be adapted so as to ensure clarity and coherence.
NC RfG	CogenEurope	Article 15(2)(d)(i)	The stakeholder proposed to add a requirement for the TSO to consider the time needed for some technologies of electricity storage modules to switch from consumption mode to generating mode or vice versa.	Partly agree	In principle, ACER agrees with the idea, but the wording and placement of such requirement should be adapted so as to ensure clarity and coherence. This was discussed in a dedicated ACER public workshop .
NC RfG	Several stakeholders (CogenEurope, ENTSO-E)	Article 48(4)(a)	Several stakeholders proposed to add a text clarifying that the full operating range of an electricity storage module is between maximum consumption capacity and maximum capacity.	Agree	ACER agrees on the inclusion of such paragraph, but the wording and placement of such requirement should be adapted so as to ensure clarity and coherence.
NC RfG	Undisclosed stakeholder	Article 2	The stakeholder proposed including definitions on generator, load and embedded generator.	Disagree	ACER does not see a need to define these widely used terms. In addition, the definitions as proposed seem confusing as both generator and load are defined as energy storage.
NC RfG	Undisclosed stakeholder	Article 3	The stakeholder proposed for the relevant SO to authorise the connection of a mixed asset plant or embedded generator where there is a commitment to not re-export power to the grid that can mitigate grid constraints by providing grid support.	Disagree	Mitigating grid constraints should not be prioritised over the frequency and voltage stability requirements which all generators should comply with.

<sup>3</sup> <https://www.acer.europa.eu/public-events/acer-workshop-electricity-storage>

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	Undisclosed stakeholder	Article 3(2)(d)	The stakeholder proposed to retain the non-applicability of the NC RfG to storage devices when acting as pure loads, including when temporarily re-exporting power to the grid for their own operation.	Disagree	As per the stakeholder's proposal for the definitions of energy storage and energy storage module, the storage is always associated with the subsequent reconversion of the stored energy and injection into the grid. This means that capabilities of energy storage modules should be in the scope of the NC RfG. Storage devices acting temporarily as loads does not mean that their capabilities in terms of requirements should not be defined.
NC RfG	Several stakeholders (ENTSO-E, Edison)	Article 3(2)(d)	Several stakeholders proposed to remove Article 3(2)(d).	Agree	ACER agrees to remove paragraph Article 3(2)(d) and allow for storage devices be covered in the NC RfG.
NC RfG	Undisclosed stakeholder	Article 6	The stakeholder proposed to introduce a new paragraph (3a) setting out that requirements for connection of energy storage devices which are pure loads or embedded generators operating under a commitment to not re-export power to the grid but can provide grid support must be deemed as fulfilled under this Regulation by the relevant system operator, provided that they comply with human safety protection features, such as anti-islanding protection.	Disagree	Storage devices regardless of supplying local network behind the connection point react to system frequency and voltage deviations. Thus, appropriate requirements need to be specified in the NC RfG.
NC RfG	Edison, Eurelectric	Article 5	The stakeholders proposed to add a new paragraph setting out that bi-directional recharging points should be subject on the grid feed-in side to the requirements for generators in this Regulation while being subject to the technical requirements as demand for maximum import capacity within the meaning of Regulation (EU) 2016/1388.	Disagree	ACER considers that all requirements concerning electricity storage and V2G should be addressed in the NC RfG so as to ensure the consistency and clarity of the regulation.
NC RfG	Edison, Eurelectric	Article 5	The stakeholders proposed to add a new paragraph setting out that standalone storage facilities should be assessed taking into account the maximum injection capacity, but in addition they must meet the technical requirements as demand for maximum import capacity for the purposes of Regulation (EU) 2016/1388.	Disagree	The stakeholders did not propose how to tackle the storage facilities in the NC DC. Also, as proposed by many other stakeholders, all requirements for the energy storage should be placed within a single regulation, i.e. NC RfG, so as to ensure clarity.
NC RfG	Mercedes Benz AG	Recitals, various articles	The stakeholder proposed an introduction of pooling mechanism, encompassing an aggregation of small users, in particular EVs.	Disagree	The aggregation of small system users for the purpose of facilitating ancillary services is out of scope of the connection network codes. In line with what was outlined in the ACER Policy Paper, the inclusion of the relevant rules in the System Operation Guideline or future Demand Response Guideline may support better integration of concerned system users providing demand response to the system, because they would apply to all system users and not only to the 'new' units as per the grid connection network codes.
NC RfG	Mercedes Benz AG	Article 5	The stakeholder proposed an introduction of a specific threshold value for EVs set to 135 kW in order to harmonise the underlying requirements in all Member States. Also EVs would form a special class of PGM with distinct technical requirements.	Partly agree	In line with what was outlined in the ACER Policy Paper, ACER agrees that a harmonisation of requirements applicable to EVs is necessary in order to allow for reaching climate objectives. However, modalities of both EVs (V2G and V1G technology) and related charging infrastructure (including that of charging parks) need to be taken into account.
NC RfG	Mercedes Benz AG	Various articles	The stakeholder proposed the data communication to respect the requirements of the Network Code on Cybersecurity.	Partly agree	While it seems clear that the Network Code on Cybersecurity will apply to data exchange, the grid connection network codes do not need to replicate this. The Network Code on Cybersecurity will define its own scope and applicability.
NC RfG	Mercedes Benz AG	Article 13	The stakeholder proposes that an EV should be capable of activating a power frequency response according to the standard IEC 62898-3-3.	Disagree	ACER emphasises that it is up to each individual Member State to adopt an international standard, whereas the EU network codes are directly applicable in all Member States.
NC RfG	Volvo cars, Mercedes Benz AG	Various articles	The stakeholders urged ACER to avoid requiring that each combination of EV and EVSE is tested and certified together to ensure grid code compliance. This would be a cumbersome process discouraging the development of V2G applications.	Agree	ACER agrees that the testing and certification of EV and EVSE should not hamper the adoption of the V2G technology.
NC RfG	20marten, VW Group	Recital 7	The stakeholder proposed to add a sentence to Recital (7) aiming at equal treatment of mass market small DERs on household-level, and stressing that, however, these should not be treated differently throughout the EU.	Partly agree	Mass market products should in principle face same connection requirements across the EU so as to ensure a level playing field and benefit from economies of scale. Nevertheless, ACER considers that this does not mean that the same exact requirements need to be in place in all Member States. This is because some fine tuning of variable parameters can be done during installations so as to accommodate local specificities at the installation site.
NC RfG	VW Group	Article 6	The stakeholder proposes to add a paragraph clarifying that, if technically capable units, e.g. bidirectional cars or backup power units, do not wish to work	Disagree	It would be impossible to trace and ensure compliance in case these assets change owners. Also, in such case the economies of scale would be lost as



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
			in generation mode at a certain place, these units should be considered as loads and do not need to fulfil all the requirements for generators.		manufacturers would have to keep a double inventory (compliant and non-compliant assets). Instead, ACER proposes certified products be used across the EU.

**9. SIMULATION MODELS AND COMPLIANCE MONITORING**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	ENTSO-E, WindEurope, VGBE, undisclosed stakeholder, EUTurbines, Vestas, CogenEurope	Article 15(6)(c), Article 52	Stakeholders propose amendments to the simulation models in line with the conclusions from the GC ESC Expert Group "Interaction Studies and Simulation Models for PGM/HVDC".	Agree	ACER acknowledges the need to amend simulation models in line with the conclusions of the GC ESC Expert Group "Interaction Studies and Simulation Models for PGM/HVDC".
NC RfG	Bundesverband Solarwirtschaft eV	Article 40(1)	Technical requirements for generators are far too fragmented across Member States to allow for a proper world-leading internal market to emerge. Thus, this reform of the NC RfG should aim for the highest level of harmonisation possible. At the same time, PGMs must take account of the different historical requirements of the European grids. The technical standard EN-50549-X aims for such a harmonisation despite slightly varying technical requirements. It allows for nationally differing values under a uniform equipment certificate.	Partly agree	When applying NC RfG Member States, competent authorities and system operators should take account of agreed European standards and technical specifications as per Article 7(3)(f) of NC RfG. ACER deems the current reference sufficient for promoting further harmonisation through the European standards.
NC RfG	ENTSO-E	Article 42	The stakeholder argues that the need to clarify who should be appointed by the system operator to carry out the compliance tests should be added to the article. Compatibility testing is one of the most basic and reliable ways to check PGM's technical requirements. Resources may be insufficient for the implementation of the abovementioned activities and for this purpose it is reasonable to use an independent expert company that can carry out some of the activities. Enabling the participation of this type of company increases the credibility of the conducted compliance tests and their objective evaluation.	Partly agree	ACER acknowledges the need to allow the flexibility for power-generating facility owners to be able to delegate the performance of compliance testing to third parties.
NC RfG	ENTSO-E, VGBE	Article 50	The stakeholders consider that reference to articles 47, 48 and 49 is missing in Article 50. For these reasons, the stakeholder recommends replacing the reference to Article 44(2) and paragraphs 2, 3, 4, 5, 7, 8 and 9 of Article 48 with a reference to Articles 47, 48 and 49.	Agree	ACER acknowledges the need to amend the relevant article.
NC RfG	EFAC	New Chapter after Article 39	The stakeholder proposes new Articles 40-43 (combined in a dedicated chapter) to provide a detailed scheme on equipment certificates and to introduce the concept of prototype declarations.	-	The evaluation of the proposals is pending and is subject to a common proposal agreed between system operators and interested stakeholders, as part of discussions within the GC ESC Expert Group on "Harmonisation of Certification and product Family grouping".
NC DC	EFAC	New Chapter after Article 33	The stakeholder proposes new articles 34-37 (combined in a dedicated chapter) to provide a detailed scheme on equipment certificates and to introduce the concept of prototype declarations.	-	
NC RfG	EUGINE	Article 42	In principle, the connection requirements should apply at the connection point in a local site. In practice, manufactures often conduct compliance test of PGU /components in testbenches. The gap between connection requirement of PGM/PPM and compliance tests with PGU can be closed by PGU family definition and, simulation analysis. Thus, the stakeholder considers that, for simplicity, PGU compliance test can be considered as sufficient to PGM/PPM connection requirements.	-	
NC RfG	Green Power Europe	Article 44, Article 47	Information exchange between the relevant system operator and the power-generating module is critical for the system operation. Testing of the information exchange ensures the relevant system operator that the communication works as intended.	Partly agree	ACER considers that the data exchange with every new object (PGM, demand, HVDC system, etc.) from connection network code should be set in Article 40(5) SO GL or related methodology.
NC RfG	EUROGEN	Article 43(4)	The stakeholder considers that, if a simulation model is required, then the relevant system operator should: a) accept a neutral model description in the form of a generic model block diagram and mathematical representation published in a document format, or; b) provide options for accepting multiple simulation software packages which are commonly used in the industry	Partly agree	According to Article 15(6)(c)(iii) of NC RfG, the relevant system operator in coordination with the relevant TSO should specify the format in which models are to be provided. The delivery of simulation models in standards not compliant with TSOs tool, may affect compliance process and safety system analysis. However, ACER considers that it is beneficial for both parties to make an effort to optimise the delivery of simulation models.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	EUTurbines	Article 41	The stakeholder states that from time to time there is the wrong expectation that tests can be carried out "somewhere" else. This is not necessarily true and the possibility to test at the specific tests site should be a possibility. The inability to test (for technical reason) should not be a barrier to connect a generating unit which respects the requirements. Thus, the stakeholder considers that, in case of technical limitation to test at the site where the unit will be installed, an agreement should be found among parties (like use of simulation models, etc.).	Partly agree	
NC RfG	EUTurbines	Article 42	The stakeholder suggests an addition to article 42(2): " <i>(d) allow the use of alternative or same set of tests carried out in a different facility provided that those tests are efficient and suffice to demonstrate that a power-generating module complies with the requirements of this Regulation.</i> " Additionally, the stakeholder proposes to add a new point 5 to Article 42: " <i>Instead of carrying out the relevant test, power-generating facility owners may rely upon component and or equipment certificates issued by an authorised certifier or measurements issued by an accredited measurements institute to demonstrate compliance with the relevant requirement. In such a case, copies of the equipment certificates should be provided to the relevant system operator.</i> "	Partly agree	ACER considers that the current provisions sufficiently describe the compliance process.
NC RfG	EUTurbines	Article 43	The stakeholder proposes to add a new point (6) to Article 43: " <i>-The relevant system operator should allow the use of compliance simulation as described in article 43.2 also for Type A and Type B generating module. The provision described in art 15.6(c) are in this case applicable also to Type A, and Type B when validated model is used.</i> " Additionally, the stakeholder proposes an extension of use of compliance simulation to type A and B generating module. As an alternative, the content of paragraph 15(6).c can be moved to Article 13.	Disagree	According to article 40(1) of NC RfG, capabilities of a type A PGM should be proven by conformity certificates issued by authorised bodies. It is a double task for a type A PGM to supply compliance simulation. As concerning type B PGMs it is already required at art. 51(1) of NC RfG the possibility to replace equipment certificates with compliance simulations. Compliance simulation should be treated as additional way to prove compliance, especially when compliance tests are not possible to perform. Compliance test of crucial technical capabilities should not be replaced by simulations, because it may affect system security and stability.
NC RfG	SolarPower Europe	Article 41	Where compliance with this Regulation has been proven for Type A modules once, this should be sufficient proof within the entire internal market. Type A modules should not be subject to repeated individual certification in every Member State. Therefore, the stakeholder proposes to harmonise the requirements of different DSOs within a Member State to avoid unnecessary efforts for installers, planners or vendors. Type A power-generating modules which have been successfully certified in one Member State should not require any additional assessment in another Member State.	Partly agree	A type PGM compliance certification with connection requirements stipulated within NC RfG has to be in accordance with the conclusions elaborated by the GC ESC Expert Group "Harmonisation of certification and product family grouping". ACER considers that this acceptance is valid as long as identical capabilities are required across Member States. There are varied non-exhaustive and non-mandatory requirements stipulated into Member States' implementation of NC RfG with different parameters.
NC RfG	VGBE	Article 44	According to the stakeholder, the undamped oscillations depend also on the grid configuration. For this reason, the stakeholder proposed to add the wording: " <i>at standard grid conditions as defined in standardised connection agreements</i> ".	Partly agree	Although the oscillations depend also on the grid conditions, according to Article 13(2)(g) of NC RfG the PGM should be capable of operating stably during LFSM-O operation.
NC RfG	VGBE	Article 45	The stakeholder proposes an addition to point (7)(b)(i): " <i>the power-generating module operates at maximum reactive power during maximum one hour, at an operating point defined by the operator and the RSO. Additional test, each for 15 minutes, can be imposed by the TSO at following operational conditions</i> ".	Partly agree	The current provision already defines the operating points that the PGM will be required to operate during the test. The duration of the test may depend on the conditions during the test and may be specified by the TSO.

**10. ADVANCED CAPABILITIES**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	Enercon	New paragraph after Article 15(6), i.e. New Article 15(7)	Grid forming definition: "An electrical performance similar to a voltage source behind an impedance."	Agree	The ability of electrical performance similar to a voltage source behind an impedance is the essential prerequisite for grid forming.
			In principle, grid forming only for Type C and Type D PGMs. For Type A and Type B only after cost-benefit-analysis, in order to avoid undesired islanding and oscillatory interaction between PGMs in LV and MV grids. These can be avoided by specific measures and detailed studies, but such effort is not practicable in LV and MV mass installations. The situation may be different in HV and EHV grids.	Partly agree	Undesired islanding and oscillatory interaction between PGMs should be avoided. A system of activation adjustments and oscillation damping tools differentiated by type classes should be introduced in the RfG.
			SO may require that new PGMs perform grid forming only under the following conditions elaborated in a public stakeholder process, comprising of (a) determination of the process and identification of case of need, (b) published study on needs of SO's network, (c) technical assessment regarding most effective voltage level, considering system stabilization impact versus risk of unintentional islanding and controller interaction, (d) precision of technical details under steady state and transient operation conditions.  SOs should have to justify precisely why they need grid forming capable PGMs and define accurately what they require, using a well-defined terminology which allows the requirement to be verified by measurement of physical quantities and properly defined calculations.	Disagree	There is no need to establish grid forming requirements for all PGMs, only for PPMs, because SPGMs inherently and inevitably provide inertia and short-circuit current.  Complying with the Union's fit for 55 targets will lead to the decommissioning of conventional power plants which currently provide inertia and short-circuit current, thereby "forming the grid". There is no reasonable doubt that this inertia and short-circuit current will need to be compensated. Furthermore, evaluations in some MS have already taken place, e.g. in Germany evaluations have shown a need for grid forming installations of around 20 GW until 2030. Against this background, individual or collective cost-benefit-like analysis would generate at best little added value in terms of knowledge. They would rather jeopardize the timely rollout of grid forming and thereby either put at risk system stability or compliance with the Fit for 55 targets.  The differing situations in the MS demand that the RfG provides only for non-exhaustive requirements. The determination of precise technical details must therefore be left to the approval procedure under Article 7 RfG by which grid forming requirements will be specified by the designated entities of each MS.
			RSO in cooperation with NRA shall define remuneration of PGM owner, or determine how to include it in the national schemes of ancillary services.	Disagree	Remuneration is out of scope of the grid connection codes. Articles 31 and 40 of Directive (EU) 2019/944 leave the implementation of the ancillary service procurement regime in the hands of the MS legislative bodies.
NC RfG	VGBE	New paragraph after Article 13(7), i.e. New Article 13(10)	Grid forming for type A PPMs. As can be deduced from the other proposals for amendment in Article 13 NC RfG, VGBE accepts the final report of the Expert Group ACPPM, while not providing a legal wording proposal by its own.	Agree	The final report of the Expert Group Advanced Capabilities for Grids with High Shares of Power Park Modules (EG ACPPM) represents a possible compromise solution of the stakeholders. Hence, it should serve as an essential source for decision-making for ACER.
NC RfG	ENTSO-E	New article and paragraph before Article 20, i.e. new Article Y(6). New paragraph after Article 20(3), i.e. new Article 20(4) New paragraphs after Article 21(3), i.e. Article 21(5).	Grid-forming capability of all PPMs (Type A to D) described in the RfG in detail, nevertheless though as non-exhaustive requirements, which need to be specified by the designated entity in each Member State. This implementation may depend on the location and urgency in each Member State. Therefore, grid forming should be mandatory for type B, C, and D PPMs only after a transitional period of 3 years after the entering into force of the RfG 2.0. Member States may shorten the transitional period based on urgency and system needs.	Partly agree	The advocated grace period will be covered by the general provision in Article 72 RfG.
			The basic prerequisite of grid forming is defined as follows: Within the power park module current limits, the power park module shall be capable of behaving at its connection point as a voltage source behind an internal impedance (Thevenin source), during the normal operating conditions and immediately after a grid disturbance. Grid forming is then further elaborated.	Agree	The ability of electrical performance similar to a voltage source behind an impedance is the essential prerequisite for grid forming.
			Type C and Type D PPMs shall fulfil the following additional requirements in relation to grid forming capability:	Partly agree	Grid forming requirements should be introduced taking into account the final report of the EG ACPPM which represents a possible compromise solution of the stakeholders and is more elaborated and precise. This proposal also more adequately reflects the complexity of the issue.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
			<p>- PPM shall be capable of supporting system survival by means of stable and smooth transition towards and from island mode of system operation (islanding),</p> <p>- The relevant system operator may specify that a study is required (including its scope) in order to ensure that no adverse control interactions occur,</p> <p>- PPM shall be capable of limiting the transient frequency deviation both in low and high frequency situations. However, during the 3 year transitional period the PPM shall be capable of rapidly adjusting the active power injected to or withdrawn from AC grid within its rated power; the contribution is limited only by the maximum energy content of the electricity storage module or primary energy source of the power-generating module. This active power adjustment shall be performed proportional to the measured RoCoF.</p> <p>- When the frequency has recovered, the operating point of the PPM shall return to its pre-disturbance active power value.</p>		
NC RfG	Mercedes-Benz AG	<p>New recital after recital 31</p> <p>New paragraph after Article 2(65), i.e. Article 2(69) and Article 2 (70)</p> <p>New provisions in Article 14(2)</p> <p>New provisions in Article 21(2)(b)</p> <p>New paragraph after Article 66(2), i.e. Article 66(3)</p>	<p><b>New recital after recital 31</b> Electric vehicles can contribute to voltage and reactive power control, be it in a single use or combined via pooling.</p> <p><b>Article 2(69) and Article 2 (70)</b> Definition of 'Grid-forming' vs. Definition of 'System-Supporting' (non-Grid Forming) Generating units shall provide grid forming capabilities. System supporting properties shall not provide grid-forming capabilities.</p> <p><b>Article 14(2)</b> Electric vehicles (EVs) shall support grid forming technologies with their inverter technologies. With an adopted controller design, suitable damping characteristics shall support system stability objectives. Ancillary services shall be supported. The intelligence for charge/discharge control, regulation and protection can be implemented differently in the vehicle or the charging infrastructure.</p> <p><b>Article 21(2)(b)</b> Whether pooled EVs should provide synthetic inertia should depend on the size of the pool and the capability of each EV. A pool accumulating a capacity of Type C shall not have to provide synthetic inertia. The classical general requirements of Type C offer a lot of individual settings by relevant TSOs. In the case of pooled EVs, the prequalification shall be unified on Union level, so that a "moving" mobile EV can be used independent from the location.</p> <p><b>Article 66(3)</b> Bidirectional EVs with system supporting and/or grid forming technologies should fall under the scope of the emerging technology provisions.</p>	Partly agree	The relevant TSO should have the right to request grid forming capability at its connection point from type EV3 electric vehicles and associated V2G electric vehicle supply equipment.
NC RfG	VDE-FNN	New paragraph after Article 20(3), i.e. Article 20(4)	<p>Grid forming is defined as "an electrical performance similar to a voltage source behind an impedance".</p> <p>System operators should have the right to request grid forming capabilities from PGMs only under certain procedural conditions which are meant to ensure that grid forming requirements are (a) justified, (b) described in detail and (c) the potential commercial implications are considered. These conditions should be executed in a public stakeholder's process and comprise of (a) an implementation process and identification of case of need, (b) technical definition of requirements and (c) commercial boundary conditions.</p>	Agree	The ability of electrical performance similar to a voltage source behind an impedance is the essential prerequisite for grid forming.
				Disagree	Complying with the Union's fit for 55 targets will lead to the decommissioning of conventional power plants which currently provide inertia and short-circuit current, thereby "forming the grid". There is no reasonable doubt that this inertia and short-circuit current will need to be compensated. Furthermore, evaluations in some MS have already taken place, e.g. in Germany evaluations have shown a need for grid forming installations of around 20 GW until 2030. Against this background, individual or collective cost-benefit-like analysis would generate at best little added value in terms of knowledge. They would rather jeopardize the timely



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views
				rollout of grid forming and thereby either put at risk system stability or compliance with the Fit for 55 targets. The differing situations in the MS demand that the RfG provides only for non-exhaustive requirements. The determination of precise technical details must therefore be left to the approval procedure under Article 7 RfG by which grid forming requirements will be specified by the designated entities of each MS. Article 7 RfG sufficiently provides the adequate procedure. Hence, there is no need to introduce a lex specialis procedural provision for grid forming, as it may only put at risk coherent implementation.
			RSO in cooperation with NRA shall define remuneration of PGM owner, or determine how to include it in the national schemes of ancillary services.	Disagree Remuneration is out of scope of the grid connection codes. Articles 31 and 40 of Directive (EU) 2019/944 leave the implementation of the ancillary service procurement regime in the hands of the MS legislative bodies.
NC RfG	Undisclosed stakeholder	New paragraphs after Article 22(1), i.e. Article 22(2) and Article 22(3)	Type D PPMs shall be capable of behaving similarly to a voltage source behind an impedance with a specific start-up time constant (measure of inertia) and a specific overcurrent capability (measure of short-circuit current). Start-up time constant and overcurrent capability shall be established in the RfG as exhaustive requirements, however, TSOs may specify a higher level of inertia and a higher level of short-circuit current individually. If a relevant TSO identifies a need for inertia or short-circuit current for its respective network beyond the type D PPMs, that need shall be met through the additional obligation of type C non-synchronous generating units pursuant to Article 21(2), procurements through market-based procedure in accordance with Article 40(6) and/or by means of fully integrated network components as referred to in Article 40(7) of Directive (EU) 2019/944.	Partly agree The urgency for grid forming capable PPMs in terms of time and system security dictates that regulatory law is also applied to PPMs of smaller types. A restriction to type D PPMs would lead to a situation where the grid forming properties would not be sufficiently available in MS where there are not a sufficient number of such PPMs.
NC RfG	WindEurope	New paragraph after Article 21(3), i.e. Article 21(4)	Supports ENTSO-E's wording proposal with the following changes: - Grid forming capabilities should be established only for Type C and Type D PPMs.  - The notion "quasi immediately after a grid disturbance", i.e. the elapsed time within which response will be required, should be defined in the legal text of RfG 2.0. and not be left to variation on national or SO level in order to ensure cost-effectiveness and accelerated new grid-forming technology development. - "voltage phase angle steps" and "voltage magnitude steps" should be determined in the legal text of the RfG 2.0. Over which time period the steps should be calculated should be replaced or supported by a diagram. - The terms "predefined dynamic performance", "stable and smooth transition", "island mode" should be defined in the legal text of the RfG 2.0.	Disagree Delimitation to type C and type D PPMs would bear the risk of a shortcoming and inadequate allocation of grid forming capable PPMs.
			Both the decision for a transitional period of 3 years and the decision to shorten this period if necessary should make reference to a cost-benefit analysis, deployed by the RSO or NRA to justify the respective time period choices.	Disagree Complying with the Union's fit for 55 targets will lead to the decommissioning of conventional power plants which currently provide inertia and short-circuit current, thereby "forming the grid". There is no reasonable doubt that this inertia and short-circuit current will need to be compensated. Furthermore, evaluations in some MS have already taken place, e.g. in Germany evaluations have shown a need for grid forming installations of around 20 GW until 2030. Against this background, individual or collective cost-benefit-like analysis would generate at best little added value in terms of knowledge. They would rather jeopardize the timely rollout of grid forming and thereby either put at risk system stability or compliance with the Fit for 55 targets.



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	Gunnar Kaestle	Article 2(34)	No concrete wording proposal. Dispatchable load can serve to deliver synthetic inertia. Therefore, the definition of synthetic inertia should not exclude power electronics which serve as dispatchable load.	Disagree	Dispatchable loads are out of scope of the RfG.
		Article 5(2) Table 1	No concrete wording proposal. Only larger units which are connected to HV or EHV or units which have dedicated MV feeder should be equipped with synthetic inertia. Smaller units and units connected to lower voltage levels should follow later when a solution for undesired islanding has been found.	Partly agree	Undesired islanding should be avoided. A system of activation adjustments differentiated by type classes should be introduced in the RfG. For PPMs of smaller type classes there should be non-mandatory requirements while for PPMs of larger type classes there should be mandatory requirements.
NC RfG	SmartEn	New paragraph after Article 13(7), i.e. Article 13(9)	For Type A PGMs, advanced capabilities, such as congestion management or capabilities related to non-frequency ancillary services should only be optional and be procured as ancillary services under Directive (EU) 2019/944. However, for PGMs with $\leq 11,1$ kW the advanced capabilities requirements should be harmonised Union wide on IEC standards.	Partly agree	There is no need to establish all advanced capabilities for all PGMs. Rather some advanced capabilities, such as grid forming, are needed only for PPMs, because SPGMs inherently and inevitably provide inertia and short-circuit current. For PPMs of smaller type classes there should be non-mandatory requirements while for PPMs of larger type classes there should be mandatory requirements.
		New paragraph after Article 13(7), i.e. Article 13(10)	Advanced capabilities, such as blackout management or grid islanding management, should be harmonised Union wide on IEC standards. PPMs and electrical charging parks shall be able to participate in the future and shall be able to provide voltage control services when needed. Type test should be fostered.	Disagree	There is no need to establish black start capability and island operation for all PGMs. Black start capability and island operation for PGMs of smaller type classes would bring about stranded investment costs. Black start capability and island operation should remain non-mandatory requirements in order to take into account the largely differing needs of each MS, while assuring a sufficient degree of harmonization in favour of an economy of scale.

**11. WEATHER HAZARDS RESILIENCE**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	smartEN	Article1 and new article before art.13	The stakeholder suggests that weather hazards resilience obligations should be introduced to the NC RfG. In particular, connection requirements and limitations concerning specific weather events should be provided by the SO based on the data exchange protocols according to the IEC 618510-7-420 standard and as provided in Article 14.5(d). Automatic disconnection/reconnection should be performed in accordance with the Article 13.2(b) for type A and 14.4(b) for types B, C and D.	Partly agree	ACER considers that the efficient electric power system design includes addressing the problem of PGMs' weather resilience. However, the specific data exchange requirements are rather an operation, and not a connection issue.
NC RfG	VGBE	New paragraph (11) in art.13	The stakeholder considers that each Member State should determine the ranges of PGM operation in the events of weather or climate-change related hazards, specifically the ambient temperature, cooling water temperature and earthquake resistance.	Partly agree	ACER agrees that the underlying assets should be considered at a local (regional) level, and that relevant system operators and power-generating facility owners should take due account of possible extraordinary climate parameters. Further specifications of the possible events may prove inefficient at the European level.

**12. ACTIVE CUSTOMERS AND ENERGY COMMUNITIES**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	Eurelectric, Edison S.p.A, SmartEn undisclosed stakeholder	New paragraph in Article 2 Article 5(2)	The stakeholders propose that the NC RfG should use or refer to the definition on 'citizen energy community', included in the Directive (EU) 2019/944. Further, submitted changes suggest considering electricity generation modules belonging to the same energy community in an aggregated way. Other input referred to the aggregation of assets located at the prosumer's premises.	Partly agree	Regarding the definition, ACER notes that Article 2 already refers to the relevant definition. Considerations on mixed-customer sites are included in the relevant section of this evaluation report. Specific provisions for the autonomous energy communities and autonomous energy islands were included in the draft amendment proposal.
NC RfG	Eurelectric	Article 3(2)	The stakeholder underlines that whether an active consumer should comply with NC RfG, NC DC or both should be clearly identified in line with the definition provided in the Directive (EU) 2019/944.	Agree	ACER agrees that network codes ought to provide legal certainty over their scope of application. In view of all amendments considered in this amendment process, this application is further clarified.

**13. UNITS PROVIDING DEMAND RESPONSE SERVICES**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC DC	Eurelectric, Edison S.p.A., IFIEC Europe, Enel SpA, SmartEn, CharIn	All provisions applicable to the units providing demand response services	Stakeholders proposed to remove all references to DRS units from the NC DC. Many stakeholders argued that the present requirements only limit market participation. Additionally, some responses suggested alternatives to removal, such as introduction of a capacity threshold to determine units subject to NC DC requirements.	Partly agree	As previously stated in the ACER Policy Paper, ACER believes that the technical requirements for units providing demand response services should instead be included in the SO GL. This may support better integration of concerned system users. Until the necessary revision of the SO GL, the rules of NC DC should continue to apply.

#### **14. HARMONISATION OF TYPES B, C AND D PGMS**

During the public consultation of the draft ACER Policy Paper<sup>4</sup>, some stakeholders highlighted the need to consider further harmonisation for type B, C and D power-generating modules. In response to the stakeholders' suggestion, the ACER Policy Paper discussed possible policy options leading to achieving this objective. Nonetheless, stakeholders' input to the subsequent Public Consultation fell short of putting forward specific proposals.

Taking account of the results of the Public Consultation and the extent of changes that would have followed, ACER is reluctant to come forward with extensive amendments within this policy area. Instead, ACER limited the draft proposals to targeted changes that address the issues identified in the course of the amendment process.

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<sup>4</sup> [https://extranet.acer.europa.eu/Official\\_documents/Public\\_consultations/Pages/PC\\_2022\\_E\\_02.aspx](https://extranet.acer.europa.eu/Official_documents/Public_consultations/Pages/PC_2022_E_02.aspx)

**15. IMPROVEMENTS TO THE APPLICABLE RULES AND PROCEDURES**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	ENTSO-E	Article 5(1)	Article 38 of NC HVDC is clear "The categorisation in Article 5 of Regulation (EU) 2016/631 should apply to DC-connected power park modules." but Article 5 of NC RfG was written before existence of NC HVDC. The stakeholder proposes to clarify the text by adding after "power-generating modules", including the DC-connected power park modules" to leave out any ambiguity. Also propose to specify the reference to the requirements by adding 'defined'.	Disagree	Article 38 of NC HVDC sufficiently includes DC-connected power park modules, therefore there is no need to specify it in the NC RfG.
NC RfG	ENTSO-E	Article 6	The stakeholder proposes to amend the title of Article 6 to clarify which PGMs are covered by Article 6. Referring to "power-generating modules" and not explicitly to "offshore power-generating modules" creates confusion in the applicability of this article. Additionally, the NC RfG is not of application to industrial sites but to "power-generating modules embedded in the networks of industrial sites".	Agree	The proposed amendments add clarity to the title of Article 6.
NC RfG	ENTSO-E	Article 13(1)(a)	The stakeholder proposes to amend the frequency range of Ireland synchronous area to be in line with the Irish national grid Code. Due to the nature of Irish system, Eirgrid needs to apply Grid Code requirements from 47.0 Hz -> 47.5 Hz and 51.5 Hz -> 52.0 Hz.	Agree	ACER acknowledges the specificities of the Irish system.
NC RfG	ENTSO-E	New paragraph in Article 13(1)	The value of the rate-of-change-of-frequency (RoCoF) as set out in 13(1)(b) is defining a level of resilience against fast frequency changes. Every trip at RoCoF is smaller than the value as defined in 13(1)(b) is jeopardizing this level of resilience and thus endangering system stability. Therefore, every scheme using RoCoF as a trigger criterion for disconnection (e.g. loss of mains protection based on RoCoF), has to respect resilience level defined in 13(1)(b). This means, that its trigger must be set above the RoCoF as defined in 13(1)(b). Therefore, the stakeholder proposes to add a new paragraph in Article 13(1).	Partly agree	ACER acknowledges the need to respect RoCoF levels as a trigger criterion for disconnection (e.g. loss of mains). However, the possibility for the relevant system operator, in coordination with the relevant TSO, to specify the threshold of this rate-of-change-of-frequency-type loss of mains protection should be included.
NC RfG	ENTSO-E	Article 14(3) and Article 16(3)	The stakeholder proposes to split Tables 3.1, 7.1 and Tables 3.2, 7.2 into separate tables for voltage parameters and tables for time parameters. It is important that the text, figure and table are unambiguous, and for this reason, the link between time and voltage parameters should not appear in the tables but only in the figures. The proposal also includes alignment of the values with the proposed amendment regarding the voltage ranges.	Agree	ACER acknowledges the need to add clarity to these paragraphs.
NC RfG	ENTSO-E	Article 14(5)(d)	The stakeholder proposes to leave out of the paragraph (i) the text "periodical data exchange (with time stamping)" and Instead to make a reference to the SO GL. New text for (ii) is also proposed to cover exchanging real data for metering. Periodic data with a timestamp is a different type of real-time data, so it is suggested to remove this term. It is also imprecise in the context of solutions specified in SO GL. The real-time data exchange capability should be determined by the NC RfG (see i)). The information content (data range) of real-time data as well as structural and scheduled data is determined by SO GL and related documents (for the real-time data exchange see Art.47.1 of SO GL)	Agree	ACER acknowledges the need to clarify further the information content of real-time data in line with the SOGL and the addition of exchanging real-time data for metering.
NC RfG	EU DSO	Article 14(5)(d)	The capabilities of modern protection relays make it possible in almost all new installations that there is disturbance information stored in these relays. The stakeholder proposes to add an option to allow the RSO to place an obligation on the generation owner to provide fault recording information from such, or other, facilities.	Agree	ACER acknowledges the addition of an option to allow the RSO to request from the power generating facility owner fault recording information, since the capabilities of modern protection relays make it possible in almost all new installations to have such information stored in these relays.



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	ENTSO-E	Article 15(2)(c)	In order to maintain frequency stability, the stakeholder proposes to harmonise at synchronous area level the frequency ranges and response time for LFSM-U, to ensure a harmonised and stable behaviour. Delay for active power response is a crucial parameter for stopping and preventing the change of frequency during system incidents. Due to this, it is important that this parameter is as small as possible, especially for PPMs.	Agree	Frequency is shared in the same synchronous area, thus it is important to have the same behaviour regarding the frequency control functions to maintain frequency stability. LFSM-U and LFSM-O thresholds should thus be harmonised at synchronous area level and aligned with FSM settings to ensure a harmonised and stable behaviour. It is also important that the function is used in the same way by all TSOs in a synchronous zone so that there is no unwanted interference. The proposed amendment is in line with ENTSO-E's Implementation Guideline Document (IGD) on Limited frequency sensitive mode <sup>5</sup> .
NC RfG	EUROPGEN, EUGINE, VGBE, Undisclosed stakeholder	Article 15(2)(c)	Regarding LFSM-U, the stakeholders propose that power-generating modules should be capable of activating this provision with a power increase response time as specified by the relevant system operator, in coordination with the relevant TSO, but always limited by the capabilities inherent to the PGM technology. The increasing and decreasing active power ramp rate should consider the technical constraints of power generating module technologies.	Agree	See proposed amendment regarding LFSM-U in Article 15(2)(c).
NC RfG	VGBE, Undisclosed stakeholder	Article 15(2)(c)	The stakeholders propose to add a paragraph stating that priority of LFSM-U over external control signals has to be agreed with the RSO. Units providing FRR and RR services have to continuously process external set points, otherwise the system freezes and cannot be controlled anymore.	Partly agree	It is important to ensure a harmonised and stable system frequency behaviour and LFSM-U and FSM should be aligned. However, ACER considers that this can be ensured by harmonising at synchronous area level and aligning with FSM the response time and frequency thresholds of LFSM-U. See also the proposed amendment regarding LFSM-U in Article 15(2)(c).
NC RfG	ENTSO-E, Undisclosed stakeholder	Article (2)(39), Article 15(2)(d)	The stakeholders propose to align the frequency response insensitivity and intentional frequency response dead band for FSM in the NC RfG with the SO GL. One stakeholder proposes to define the intentional frequency response deadband as 0 mHz.	Partly agree	Frequency is common parameter for whole synchronous area, the stability of this global variable is strongly linked to the insensitivity and to the dead band. The proposed amendment aligns the NC RfG requirements to FCR minimal technical requirements (Article 154 of SOGL) regarding the maximum combined effect of inherent frequency response insensitivity and possible intentional frequency response dead band of the governor of the FCR providing units or FCR providing groups. The stakeholders' proposed amendment is in line with the ENTSO-E's Implementation Guideline Document (IGD) on frequency sensitive mode. With regard to the frequency response deadband, the value is defined in Table 4 of Article 15.
NC RfG	ENTSO-E	Article 13(2)	In order to maintain frequency stability, the stakeholder proposes to harmonize at synchronous area level the frequency ranges and response time for LFSM-O, to ensure a harmonized and stable behaviour. Delay for active power response is a crucial parameter for stopping and preventing the change of frequency during system incidents. Due to this, it is important that this parameter is as small as possible, especially for a PPM's.	Agree	Frequency is shared in the same synchronous area, thus it is important to have the same behaviour regarding the frequency control functions to maintain frequency stability. LFSM-U and LFSM-O thresholds should thus be harmonized at synchronous area level and aligned with FSM settings to ensure a harmonized and stable behaviour. It is also important that the function is used in the same way by all TSOs in a synchronous zone so that there is no unwanted interference. ACER proposed amendment is in line with the ENTSO-E's Implementation Guideline Document (IGD) on Limited frequency sensitive mode.
NC RfG	EUROPGEN, EUGINE, VGBE, Undisclosed stakeholder	Article 13(2)	Regarding LFSM-O, the stakeholders propose that power-generating modules should be capable of activating this provision with a power decrease response time as specified by the relevant system operator, in coordination with the relevant TSO, but always limited by the capabilities inherent to the PGM technology. The increasing and decreasing active power ramp rate should consider the technical constraints of power generating module technologies.	Agree	See proposed amendment regarding LFSM-O in Article 13(2).
NC RfG	VGBE, Undisclosed stakeholder	Article 13(2)	The stakeholders propose to add a paragraph stating that priority of LFSM-O over external control signals has to be agreed with the RSO. Units providing FRR and RR services have to continuously process external set points, otherwise the system freezes and cannot be controlled anymore.	Partly agree	It is important to ensure a harmonised and stable system frequency behaviour and LFSM-U and FSM should be aligned. However, this can be ensured by harmonising at synchronous area level and aligning with FSM the response time and frequency thresholds of LFSM-U. See also proposed amendment regarding LFSM-O in Article 13(2).

<sup>5</sup> [https://eepublicdownloads.entsoe.eu/clean-documents/Network%20codes%20documents/NC%20RfG/IGD\\_LFSM-O-U\\_final.pdf](https://eepublicdownloads.entsoe.eu/clean-documents/Network%20codes%20documents/NC%20RfG/IGD_LFSM-O-U_final.pdf)

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	ENTSO-E	New paragraph after Article 21(3)	The stakeholder proposes to introduce an additional requirement for Type C PPMs in relation to system stability regarding forced oscillations to the power system. This amendment relates to active power forced oscillations (i.e. not caused by the interaction with electrical system) that have been measured on some recently installed offshore wind parks. These oscillations may also be present on onshore parks. In general, forced oscillations are dangerous on system stability, the proposed amendment will be beneficial also for other possible forced oscillations that may arise in the future, even if not arising from the specific functionality of the wind parks but from other PPM types.	Partly agree	System stability is very important in view of the system decarbonisation where a greater proportion of power electronics connected generation will be present in the system, displacing other conventional technologies such as synchronous generators. Therefore, in principle, it is important for such devices to aid the damping of system oscillations but in addition, the control characteristics of the connected generation should not adversely affect the damping of power oscillations. However, ACER understands that there are discussions ongoing between ENTSO-E and relevant stakeholders regarding setting appropriate limits for forced oscillations. ACER is willing to consider a compromise solution for the legal text agreed between the relevant parties in the coming months.
NC RfG	ENTSO-E	Article 15(2)(d)	The stakeholder proposes to amend the droop range of Table 4 so that to align the droop with the active power range related to maximum capacity.	Agree	ACER acknowledges the need to align the droop to cover the minimum range of active power related to Pmax.
NC RfG	ENTSO-E	Article 15(3)	The system needs are that power generating modules should stay connected and control voltage within defined ranges. Taking into account reactive power capabilities and voltage control capabilities of power generating units, the stakeholder considers that an automatic disconnection is the worst for the system stability. No utilisation of such capability has been identified/used by TSOs or needed in the future and for these reasons, the stakeholder proposes to delete the initial text of Article 15(3) of NC RfG	Agree	ACER acknowledges the lack of system need for this requirement.
NC RfG	ENTSO-E	Article 15(2)(d)	Frequency is shared in the same synchronous area, thus it is important to have the same behaviour regarding the frequency control functions to maintain frequency stability. LFSM-U and LFSM-O thresholds should be harmonised at synchronous area level and aligned with FSM settings. To ensure a harmonised and stable behaviour dynamic parameters need to be defined. It is also important that the function is used in the same way by all TSOs in a synchronous zone so that there is no unwanted interference. To ensure this, the stakeholder proposes to harmonise the frequency ranges for each synchronous area.	Agree	ACER acknowledges the need to harmonise frequency ranges for each synchronous area for FSM, LFSM-O and LFSM-U.
NC RfG	ENTSO-E	Article 15(2)(d)(v)	Frequency is a cross-border parameter, therefore the period of full active power frequency response provision needs to be uniform in a synchronous area. The duration of full active power frequency response is not specified in the current version of NC RfG, thus the stakeholder proposes that the specification of this period should be coordinated between the TSOs of the same synchronous area.	Agree	ACER acknowledges the need to coordinate the period of full active power frequency response provision in a synchronous area.
NC RfG	ENTSO-E	Article 15(4)(a)	The stakeholder proposes further clarification regarding the black start capability of Type C PGMs. Furthermore, the proposed modification allows to make reference to minimum regulating level (defined for FSM only).	Agree	ACER acknowledges the need to reference to minimum regulating level regarding the black start capability.
NC RfG	ENTSO-E	Article 15(4)(c)	The restoration of the network can be performed with the help from the power-generating units with black start capabilities. However, by introducing this amendment, the restoration of the network can also be started and supported by power-generating units with prolonged houseload operation. Those are units that had been in normal operation, disconnected due to the event, but managed the switch to houseload operation. They are available virtually immediately after blackout (no blackstart required).	Agree	ACER acknowledges the importance of these PGMs with prolonged houseload operation for system restoration.
NC RfG	ENTSO-E	Article 18(2)(b) Table 8, Article 21(3)(b) Table 9, Article 25(5) Table 11	With regard to reactive power capability, the stakeholder proposes to change the maximum range of voltage for synchronous area Nordic. This will help the harmonisation of basic generator requirements and harmonise national requirements where TSO operate in both the CE and N synchronous areas.	Agree	ACER acknowledges the benefit of harmonising reactive power capability.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	ENTSO-E	Article 21(3)(d)	The stakeholder proposes to add a paragraph to Article 21(3)(d) to introduce a new reactive power control mode that controls the power factor of the output as a function of the active power output. This functionality is implemented in several LV and MV inverters today and ease the integration of decentralised generation in the system. In case generation is high at the end of a feeder, voltage level tends rise which can be limited by having an inductive power factor. Conversely, in case of low generation at the end of a feeder, voltage is lower and can be supported by capacitive power factor. Therefore, additional requirement is added in the NC RfG to request an active power-related power factor control mode. The new added control mode is consistent with CENELEC standard. The capability to re-select the control mode at a later stage is also added.	Agree	ACER acknowledges the benefit to the system of introducing this requirement for controlling the reactive power.
NC RfG	ENTSO-E, EUGINE	Article 19(2)	Power system stabilisers (PSS) contribute to system damping if they are properly tuned. Adding stabilising power to the system would improve system stability and allow improvement of the power flow transfers throughout the system, easing market integration and system decarbonization. The stakeholders propose to clarify capabilities related to power system stabilisers.	Partly agree	ACER acknowledges the need to clarify further the capabilities related to power system stabilisers.
NC RfG	ENTSO-E, WindEurope, Vestas Wind Systems AS	Article 21(3)(f), Article 22, Article 55	Oscillatory stability has to be tackled from a system-wide perspective, as system damping can vary notably, depending on system power flows, system topology, type of load, demand, etc. Taking into account that system decarbonisation relies mainly on PPMs (namely, for wind and solar generation), these technologies will be present in a greater proportion in the power system and will displace other technologies such as synchronous generators. The technology is sufficiently mature to provide the required control of active or reactive power in order to improve the damping of oscillatory modes (Power Oscillation Damping -POD-P and/or POD-Q). The stakeholders therefore consider that adding stabilising power to the system would improve system stability and allow improvement of the power flow transfers throughout the system, easing market integration and system decarbonization. Other proposals include that for cases where the required damping performance cannot be obtained simultaneously with fulfilling the requirements for voltage and reactive power control laid down in point (d) of Article 21(3), the relevant system operator or the relevant TSO should specify whether voltage and reactive power control or power oscillation damping should be prioritised.	Partly agree	System stability is crucial in view of the system decarbonisation where a greater proportion of power electronics connected generation will be present in the system, displacing other conventional technologies such as synchronous generators. Therefore, it is important for such devices to aid the damping of system oscillations.
NC RfG	ENTSO-E	Article 13(7), Article 14(4)	The stakeholder proposes to clarify the capabilities of PGMs for automatic connection to the network and the conditions for connection to aid the harmonisation.	Agree	ACER acknowledges the need to clarify further the capabilities related to automatic connection to the network and the conditions for connection.
NC RfG	ENTSO-E	Article 17(2)(b)	The stakeholder proposes to include controlled limitation of the excitation current for SPGMs, as this is a standard feature of Automatic Voltage Regulators and is therefore available at no additional cost.	Agree	ACER acknowledges the addition of these requirements focusing on the standard functionalities of the Automatic Voltage Regulators of SPGMs.
NC RfG	ENTSO-E	New paragraph (c) in Article 14(4)	The stakeholder proposes to improve robustness of PGMs by introducing a requirement to remain connected without power reduction in case of low-short-circuit level at the connection point.	Agree	Stability of the PGM in the case of reduction of the system strength (low short-circuit level), robustness of the controller of the PGMs should be ensured in case of outage in the network.
NC RfG	ENTSO-E, EU DSO	Article 15(5)(b)	The stakeholders propose clarifications regarding the capability of Type C PGMs to take part in island operation and in particular the detection to island operation.	Agree	ACER acknowledges the need to clarify further the capabilities of PGMs related to island operation.
NC RfG	ENTSO-E	Article 13(1)(a)(i)	When a system split is occurring, frequency in the overfrequency island can transiently overshoot before it is stabilised to a value according to the droop settings. If, during that transient, all generation is tripped due to transient over-frequency, the island will black out, even if it would have been possible to stabilise the frequency below 51.5 Hz. This system behaviour will be aggravated with decreasing system inertia. The stakeholder proposes to include an additional frequency range to cover over-frequency transients above 51.5Hz to 52.5Hz. The proposed modification delays the tripping of the generation during the transient and therefore prevents the island from blacking out. By this, it is increasing system resilience.	Agree	ACER acknowledges the need to increase system resilience during over-frequency transients when a system split occurs.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	EUROPGEN	Article 13(1)(a)(i)	The stakeholder proposes to include an upper limit of time duration for under-frequency operation between 47.5Hz and 48.5Hz where it is left to the system operator to define in Table 2. Boundary conditions are proposed for frequency operation, aligning with EN 50549-2 standard.	Agree	ACER acknowledges the need to include an upper limit to the time duration for the specified frequency range.
NC RfG	SmartEN, Eurelectric	Article 13(1)(a)(i)	The stakeholders propose to harmonise the time period for operation for under-frequency operation between 47.5Hz and 49Hz where it is left to the system operator to define in Table 2. All requirements for type A generators should be the same throughout the EU. If not, there will be inherent bias against the use of smaller assets as DERs. This is especially true at lower power level assets.	Partly agree	ACER recognises the need to amend the time periods for operation in different frequency ranges. Nevertheless, national specificities need to be accommodated, where necessary.
NC RfG	VGBE, Undisclosed stakeholder	Article 13(1)(a)(i)	The stakeholders propose to define an unlimited time period for operation with a frequency deviation not exceeding its maximum steady state value, as defined by Commission Regulation (EU) 2017/1485 Annex III. The time period for operation should be at least ten times longer than the "time to restore frequency", as defined by Commission Regulation (EU) 2017/1485 Annex III.	Disagree	The requirements defined according to NC RfG regarding the time period of operation for the frequency range of 49Hz to 51Hz are not in contradiction to the SO GL provisions, as the latter is referring to system operation and recovery following a disturbance. Furthermore, the NC RfG defines capabilities for the robustness of the system, whereas the SO GL defines targets for operation.
NC RfG	ENTSO-E	Article 14(3) and Article 16(3)	The stakeholder proposes to include a fault-ride-through capability for repetitive faults and the limitation of this capability should be based on technical limitation measured in real-time (e.g. dissipation of energy or triggered vibration).	Disagree	ACER understands that this capability is only included in national legislation of a very limited number of Member States. Therefore, it does not warrant the inclusion of this requirement on a European scale through the network codes.
NC RfG	ENTSO-E, EUGINE, Enel SpA, VGBE, Undisclosed stakeholder, Swedenergy, Syndicat des Energies Renouvelables	New paragraph in Article 13, Article 15(4), Article 16(2), Article 18(2)(b)	The stakeholders propose amendments to the voltage ranges that PGMs should fulfil relating to voltage stability. Several stakeholders propose specific amendments to the voltage ranges for Type D PGMs. Another proposal is to include a combined frequency and voltage range for alternators. Another stakeholder proposes to define voltage ranges from Type A PGMs onward based on the rated voltage.	Partly agree	ACER acknowledges the need to amend the voltage ranges, while maintaining sufficient levels of system robustness. Particularly it is deemed necessary to amend the upper limit of the voltage range as this corresponds to too onerous requirement for 400kV connected PGMs. Moreover, ACER recognises a broad agreement for basic voltage stability requirements for PGMs connected below 110kV level. For higher voltage levels specifying voltage ranges according to the rated voltage can be deemed proportional.
NC RfG	ENTSO-E, VGBE, Oesterreichs Energie, EUROPGEN	Article 18(2)(b), Article 21(3)(b)	Two stakeholders propose to align the U-Q/Pmax profile with the amended voltage ranges. Furthermore, the indicative figure is proposed to be adapted so that it is clear that the voltage range represents the difference between the highest and lowest values at a certain value of Q/Pmax. One stakeholder proposes changes to Table 8 on parameters for the inner envelope.	Partly agree	ACER recognises the need to amend U-Q/Pmax profile, shown in Figure 7. Furthermore, parameters of Table 8 reflect maximum ranges for the inner envelope, whose position, size and shape are indicative as per Article 18(2)(b)(ii).
NC RfG	ENTSO-E, VDE-FNN, Enercon	New paragraph in Article 13, Article (15)(2)(d), Article 15(3), Article 17(2), Article 21(2), Article 21(3)(d), Article 47, Article 51, Article 52, Article 54(2), Article 55	The stakeholders propose amendments to ensure stable controller behaviour in a closed loop operation setup of PGMs with regard to voltage and frequency control.	Agree	ACER recognises the need to ensure stable behaviour in a closed loop operation setup of PGMs with regard to voltage and frequency control. Relevant provisions are included in the compliance section of the proposed amendments to the NC RfG.
NC RfG	ENTSO-E	New recital paragraph, new paragraph in Article 18(2), Article 45(7), Article 52(5)(a)	The stakeholder proposes to add provisions for extended system support by PGMs beyond the frequency, voltage or reactive power capabilities, in NC RfG. The stakeholder argues that these extended capabilities should not be withheld unjustifiably.	Disagree	ACER understands the benefit of PGMs continuous system support and contribution to overall system robustness under system conditions beyond the frequency or voltage defined in NC RfG. However, additional requirements can be prescribed in the connection agreement, respecting their economic and technical feasibility.



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views
NC RfG	EU DSO, smartEn, undisclosed stakeholder, Syndicat des Energies Renouvelables, Bundesverband Solarwirtschaft eV, CogenEurope, SolarPower Europe, VW Group	Article 13(6), Article 14(2), new paragraph after Article 14(5)	The stakeholders propose to add a communication interface in order to reduce or modify active power output. According to the stakeholders, already many type A PGMs have this capability whereby the DSO can reduce the PGM output to avoid DSO (and even TSO) network overloading. One stakeholder proposes that no remote control requirements should be mandatory for any PGM with an installed capacity of less than 30 kW and the remote control should not be used for any functionality which constitutes an ancillary service under Directive (EU) 2019/944, unless the relevant system operator has established a market based mechanism to procure such services. Another proposal is that advanced capabilities such as congestion management or capabilities related to non-frequency ancillary services according to Directive (EU) 2019/944 should be non-mandatory requirements for Type B PGMs. Such capabilities should be harmonised to the highest extent between Member States and then be applied in the framework of ancillary services market frameworks. Proposals were also referring to taking into account the technical limitations of PGMs and the technical standards and also deleting the provision.	Partly agree  The capability to cease active power output of Type A PGM within the five seconds can indeed be replaced with the capability to reduce active power output as it would benefit the users and the system security – this is reflected in the relevant provisions in the NC RfG. NC RfG lays down technical requirements for PGMs capabilities therefore operation and market issues are outside of the scope of the NC. In addition, there is no technical or economical sound argument to justify any prohibition to use available remote control equipment of the PPMs. The promotion of market-based procurements may not serve as an argument in this regard. Regarding advanced capabilities, there is no need to establish grid forming requirements for all PGMs, only for PPMs, because SPGMs inherently and inevitably provide inertia and short-circuit current. The differing situations in the MS demand that the NC RfG provides only for non-exhaustive requirements. The determination of precise technical details must therefore be left to the approval procedure under Article 7 of NC RfG by which grid forming requirements will be specified by the designated entities of each MS. The legal framework for advanced capabilities consists of three pillars: Grid connection requirements, ancillary services and fully integrated network components. The three pillars complement each other. Legally binding grid connection requirements may serve as a jump start for investments in the new technology. The PGM owners willing to participate in any market-based procurement need the new technology available before they can participate in any corresponding tender procedure. There is a risk that this chicken and egg problem will remain if there are no binding grid connection requirements in place. Furthermore, the current reference as per Article 7(3)(f) of NC RfG. is deemed sufficient for promoting further harmonisation through the European standards.
NC RfG	EU DSO, Oesterreichs Energie	New paragraph after Article 13(7)	The stakeholders propose to introduce reactive power capability specified by the relevant system operator and compulsory voltage control that can modulate reactive and/or active power, as well as reactive power control and power factor control for Type A PGMs. One stakeholder proposes to add a requirement for type A PGMs to be capable of providing active power with regard to voltage.	Partly agree  ACER considers that the capability for Type A PGMs to control the terminal voltage by having a voltage control system can benefit the user and the system security. Voltage requirements should be specified within the provided voltage ranges by the RSO based on their local system needs.
NC RfG	ENTSO-E	Article 2(15)	The stakeholder suggests adding “electrical” to the definition of connection point, since the notion of interface is understood differently in different Member States and such amendment clarifies the need to have an agreed physical point of electrical connection.	Disagree  ACER considers that this amendment is not necessary as it would not add more clarity to the requirements or facilitate the harmonisation and transparency of the connection procedures implementation across Member States.
NC RfG	ENTSO-E	Article 14(5)(b)(iii)	The stakeholder proposes to remove the term “unit”, as it argues that is only used in NC RfG in connection with a single wind turbine. Thus, “transformer detection” would be used as a single term.	Agree  ACER agrees that in the given context the term “unit” could be removed. However, the reasoning behind the proposed change is not precise, as the term “unit” is not used solely in connection with the single wind turbine in NC RfG.
NC RfG	ENTSO-E	Article 15(2)(c) and Article 15(2)(d)(iv)	The stakeholder proposes to add the words “as short as possible” for the initial activation of active power frequency response, since it is important to avoid any delay that could impact the stability of frequency.	Agree  ACER agrees that this wording could be used to emphasise the need for a fast frequency response.
NC RfG	ENTSO-E	Article 15(2)(d) Table 5	The stakeholder points out that the wording in NC RfG with regard to the maximum admissible full activation time contradicts the suggestions set in ENTSO-E's Implementation Guideline (IGD). Namely, the IGD suggests the TSO to require faster response in case of local needs. Thus, the stakeholder proposes the maximum admissible full activation time to be 30 seconds for Continental Europe and Nordic, 10 sec for Great Britain and 5 sec for Ireland and Northern Ireland.	Disagree  In ACER's view, the proposed change would not be necessary. NC RfG sets the maximum admissible full activation time of 30 seconds, which already allows for a faster response without the need for a regional specifications. At the same time, the IGD still could be referred to for more specific recommendations.
NC RfG	ENTSO-E	Article 15(2)(d)(vii)	The stakeholder proposes to add point (iv) as a parameter to be notified to the relevant NRA. Without this amendment, not all parameters are notified.	Agree  Indeed, ACER considers that point (iv) could also be added to the list of parameters to be notified. In that case, those parameters should be listed as (i)-(v).

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	ENTSO-E	Article 17(2)(a) and Article 20(2)(a)	The stakeholder proposes to replace “provide reactive power” with “supply and absorb reactive power”, arguing it would bring more clarity in the interpretation and avoid the risk of not meeting the system needs.	Agree	ACER agrees that the wording “provide reactive power” could be changed to “supply and absorb reactive power” to introduce more clarity. As for the consistency, similar proposal with regard to Type C could be found in Articles 18.2(b) and 21.3(b).
NC RfG	ENTSO-E	Article 18(2)(b), Table 8, Article 21(3)(b), Table 9 and Article 25(5)	The stakeholder points out that the title of variable provided in the table does not correspond to the content of the table. For this reason, the title “steady-state voltage level” is replaced by “steady-state voltage” to correct the error.	Agree	Indeed, ACER agrees that there is an error in the text that should be corrected.
NC RfG	ENTSO-E	Article 29 (new paragraphs 3 and 4)	The stakeholder notes that Article 30.3, 32.4 and 32.5 related to operational notification for PGMs include requirements for information to the relevant system operator and regulatory authority upon closure of PGMs of type A to C. Similar requirements are not provided for Type D PGMs. The same provision should apply to Type D facilities. Therefore, it has been proposed to add these requirements to Article 29 to cover all PGMs and delete the same from Articles 30 and 32.	Agree	ACER agrees that the requirements for information of the relevant system operator and regulatory authority upon closure of PGMs of types A to C should also be applicable to Type D PGMs. ACER considers that it would be appropriate to have such requirements provided only in Article 29 and, therefore, removed from Articles 30 and 32.
NC RfG	ENTSO-E	Article 30(3)	Deletion is proposed in line with changes introduced to Article 29.	Agree	ACER agrees that the requirements for information of the relevant system operator and regulatory authority upon closure of PGMs of types A to C should also be applicable to Type D PGMs. ACER considers that it would be appropriate to have such requirements provided only in Article 29 and, therefore, removed from Articles 30 and 32.
NC RfG	ENTSO-E	Article 32(4) and 32(5)	Deletion is proposed in line with changes introduced to Article 29.	Agree	ACER agrees that the requirements for information of the relevant system operator and regulatory authority upon closure of PGMs of types A to C should also be applicable to Type D PGMs. ACER considers that it would be appropriate to have such requirements provided only in Article 29 and, therefore, removed from Articles 30 and 32.
NC RfG	ENTSO-E	Article 32(2)(e)	The stakeholder points out that the requirements for type B and type C PGMs and type D PGMs are harmonised as far as applicable. This means that the wording in the articles should be harmonised so that it becomes clear that the same requirements are described in the respective articles.	Partly agree	Indeed, in ACER's view the harmonisation of the wording would clarify that the requirements described in respective articles are the same. However, the proposed amendment does not seem to correspond with the NC RfG text, namely with the wording of Art 35(3)(d). ACER understands that the correct wording proposal would be the following: - for Type C power-generating modules, simulation models as specified by point (c) of Article 15(6) and required by the relevant system operator;
NC RfG	ENTSO-E	Article 70	The stakeholder noted that the reference to Article 4(2) is incorrect and it should be replaced by Article 4(3).	Agree	ACER agrees that the reference should be replaced to insure the correct interpretation of the article.
NC RfG	ENTSO-E	Article 2(17) (edit to existing definition)	The stakeholder points out that for some technologies (Asynchronous generator, DFAG, ...) the interpretation in the application of the NC is more ambiguous. These technologies could potentially fall into either SPGM or PPM categorisation depending on national interpretation and implementation of the NC, which was not the intention. The stakeholder suggested to add the wording “which is not a synchronous power-generating module and” in the definition of PPM to clarify that if a PGM does not fall into the definition of SPGM (“the frequency of the generated voltage, the generator speed and the frequency of network voltage are in a constant ratio and thus in synchronism”) then it is by default a PPM. This will clarify unambiguously that DFIG & induction generators are PPMs.	Agree	ACER considers that the proposed amendment could bring more clarity to the definitions of PPM and SPGM and therefore harmonise the implementation across Member States. At the same time, the improvement of the suggested wording could be further considered.
NC RfG	CENELEC TC8X, smarten, Enel S.p.A	Article 2(10), Article 7(3)(f), Article 13, Article 14, Article 20(2)	The stakeholders argue that the application of European Standards should be the normal approach in implementing NC RfG, not only the “consideration” of standards, in order to strengthen harmonisation in the single market and speed up the energy transitions. One stakeholder proposes that requirements and compliance should be referred to harmonised Technical Standard (f.i. CENELEC), if existing. One stakeholder proposes that all parts of NC RfG regarding technical specification for PGMs (for each one) already defined in EN 50549 family standard (Type A or B) should be eliminated from NC RfG.	Disagree	When applying NC RfG Member States, competent authorities and system operators should take account of agreed European standards and technical specifications as per Article 7(3)(f) of NC RfG. The current reference is deemed sufficient for promoting further harmonisation through the European standards.
NC RfG	Cenelec	Article 7.3	Celenelec proposed to amend paragraph (f) as follows “ <i>apply applicable agreed European standards and technical specifications. If deviations from European standards are necessary, these should be reasoned in a cost benefit analysis. TSOs or ENTSO-E should inform national and European technical committees respectively on applicable new requirements in due time.</i> ”	Disagree	ACER understands that the application of the EU standards is voluntary thus reasoning and applying a CBA on any deviations is not in line with proportionality and subsidiarity principles.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	VGBE	Article 2(6)	The stakeholder proposes to add the phrase "in a controllable manner" to the power generating facility definition.	Disagree	The current definition adequately describes the power generating facility.
NC RfG	VGBE, EUGINE, EUROGEN	Recital 9, Article 2(9), new paragraphs after Article 2(65)	The stakeholders propose to clarify the notion of synchronous power generating module.	Agree	ACER recognises the need to clarify this specific notion.
NC RfG	VGBE	Article 2(17), new paragraph after Article 2(65)	The stakeholder proposes to define a doubly-fed induction machine (DFIM) and clarify the definition of power-park module regarding this type of machine.	Partly agree	ACER considers that the legal definition of specific generation technology is not necessary. However, more clarity could be introduced to the definition of PPM. See ACER position on ENTSO-E amendment proposal regarding Article 2(17).
NC RfG	VGBE, Undisclosed stakeholder	Article 2(37), Article 2(38)	The stakeholders propose to clarify the definitions of limited frequency sensitive mode, overfrequency and underfrequency (LFSM-O, LFSM-U). Another stakeholder proposes to delete the reference to HVDC systems.	Disagree	The current definition adequately describes the limited frequency sensitive mode, overfrequency and underfrequency. As regards to the reference to HVDC systems, it needs to stay since the definitions in NC RfG apply to NC HVDC as well.
NC RfG	VGBE	Article 6(4)(c)	The stakeholder proposes to include Type D PGMs of facilities for combined heat and power production embedded in the networks of industrial sites relating to the capability to maintain constant active power output or to modulate active power output.	Disagree	The intention of this article is not an overall exemption to all types of customers and heat demand which would imply an overall technology-specific exemption of all CHP units.
NC RfG	VGBE, undisclosed stakeholder	Article 7(3)	The stakeholders propose that nuclear safety should prevail. In addition, PGMs should be allowed to disconnect if the requirements of this code are not respected by the system operator.	Partly agree	Relevant nuclear safety rules should be adequately considered during the application of NC RfG. Regarding capabilities of PGMs, current requirements of the NC RfG allow the power generating facility owners to protect their equipment by having the capability to disconnect during operation outside the specific technical capabilities defined in the NC RfG. Therefore, further clarification does not seem necessary.
NC RfG	VGBE	Article 14(5)(b)	The stakeholder proposes to remove the reference to the protection schemes and settings for internal electrical faults.	Partly agree	ACER acknowledges the need to clarify the interaction between the protection schemes and settings for internal faults and the capabilities of the PGM.
NC RfG	VGBE	Article 15(5)(a)(vi)	The stakeholder proposes to delete the provision regarding the capability of a PGM with black start capability to operate in LFSM-O and LFSM-U.	Partly agree	ACER acknowledges the need to clarify that the specific capability refers to operation during the system restoration phase.
NC RfG	VGBE	Article 17(2)(a)	The stakeholder proposes to refer to Article 1 of NC RfG regarding the reactive power capability of a SPGM. They advocate that system operators should use the requested capabilities.	Partly agree	Article 1 of NC RfG lays down the subject matter of the regulation inter alia obligations for ensuring that system operators use PGM capabilities transparently in a non-discriminatory and appropriate manner.
NC RfG	VGBE	Article 24, Article 26(2)	The stakeholder proposes clarifications regarding the frequency stability and fault-ride through capability requirements for AC-connected offshore power park modules.	Agree	ACER acknowledges the need to clarify the text of Articles 24 and 26. For consistency, Article 25(4), Article 26, Article 27 and Article 28 need to be amended.
NC RfG	VGBE	Article 37(7)	Regarding the Limited Operational Notification (LON) for type D PGMs and the referral of the issue to the regulatory authority by the facility owner following the refusal of the relevant system operator to grant an extension, the stakeholder proposes to keep the validity of the LON until the decision of the regulatory authority.	Disagree	The LON by definition has a limited nature and is granted to type D PGMs in relation to the specific circumstances listed in Article 37(1). Therefore, possible extension requires analysis on a case-by-case basis.
NC RfG	VGBE	Article 39(2)(c)	The stakeholder proposes not to include congestion management and defence measures to quantify the benefits to the internal market in electricity, cross-border trade and integration of renewable energies, since these terms are not defined.	Partly agree	The definition of congestion is included in Article 2 of the NC RfG. ACER acknowledges the need for relevant reference of defence measures.
NC RfG	VGBE	Article 45(2)(b)	The stakeholder proposes to replace the word simulating with the word creating, regarding the LFSM-U response test for type C SPGMs, since the test is not a simulation.	Disagree	Although the test is not a simulation the wording refers to simulated signals to be taken into account in the response test.
NC RfG	VGBE	Article 64(1)	Regarding the register of derogations, the stakeholder proposes to make the register publicly available.	Agree	ACER acknowledges to need to include relevant provision in the NC RfG.
NC RfG	VGBE	Title VI	The stakeholder proposes to delete Title VI on transitional arrangements for emerging technologies. The stakeholder argues that emerging technologies do not exist anymore.	Agree	The transitional arrangements for emerging technologies have proved to have limited value.
NC RfG	EUGINE	Article 2(5), Article 2(8), Article 2(10)	The stakeholder proposes minor modifications of definitions contained in Article 2 of NC RfG.	Disagree	The proposed amendments are not consistent with other provisions of NC RfG.



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	EUROPGEN	New paragraph after Article 3(2)(d)	The stakeholder proposes to exclude power-generating modules that are part of a power generating facility, where the power-generating facility under normal conditions is only absorbing active power from the connection point.	Disagree	A power generating module within a power generating facility should comply with the requirements as defined in the NC RfG.
NC RfG	EUGINE, Enercon, EFAC	Article 7, Article 29(2), new Article after Article 39	The stakeholders argue about the recognition of "prototypes" with new technologies within the NC RfG.	Disagree	By definition these technologies should be limited in numbers and in location and therefore this should better be covered by robust national regulatory frameworks.
NC RfG	EUROPGEN	Article 14(3)(a)(iv), Article 17(2)(a), Article 20(2)(a)	The stakeholder proposes to specify pre-fault reactive power and reactive power capability limits for the PGM, according to European standards.	Disagree	Article 14(3)(a)(iv) covers pre-fault and post-fault conditions for the fault-ride-through capability at the connection point, as specified by the TSO, and not at the PGM's terminals. The same applies to reactive power capability of PGMs which is specified at the connection point.
NC RfG	EUROPGEN, EUGINE, ENERCON	Article 14(3)(b), Article 16(3)(c)	The stakeholders propose that fault-ride-through capabilities in case of asymmetrical faults should not exceed the limits imposed under Article 14(3)(a) for symmetrical faults.	Disagree	The flexibility for TSOs to specify fault-ride-through capabilities in case of asymmetrical faults needs to be retained so that conditions at their local networks can be taken into account.
NC RfG	EUROPGEN	Article 14(5)(b)	With regard to electrical protection schemes and settings, the stakeholder proposes to specify that the requirement applies at the connection point.	Disagree	ACER considers that the current wording sufficiently describes the application of the requirements for electrical protection schemes and settings.
NC RfG	EUROPGEN	Article 61(1)	The stakeholder proposes that regulatory authorities should include information regarding how and to whom a derogation request should be submitted when publishing the criteria on their website.	Disagree	In ACER's view, the current provisions of Title V sufficiently describe the procedural rules regarding derogation requests.
NC RfG	EUGINE	Article 14(5)(b)(iii), Article 15(4)(d)	The stakeholder proposes to reduce the number of protections schemes that may be required by the relevant system operator as some of these functions would imply a considerable increase in the cost of Type B units. The recommendation is to reduce the scope of the required protections for Type B and increase the list within type C.	Disagree	The flexibility for the relevant system operator to decide on the necessary protection scheme aspects based on their network and the available generation fleet should be retained.
NC RfG	smartEn	Article 13(1)(a)(ii)	The stakeholder proposes to delete the provision that the relevant system operator, in coordination with the relevant TSO, and the power-generating facility owner may agree on wider frequency ranges, longer minimum times for operation or specific requirements for combined frequency and voltage deviations to ensure the best use of the technical capabilities of a power-generating module.	Disagree	ACER understands the benefit of PGMs continuous system support and contribution to overall system robustness under system conditions beyond the frequency or voltage defined in NC RfG. Nevertheless, the agreement of the power-generating facility owner to provide extended capabilities is of paramount importance, respecting their economic and technical feasibility.
NC RfG	smartEn	New article after Article 19	The stakeholder proposes that the requirements for type A PPMs follow all those applicable to type B PPMs.	Partly agree	It is deemed necessary for smaller PPMs to support the system. In accordance with ACER Policy paper adequate technical requirements for type A PGMs should be introduced, accordingly.
NC RfG	smartEn	Article 30	The stakeholder proposes amendments to the operational notification of type A PGMs. The stakeholder proposes a national digital tool for the registration of the asset. Furthermore, the responsible SO should be automatically informed of the new unit and has one month to refuse the grid connection, otherwise the facility owner has the right to put the unit in operation.	Disagree	As to date, the specific technology used for the submission of the relevant installation documents is deemed a national issue, therefore the current provisions are adequately described. Article 30 describes the operational notification procedure for the submission of an installation document and does not cover the acceptance or refusal of the relevant system operator. In any case it is not deemed appropriate to allow connection of a PGM without the explicit consent of the relevant system operator.
NC RfG	Swedenergy, Eurelectric	Article 14(3)(a)	The stakeholders propose to allow the increase of the clearing time for fault-ride-through capability for specific PGMs if system protection and secure operation so requires.	Partly agree	Wider ranges should apply where justified by system protection and secure operation needs.
NC RfG	Swedenergy, Eurelectric	Article 21(3), Article 21(3)(d)	The stakeholders propose to add the possibility to utilise another point than the connection point for reactive power provision upon approval from the regulatory authority.	Disagree	The regulatory authorities are entitled to grant derogations under Title V of NC RfG.
NC RfG	EUTurbines, CogenEurope	Article 7(3)(f)	The stakeholders propose that TSOs or ENTSOE should inform national and European technical committees respectively on applicable new requirements in due time.	Disagree	It is not deemed necessary to introduce legal obligation related to informing national and European technical committees within the NC RfG framework.
NC RfG	Eurelectric	Article 21(3)(d)(iv)	The stakeholder proposes to specify maximum capacitive value of Q/Pmax=+0.2 regarding the reactive power response of the PPM following a step change in voltage.	Disagree	Reactive power control is a basic requirement for controlling the voltage in order to operate the network within the voltage ranges at the connection point and to maintain voltage stability. The ranges for the design parameters following a step change in voltage are provided in Article 21(3)(d)(iv) and specified by the relevant system operator based on their local network.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	Mercedes Benz AG	Article 38, Article 39	The stakeholder proposes an explicit inclusion of electromobility technologies in CBA principles.	Partly agree	All relevant available network-based or market-based alternatives should be taken under consideration. ACER considers that the current wording of Article 38 and 39 sufficiently captures the need to take into account all relevant alternatives for the comparison of costs and benefits.
NC RfG	Better Energy SA	Article 21(3)(b), new paragraph after Article 21(3)(f)	The stakeholder proposes to clarify that the maximum capacity in this paragraph refers to the maximum active power that can be provided when providing reactive power. When provision of reactive power is not requested by a system operator or a TSO, the provision of active power is not limited under this regulation. Furthermore, the requirements can only limit the active power to an absolute minimum and only to the amount that is necessary.	Disagree	Article 21(3)(b) refers to the reactive power capability of the type C PPM at maximum capacity, whereas Article 21(3)(c) refers to the reactive power capability below maximum capacity. Furthermore, the reactive power provision capability requirement applies at the connection point.
NC RfG	ENERCON	Article 2(22)	The stakeholder proposes to change the definition of 'frequency', as, according to the stakeholder, the present definition has no value for a technical requirement related to the "electric frequency of the system", or any physical value. In addition, the stakeholder proposes to include that the frequency is calculated based on the measurement of this physical quantity over a gliding 200 ms time window.	Disagree	The current definition of frequency is sufficient to define the term for the purposes of the NC RfG. Furthermore, measurement window can vary depending on the application.
NC RfG	ENERCON	New Article after Article 12	The stakeholder proposes to add an article on power supply quality objective. The relevant TSO, in coordination with the national regulatory authority and at least the neighbouring TSOs, defines quantitative quality objectives for the power system frequency. The quality criteria cover how accurate the nominal value 50 Hz frequency should be achieved, on a yearly and monthly average.	Disagree	The NC RfG defines capability requirements for PGMs for connection. The operation of the system is covered by the SO GL.
NC RfG	Green Power Denmark	New paragraph after Article 13(7)	The stakeholder proposes to include requirements in relation to power quality, such as emission, inter-harmonic emission, Flicker, Rapid voltage changes, and voltage unbalance.	Disagree	Power quality is indeed important for the end consumer and user. However, it is deemed appropriate that power quality issues are tackled at the national level.
NC RfG	Green Power Denmark	Article 14(5), Article 15(6)(e)	Extend ramping limits (i.e. SOs to set min/max limits on rates of changes of active power output) also to type B PGMs to minimise the active power fluctuations of the grid with higher penetration of RES, i.e. Article 15(6)(e) to Article 14(5).	Disagree	Although ramping requirements for type B PGMs may be needed at some point in the future, it could be disproportionate and too costly to implement those (also) for smaller PGMs.
NC RfG	Green Power Denmark	Article 32, Article 33, Article 34, Article 35, Article 36	The stakeholder proposes to remove Article 32, in order to include power-generating modules of type B and C in the process laid down in Articles 33-37.	Disagree	The operational notification procedure for connection of type D PGMs is comprised of more steps due to the size of these PGMs and their impact on the system. Therefore, imposing this procedure to types B and C PGMs is deemed disproportionate.
NC RfG	Edison S.p.A, Eurelectric, Bundesverband Energiespeicher Systeme e.V.	New paragraph after Article 2(65), Article 3	The stakeholders proposed to add a definition of 'fully integrated network components', included on Directive (UE) 2019/944 (network components integrated into the transmission or distribution system, including storage facilities, which are used for the sole purpose of ensuring secure and reliable operation of the transmission or distribution system, and not for balancing or congestion management purposes. Also, one stakeholder (Eurelectric) proposed not to apply the Regulation to storages owned by system operators which are considered as fully integrated elements serving the purpose of providing security of supply at specific points in the system and where they are not participating in electricity markets.	Partly agree	The definition of the fully integrated network components as in the Directive does not need to be replicated in the NC RfG because of the reference to the Directive. Nevertheless, ACER considers that the clarity on the application of the NC RfG to fully integrated network components is beneficial and has been added to the text.
NC RfG	VDE-FNN	New paragraph after Article 13(2)(g)	The stakeholder proposes to add a paragraph regarding stable LFSM-O control. All PGMs must contribute adequately to the stability of the interconnected system. A closed loop setup for a PGM with a defined contingency is suitable to reproduce conditions relevant for the contribution of the PGM to power system stability (e.g. LFSM and others).	Partly agree	The PGM should be capable of operating stably during LFSM-O operation, as indicated in Article 13(2)(g).
NC RfG	VDE-FNN, Bundesverband Energiespeicher Systeme e.V.	New paragraph after Article 13(7), Article 15(2)(c)	One stakeholder proposes to delete Article 15(2)(c) related to the requirements for LFSM-U for type C PGMs as there is a proposal by the stakeholder to transfer the requirement to type A PGMs. Another stakeholder proposes to include LFSM-U for electricity storage modules of type A (but not for PGMs of type A).	Partly agree	The requirement should be limited to relevant ESM only.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views
NC RfG	Energie-Nederland, Undisclosed stakeholder	Article 15(6)(e)	<p>The stakeholders propose to delete the Article or at least change from "relevant SO should specify" to "SO may specify" ramping limits, as the market and the plant operator determines the ramping of the generator carrying the financial responsibility as part of a BRP. Any ramping requirements limit the most economical dispatch. There is no justification to limit the ramping rates and the relevant system operators should at least have the option not to specify ramping limits.</p> <p>Another stakeholder proposes to further detail and harmonise the ramping requirements by adding a second sentence ("The rate of change of active power output at the transition of market time units, due to a planned change of power schedules not requested by the relevant system operator, should be limited to a maximum value of 10 % of the maximum capacity per minute.") in order to maintain frequency stability and minimise deterministic frequency deviations occurring at (full and quarterly hour) market time units.</p>	<p>Disagree</p> <p>To maintain system stability is an overarching priority task of System Operators (DSOs/TSOs). For example, to effectively minimise deterministic frequency deviations, the specification of ramping requirements for larger PGMs (as from type C on) is a necessary and powerful means that cannot be discarded. The relevant SO already has discretion to determine (looser or stricter) ramping limits.</p> <p>Current provision already defines the requirement to specify minimum and maximum limits on rates of change of active power output (ramping limits). Furthermore, regarding the proposal to further harmonise the ramping requirements by adding the mentioned provision, the "planned change of power schedules not requested by the relevant system operator" is understood as an implicit reference to commercial trade schedules ("not requested by the relevant system operator" means that it is an outcome of the market), but then it is unclear how/why the requirement on a technical capability of an asset is triggered ("due to a planned change...") by a market related situation, especially since the granularity of some of these markets are the portfolio on a bidding zone level. In addition, even if a maximum value were to be set (to be applied as a cap to the values that can be defined pursuant to Article 137(4) of the SO Regulation), it seems more logical that the place for it would be the SO Regulation (and most probably, the exact same Article mentioned earlier, which allows for setting maximum ramping rates).</p>
NC RfG	CharIN, smartEn	Article 10(2), Article 15(2)(c)(v)	<p>One stakeholder proposes to delete current paragraph (v) regarding stable operation of the PGM during LFSM-U operation. Furthermore, the stakeholder proposes to add that the TSO/DSOs must make requirements for instrumentation publicly available. Another stakeholder proposes that regulatory authorities should make publicly available final and intermediate versions for thresholds, report or cost benefit analysis.</p>	<p>Partly agree</p> <p>Stable operation of the PGM during LFSM-U operation is important and should be ensured. According to the current regulatory framework, system operators should ensure that prospective power-generating facility owners have access to the relevant requirements.</p>
NC RfG	Gunnar KAESTLE	Article 2(5)	<p>The stakeholder proposes to rephrase the power generating module in such a way, that both subtypes have basically the same structure, as the current definition does not allow a common requirement on power generating modules, as this is sometimes a cluster of units (inverter-based generator) and sometimes a single unit (synchronous generator).</p>	<p>Partly agree</p> <p>ACER acknowledges the need to amend the definitions of SPGMs and PPMs.</p>
NC RfG	Gunnar KAESTLE	Article 13(2)	<p>The stakeholder proposes that the text in figure 1 about the Pref needs to be revised in such a sense that Pref should be the default value for both PPMs and synchronous PGMs.</p>	<p>Disagree</p> <p>According to the current understanding, the option to define Pref differently for PPMs should be retained as it allows for taking into account different operating regimes of these modules. These options would enable at system level an equitable active power response to a high frequency event regardless of the number of power generating modules in operation.</p>
NC RfG	Svensk Solenergi	Article 13(2)(b)	<p>The stakeholder proposes that the automatic disconnection and reconnection of power-generating modules of Type A at randomised frequencies, ideally uniformly distributed, above a frequency threshold, as determined by the relevant TSO may be chosen unless there is a market-based solution dealing with the issue.</p>	<p>Disagree</p> <p>ACER highlights that market issues are outside of the scope of the NC RfG.</p>
NC RfG	Svensk Solenergi, SolarPower Europe	Article 30(2), Article 32(2)	<p>The stakeholders propose that, instead of the relevant system operator, the regulatory authority or the member states should specify the content of the installation document and power-generating module document. Furthermore, one stakeholder proposes that the contact details of the power-generating facility owner and the installer and their signatures should not be included in the installation document.</p>	<p>Disagree</p> <p>These documents are technical documents and therefore the relevant system operator is the appropriate entity to define the contents. Furthermore, the contact details and signature are important to be included and do not require additional effort from the owner's side.</p>
NC RfG	Bundesverband Solarwirtschaft e.V., SolarPower Europe, Svensk Solenergi	New paragraph after Article 13(7), Article 71	<p>The stakeholders propose the relevant system operator cannot apply requirements other than defined in this regulation unless the national regulatory authority has evaluated and approved the requirements in consultation with relevant stakeholders. One proposal refers to the activation of additional power reduction requirements, aside from countering unforeseen short-term events to ensure grid stability, that must be based on an agreement with the party concerned.</p>	<p>Partly agree</p> <p>ACER considers that the current regulatory framework (in particular Articles 7 and 71) lays down adequate provisions for application of NC RfG.</p>



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	Bundesverband Solarwirtschaft e.V.	Article 3(2)(d)	The stakeholder proposes to include text that the regulation should not apply to storages owned by system operators which are considered as fully integrated elements serving the purpose of providing security of supply at specific points in the system and where they are not participating in electricity markets.	Partly agree	In ACER's view, the current provisions of NC RfG sufficiently cover this regulatory issue.
NC RfG	Enercon	Article 20(2)(b)	Regarding the capability to provide fast fault current, the stakeholder proposes to add the word "only" referring to the conditions.	Partly agree	ACER acknowledges the need to clarify the text of Article 20(2)(b) to better reflect Articles 20(2)(b)(i) and (ii).
NC RfG	ENTSO-E, Oesterreichs Energie	Article 2(16)	The stakeholders propose to clarify that Pmax is not the net power at the connection point but the output power of the generator less auxiliary power and losses (in dedicated infrastructure such as step-up, feeders of wind farms, ...), where this is inseparable from the generator output.	Agree	ACER acknowledges the need to clarify the definition of maximum capacity so that there is no ambiguity regarding its interpretation.
NC RfG	Swedenergy, Volkswagen Group, SmartEn, Undisclosed stakeholder	Article 2(16)	One stakeholder proposes to define maximum capacity' or 'Pmax' as the maximum continuous active power which a power-generating module can produce at least 95% of the time. Another stakeholder proposes that the maximum capacity for power generating facilities should be defined by the maximum possible simultaneous generation, e.g. a charging park with a power limiting energy management system or a lower power line or fuse capacity than the sum of the charge points should have a Pmax of this lower limit. One stakeholder proposes to define maximum capacity as the maximum export capacity.	Partly agree	NC RfG provides for capabilities for PGMs in order to support the electricity system. It is important that the requirements applied to the PGMs are proportionate to the maximum capacity of the PGM, as specified in the connection agreement or as agreed between the relevant system operator and the power-generating facility owner.
NC RfG	Enercon	Article 14(3)(a)	The stakeholder proposes that the fault-ride-through capability does not apply if the average active power of the power-generating module in a 10 second interval directly prior to the start of the grid-fault incident was: - below the agreed minimum stable operating level, or - below 5% of the nominal power of the power-generating module, for those using volatile renewable energy sources.	Partly agree	The fault-ride-through capability should not apply when the PGM is operating below the agreed minimum stable operating level.
NC DC	ENTSO-E	Article 15(1)	The stakeholder proposes to clarify the reactive power range within which transmission-connected demand facilities and transmission-connected distribution systems should be capable of maintaining their steady-state operation at their connection point. In addition, the wording import/export is proposed to be changed as it has led to confusion during several national implementations where import or export could depend on the point of view.	Agree	ACER acknowledges the need to clarify the reactive power range and the wording so that there is no ambiguity regarding its interpretation.
NC DC	ENTSO-E	Article 15(2), Article 43(1)	The stakeholder proposes to greatly simplify the formulation of Article 15(2) by keeping the need for DSO to be capable of not exporting reactive power in specific circumstances, low active power exchange and high penetration of decentralised generation. The Article is made more clearly non-exhaustive (thresholds to be defined) and the need for the joint analysis focused on the justification of the non-exhaustive values. Compliance verification is adapted accordingly: The built points in Article 43.1 are harmonised with requirements in Article 15.2. Finally, as Article 15.2 applies to transmission-connected distribution systems, so is the Article 43.	Agree	ACER acknowledges the need to clarify and simplify the formulation of relevant articles regarding the capability of not exporting reactive power in specific circumstances so that there is no ambiguity regarding their interpretation.
NC DC	ENTSO-E	Article 9(1)(c) and (d), Article 19(4)(c)	The stakeholder proposes to clarify the technical requirements for demand disconnection and reconnection. In the proposal it is clarified what is covered by the maximum total tripping time to provide a clear specification and it is specified the relay accuracy to make clear what frequency measurement tolerance is required in case of quick activation of LFDD. In addition, the capability to disconnect remotely is clarified.	Agree	ACER acknowledges the need to clarify the formulation of the relevant articles regarding the technical requirements for demand disconnection and reconnection.
NC DC	ENTSO-E	Article 20	The stakeholder proposes to modify the article on power quality so that it provides clarification that power quality parameters should not be only limited to fluctuation and distortion of voltage sinus wave but to all relevant power quality parameters, according to specification of relevant TSO, at the connection point.	Disagree	Power quality requirements beyond the ones specified in Article 20 may be provided in national legislation taking into consideration agreed European standards.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC DC	ENTSO-E	Article 21(3) and (4)	The stakeholder proposes to clarify the content and format of simulation models, based on the GC ESC's Expert Group "Interaction Studies and Simulation Models (EG ISSM)".	Agree	ACER acknowledges the need to clarify the content and format of simulations models, in line with the GC ESC's Expert Group "Interaction Studies and Simulation Models (EG ISSM)".
NC DC	ENTSO-E	Article 21(5)	The stakeholder proposes that only the TSO should specify the requirements of the performance of the recordings in coordination with relevant system operators.	Partly agree	ACER understands that the relevant TSO should prepare such specifications for transmission-connected system users in coordination with relevant system operators.
NC DC	ENTSO-E	Annex I	When a system split is occurring, frequency in the overfrequency island can transiently overshoot before it is stabilised to a lower value (a simulation plot is attached below). If, during that transient, all load is tripped due to transient over-frequency, the island will black out, even if it would have been possible to stabilise the frequency below 51.5 Hz. This system behaviour will be aggravated with decreasing system inertia. The stakeholder proposes to include an additional frequency range to cover over-frequency transients above 51.5Hz to 52.5Hz.  The proposed modification delays the tripping of load during the transient and therefore prevents the island from blacking out. By this, it is increasing system resilience.	Agree	ACER acknowledges the need to increase system resilience during over-frequency transients when a system split occurs.
NC DC	ENTSO-E	Annex II	The stakeholder proposes amendments to the voltage ranges that transmission connected users should fulfil relating to voltage stability. It is proposed to align the NC with the capability defined by standards when it does not affect system needs (<400kV) and keep the NC requirement associated to 400kV with exception of Baltic SA where value is also modified due to the fact it goes beyond standard values as well.	Agree	ACER acknowledges the need to amend the voltage ranges, while maintaining sufficient levels of system robustness. Particularly it is deemed necessary to amend the upper limit of the voltage range as this corresponds to too onerous requirement for 400kV connected system users. Moreover, ACER recognises a broad agreement for basic voltage stability requirements for system users connected below 110kV level. For higher voltage levels specifying voltage ranges according to the rated voltage can be deemed proportional.
NC DC	IFIEC Europe	Article 19	The stakeholder proposes that the capabilities for demand reconnection and disconnection, even though required to be provided, should not be lightly used as disconnection might be fast but reconnection might take very long (even up to weeks or months in case of important damages to installations) and would involve sometimes very important costs for these facilities and could even create safety risks. Therefore, the automatic low frequency disconnection should take into account not only system security but also costs and risks for the concerned demand facilities	Partly agree	It should be ensured that network operation measures, such as demand disconnection, should be proportional and non-discriminatory. However, ACER highlights that system operation issues are outside the scope of grid connection codes.
NC DC	CharIN	Article 28(2)	The stakeholder proposes to add that in accordance with Article 9, a demand facility only has to fulfil the publicly available requirements at the respective date.	Partly agree	According to the current regulatory framework, system operators should ensure that prospective power-generating facility owners have access to the relevant requirements.
NC DC	CharIN	New paragraph after Article 29(2)	The stakeholder proposes to add that small demand units with flexibility capabilities, e.g. storages, heat pumps and electric vehicles, may offer their fast demand response to the overall system. Maximum reaction times and measurement precision should be made public by the manufacturer and no external certification or notification to system operators (SO) needed. A single self-declaration of the offered capabilities should be sufficient for all European system operators.	Partly agree	Specific technical requirements and compliance rules for these units are included in the amendment proposal. The referred provisions aim to ensure a proportional contribution to the system security.
NC DC	CharIN	New paragraph after Article 32(6)(e)	The stakeholder proposes that the TSO should offer simplified procedures for low power demand facilities (<12kW).	Partly agree	Current rules on operational notification procedures differentiate between units connected below and above 1000V. Furthermore Article 6(3)(a) and (c) state that when applying NC DC, system operators should ensure proportionality, non-discrimination and application of the principle of optimisation between the highest overall efficiency and lowest total costs for all parties involved.
NC DC	Edison S.p.A, Eurelectric	Article 29(2)(f) and (g), Article 30(2)(c)	The stakeholders propose to delete these articles as they should be part of an equipment technical standard document rather than a network code.	Disagree	The NC DC provides for minimum harmonisation of technical requirements on a European scale. This is without prejudice to taking into consideration agreed European standards and technical specifications while applying NC DC.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC DC	Undisclosed stakeholder	Article 27, Article 28, Article 29, Article 30	The stakeholder proposes to remove the service for demand response transmission constraint management and substitute the service for very fast active power control with system voltage control. The stakeholder considers that very fast active power control is included in the system frequency control service.	Disagree	Demand response transmission constraint management is a service provided by the demand response units to the system operators to help the management of transmission constraints. Therefore, ACER does not consider appropriate to remove this service. Furthermore, according to Articles 2(20) and 2(21), system frequency control is response to frequency fluctuations whereas very fast active power control aims to capture fast frequency deviations. In addition, according to Article 2(17) reactive power control, which is affecting the system voltage, is a service that is available for modulation by the relevant system operator, as they have complete view of the system voltages, and not to be autonomously controlled. Therefore, ACER does not deem appropriate to substitute the service for very fast active power control with system voltage control.



**16. DEMONSTRATION OF COMPLIANCE**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC RfG	Enercon	Article 2(47)	The stakeholder proposes to add to the definition of 'equipment certificate' that the test and certification procedure should be harmonised among the EU Member States.	-	ACER understands that there are discussions ongoing between ENTSO-E and the GC ESC Expert Group "Harmonisation of Certification and product Family grouping" regarding a common legal text proposal. However, by the time the evaluation report and the legal text proposals have been internally processed, ACER had not received a common proposal. Nevertheless, within the framework of the relevant EU legislation, ACER is willing to consider a common proposal for the legal text agreed between the relevant parties in the coming months.
NC RfG	EFAC	Article 2(46)	The stakeholder proposes to clarify that any authorised certifier issuing an equipment certificate should hold a valid accreditation according to the accreditation standard on product certification, i.e. ISO/IEC 17065.	-	
NC RfG	EFAC	Article 2(47)	The stakeholder proposes to clarify that any equipment certificate issued under the regime of this Regulation is a) based on certification scheme (as required by ISO/IEC 17065) according to ISO/IEC 17067, b) issued based on a conformity assessment with respect to specified requirements. The term "specified requirements" is proposed to be used, as taken from ISO/IEC 17000 (conformity assessment). Furthermore, the term "validation" is proposed instead of "verification" of models.	-	
NC RfG	EFAC	New paragraph after Article 2(65)	The stakeholder proposes to add the definition of 'Power Generating Unit (PGU)'.	-	
NC RfG	EFAC	New paragraph after Article 2(65)	The stakeholder proposes to add the definition of 'component'.	-	
NC RfG	EFAC	New paragraph after Article 30(2), Article 31, new paragraph after Article 35(3)	The stakeholder proposes to add a new paragraph to ensure that an acceptance of equipment certificates is facilitated by a clear specification by the RSO on a) respectively accepted certification schemes and b) respectively accepted specified requirements, e.g. grid codes, from other Member States, on which the conformity assessment is performed.	-	
NC RfG	EFAC	Article 32(2)(d), new paragraph after Article 32(6)	The stakeholder proposes to remove the phrase 'in respect of power generating modules', as equipment certificates, in general, may not be issued in respect of a PGM, as for PGUs and component the final project characteristic are not defined. Furthermore, a new paragraph after Article 32(6) is proposed to enable that the consecutive scheme of EON, ION and FON may be also applied for type B and C PGMs, as this is the practise e.g., in Germany.	-	
NC RfG	EUTurbines	New paragraphs after Article 2(65)	The stakeholder proposes to add the definitions of 'families', 'variant' and 'simulation software'.	-	
NC RfG	EUROPGEN, EUGINE	New paragraph after Article 2(10), new paragraphs after Article 2(65)	One stakeholder proposes to add the definition of 'power generating module statement'. The stakeholders propose to add the definitions of 'power generating unit family' and 'power generating unit family certificate'.	-	
NC RfG	EUGINE	New paragraph after Article 3(2)	The stakeholder proposes to introduce a new paragraph describing the power generating unit family and the conditions that need to be met to consider that a group of PGUs belong to a specific family. The proposal defines the conditions for SPGUs, wind PGU and converter-based PPM units. The stakeholder argues that certification and family concepts are on PGU and not PGM level. PGU Family definition is missing in existing NC RfG and is essential for acceptance of PGU certification among EU countries.	-	
NC RfG	Bundesverband Energiespeicher Systeme e.V.	Article 30	The stakeholder argues that the use of equipment certificates issued by an authorised certification institution should be permitted.	-	
NC RfG	Bundesverband Energiespeicher Systeme e.V.	New paragraph after Article 42(4)	The stakeholder proposes that the owner of the installation should be responsible for carrying out the relevant updates to the installation to ensure its correct operation throughout its useful life. Moreover, system operator should have a right to require necessary information for the analysis of incidents in its networks.	-	

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	Undisclosed stakeholder	Article 31	The stakeholder advocates for the use of equipment certificates issued by an authorised certifier in the operational notification procedure for connection of each new type C and D power-generating module.	-	
NC RfG	Undisclosed stakeholder	Articles 40, 41, 42 and 43	One stakeholder recommends introducing a unique equipment certificate model in the EU for all types of power-generating modules in order to prevent market fragmentation. Such certificates should be valid only when issued by European certification body located in the EU in order to ensure product safety. Moreover, the stakeholder puts forward an amendment proposal to allow the verification of compliance with the NC RfG of PGMs through automated and automatic type-testing of devices based on existing standards for installation. As a result, testing should only take place when the related devices are not installed according to such standardised type-testing procedures.	-	
NC RfG	CogenEurope	New paragraphs after: Article 41(6), Article 42(2)(c), Article 42(4) and Article 43(5)	The stakeholder proposes amendments to the compliance demonstration rules. In principle, amendments aim at improving provisions on compliance testing by allowing the use of equipment certificates. In addition, the stakeholder suggests that the relevant system operator should allow the use of compliance simulation as described in Article 43(2) also for Type A and Type B power-generating modules.	-	
NC RfG	smartEn	Article 2(46) and a new paragraph after Article 2(65)	The stakeholder proposes the introduction of a notion of type-test certificate and suggests corresponding changes to the definition of an authorised certifier.	-	

**17. OTHER AREAS NOT COVERED BY THE POLICY PAPER EXPLICITLY**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
Response refers to:	Name of stakeholder(s)	Reference to Article(s) / paragraph(s) of existing NC where proposed amendment is located	Summary of stakeholders' response	ACER position	Reasoning
NC DC	ENTSO-E	Article 14(1)	Stakeholder proposes to include the word "relevant" referring to the transmission network elements, as not all elements should be considered by the TSO for specifying the short-circuit current.	Agree	ACER agrees that the proposed amendment further clarifies the transmission network elements that should be considered by the TSO when specifying the maximum short-circuit current.
NC DC	ENTSO-E	Article 14(2), new paragraph after existing Article 14(2)	Stakeholder proposes to replace the wording "short-circuit currents" with "short-circuit current contribution" for accuracy of the requirement. Furthermore, a new paragraph is proposed to include the delivery of an estimate of the short-circuit current contribution by the relevant transmission-connected demand facility owner or the transmission-connected distribution system operator to the relevant TSO.	Agree	ACER agrees that the proposed amendments further clarify the estimation of the maximum and minimum short-circuit current to be expected at the connection point by considering both sides of the interface between the TSO and the transmission-connected demand facility or the transmission-connected distribution system, since both are influencing the respective other side in terms of short circuits. Therefore, both sides need the information in terms of short circuit current contribution of the respective other side.
NC DC	ENTSO-E	Article 14(3), Article 14(4), Article 14(5), Article 14(6), Article 14(7), Article 14(8) and Article 14(9)	The stakeholder proposes to delete paragraphs 3-9 of Article 14 as these are not related to connection capabilities but to operational planning.	Agree	Paragraphs 1 and 2 of Article 14 relate to design values for the connection of electrical equipment in order to cater for their safe operation. However, the paragraphs covered by the proposed amendment relate to operational planning, as they refer to planned and unplanned events and therefore are the subject of and covered by the SO Regulation.
NC DC	Oesterreichs Energie	Article 14	The stakeholder proposes to delete the entire Article 14 due to lack of clarity with the risk that the requirement is not implemented coherently in each EU Member State.	Partly agree	Paragraphs 1 and 2 of Article 14 relate to design values for the connection of electrical equipment in order to cater for their safe operation and therefore they should not be deleted. However, paragraphs 3-9 relate to operational planning, as they refer to planned and unplanned events and therefore are the subject of and covered by the SO Regulation and can be deleted, as proposed by ENTSO-E.
NC RfG	ENTSO-E	Article 25(1)	The stakeholder proposes to replace Table 10 of Article 25(1) with a new one containing the changes in values for voltage levels above 110 kV. It is also proposed that for all voltage levels below 110kV the time periods and voltage ranges should be specified by the relevant system operator.	Agree	ACER acknowledges the need to amend the voltage ranges, while maintaining sufficient levels of system robustness. For higher voltage levels specifying voltage ranges according to the rated voltage can be deemed proportional.
NC RfG	ENTSO-E, Eurelectric, Edison S.p.A., VDE FNN, Enercon, CENELEC TC8X	New paragraph after Article 14(3)(c), Article 13(4), Article 15(4)	The stakeholder proposes to introduce a new high-voltage-ride-through requirement for type B PGMs and above. It is important that power generating modules stay connected during overvoltage situations as they contribute to both frequency stability and voltage support. In case of disconnection, voltage will degrade even more, impacting other equipment's connected to the network. Other stakeholders propose that type A (or type A+) PGMs have an over-voltage-ride-through (OVRT) capability at the SO's discretion. Another stakeholder proposes that type C PGMs have an over-voltage-ride-through (OVRT) capability at the SO's discretion.	Agree	ACER acknowledges the need for this new technical requirement. However, it is appropriate to request this capability from type B PGMs onwards.
NC RfG	Syndicat des Energies Renouvelables, VGBE	New Article in Chapter 4, Requirements for offshore power park modules, Article 25(1)	The stakeholder proposes to introduce an obligation of coordination between TSO and PPM-DC/AC for the following subjects (no legal text provided): <ul style="list-style-type: none"> <li>On load tap changer design on main transformer located at TSO's Offshore Substation (OSS) and offshore power-generating modules</li> <li>Definition and control of HVDC voltage level/range at the PCC in case of absence of an on-load tap changer Earthing system of the neutral-point of the OSS main transformer's "low voltage" side at the PCC (provided by TSO)</li> </ul> Another stakeholder proposes amendment regarding the transformer the offshore power park modules are connected.	Partly agree	ACER considers that the coordination and cooperation between the relevant System Operator and the owner of the Offshore Power Park Module is indeed important throughout the connection stages. Furthermore, the proposed ENTSO-E amendment to Table 10 of Article 25(1) regarding the voltage ranges according to the rated voltage can be deemed proportional. However, the NC RfG provides the connection requirements and does not go in detail as to the equipment needed for the connection to the network, as this is part of the detailed assessment of the relevant System Operator. Furthermore, according to Article 15(6)(f,) earthing arrangement of the neutral-point at the network side of step-up transformers should comply with the specifications of the relevant system operator.
NC RfG	Syndicat des Energies Renouvelables	Article 25(1)	The stakeholder proposes to modify the voltage range requirements for offshore PPMs (no legal text provided)	Agree	See proposed amendment regarding Table 10 of Article 25(1).

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	Vestas Wind Systems AS, WindEurope	New paragraph after Article 25(5), new paragraph in Article 20(3)	The stakeholders propose to add another paragraph to specify limits for forced oscillations of active power generated by offshore power park modules	Partly agree	System stability is very important in view of the system decarbonisation where a greater proportion of power electronics connected generation will be present in the system, displacing other conventional technologies such as synchronous generators. Therefore, in principle, it is important for such devices to aid the damping of system oscillations but in addition, the control characteristics of the connected generation should not adversely affect the damping of power oscillations. If any, such limits to the allowed amplitude of forced oscillations of active power generated by offshore power park modules should be specified by the relevant system operator taking into account the local conditions but also the system-wide perspective.  However, ACER understands that there are discussions ongoing between ENTSO-E and relevant stakeholders regarding setting appropriate limits for forced oscillations. ACER is willing to consider a compromise solution for the legal text agreed between the relevant parties in the coming months.
NC DC	ENTSO-E	New Title after existing Title III	The stakeholder proposes to add new frequency requirement called Limited Frequency Sensitive Mode for Under-frequency for Consumption (LFSM-UC) for electrical charging demand units, power-to-gas demand units and temperature-controlled devices. More specifically LFSM-UC is foreseen as a second last defence line before the Low Frequency Demand Disconnection (LFDD) is activated automatically. Due to the proportional nature of LFSM-UC, it is expected this demand will respond before the normal widespread arbitrary demand disconnection of users occurs.	Partly agree	To prevent a total system collapse, during large disturbances in the network, for example caused by the loss of one or several generation units, the automatic load shedding relays disconnect a part of the load, causing a partial black-out of the system. This automatic activation of the Low Frequency Demand Disconnection (LFDD) is the last defence line to prevent a total black-out of the system. In the future, issues with existing LFDD-schemes are foreseen. Historically LFDD disconnects demand to restore frequency but due to increased distributed generation and the location of LFDD-relays, along with demand, distributed generation resources could also be disconnected. Consequently, the effectiveness of LFDD is expected to be reduced. By requiring certain demand units to support system frequency by limiting their actual demand in response to a drop in the frequency, without negative consequences for the grid user, activation of LFDD should be able to be prevented and thus large-scale system blackouts should be prevented. However, ACER considers that the scope of application for temperature-controlled devices should be limited to heat pumps and power-to-gas demand units since other temperature-controlled devices, such as fridges, are legacy devices.
NC DC	CENELEC TC8X, VDE-FNN, Gunnar Kaestle	New paragraph after Article 12(2)	The stakeholders propose to add new frequency requirement called Limited Frequency Sensitive Mode for Under-frequency (LFSM-U) for 'dispatchable loads' such as electric vehicle charging stations and electrolysers. 'Dispatchable load' means a load for which the active power consumption can be modified while maintaining the functionality of that load within an acceptable range of parameters. The dispatchable load should be capable of activating the provision of active power frequency response at a frequency threshold and droop settings specified by the relevant TSO.	Agree	ACER agrees with the idea but the units to be considered and the concrete legal wording needs to be adapted for clarity. The revised legal text introduces a new frequency requirement called Limited Frequency Sensitive Mode for Under-frequency for Consumption (LFSM-UC).
NC RfG	CharIn	Various articles	The stakeholder suggests replacing the wording "power-generating module" with "power-generating or storage module" throughout NC RfG.	Disagree	According to the new definition, electricity storage module is a power generating module.
NC RfG	Better Energy SA, VW Group	Recital 15	One stakeholder suggests providing that requirements must, instead of should, be based on the principles of non-discrimination and transparency as well as on the principle of optimisation between the highest overall efficiency and lowest total cost for all involved parties. It was also proposed to state in the recital that the interests and expectations of all involved parties must be taken into account. One stakeholder proposes to include in the recital that the TSOs and DSOs should make the requirements publicly available.	Disagree	ACER disagrees with the proposal as the recitals cannot contain legally binding provisions.
NC RfG	Bundesverband Solarwirtschaft eV	New recital	The stakeholder suggests providing that where the secure and cost-efficient operation of national networks require advanced technical capabilities due to a high penetration of distributed energy resources (DER), such as synthetic inertia or flexibility, those should be procured using market-based mechanisms under Article 32 of the Directive (EU) 2019/944 or under the System Operation Regulation (EU) 2017/1485.	Disagree	The legal framework for advanced capabilities consists of three pillars: Grid connection requirements, ancillary services and fully integrated network components. The three pillars complement each other.  Legally binding grid connection requirements may serve as a jump start for investments in the new technology. The PGM owners willing to participate in any market-based procurement need the new technology available before they can participate in any corresponding tender procedure. There is a risk that this hen egg problem will remain if there are no binding grid connection requirements in place.



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views
				The urgency for grid forming capable PPMs in terms of time and system security dictates that not only incentives but also regulatory law is applied. Regulation (EU) 2019/943 allows the adoption of grid connection requirements in the RfG as a delegated act of the Commission. The provisions in the Directive (EU) 2019/944 do not limit this competence of the Commission. Rather, the SOs may procure ancillary services, such as inertia and short-circuit current, if and to the extent that a procurement regime has been established under the national provisions implementing Articles 31 and 40 of Directive (EU) 2019/944. Under those directive provisions, the NRA may assess that the market-based provision of non-frequency ancillary services is economically not efficient. Such assessment is likely where the ancillary service capability must anyway be made available under the RfG.
NC RfG	Enel SpA, EU-DSO, EUGINE, Swedenergy, ENTSO-E, Oesterreichs Energie, smartEN, VW Group, Enercon, VGBE, EFAC	Article 2(6), (10), (15), (16), (17), (22), (23), (24), (50), (new)	Several stakeholders propose amendments to different paragraphs of Article 2 as well as additional new paragraphs to cover new definitions.	Disagree ACER has made amendments to the definitions in accordance with the changes introduced to the Articles of NC RfG further to comments made by stakeholders. Only definitions of terms that are used in the NC RfG are included.
NC RfG	Oesterreichs Energie	Article 3(2)	The stakeholder suggests to add a new subparagraph in Article 3(2) to explicitly exclude power-generating modules and RES for other frequencies than 50 Hz and NC DC-current (e. g. 16.7 Hz power supply systems in Austria and Germany) from the application of NC RfG.	Agree ACER amended Article 3(2)(a) to address the stakeholder's concern.
NC RfG	EUROPGEN, CogenEurope, EUTubines	Article 3	The stakeholders propose to provide that the documents defining the requirements and verification of compliance should be made available in English within three months of publication of the original document.	Disagree ACER considers that the proposed provision will be disproportionate and would create unnecessary burden for the system operators.
NC RfG	EUGINE	Article 4(2)	Stakeholder proposes to replace "plant" with "module" in para (b) Article 4(2).	Disagree In ACER's view, this would change the intended meaning of this provision.
NC RfG	Mercedes-Benz AG	New sentence in Article 30(2)(e)	The stakeholder suggests that in the ramp-up process of bidirectional EVs, this class of EVs should be treated as an emerging technology to accompany the transitional process.	Disagree ACER considers that the proposal cannot be accepted due to incompatibility with other proposed changes for EVs. Furthermore, ACER is minded to delete current Title VI and the emerging technologies concept from the new version of NC RfG.
NC RfG	Mercedes-Benz AG	New paragraph after Article 66(2)	The stakeholder proposes to include bidirectional vehicles with the system supporting and/or grid forming technologies to the category of emerging, under conditions that it is a member of Type EV, it is an emerging technology until it is ramped up as specified in article 66 (2c) and that it should be treated equally in each Member State.	Disagree ACER considers that the proposal cannot be accepted due to incompatibility with other proposed changes for EVs. Furthermore, ACER is minded to delete current Title VI and the emerging technologies concept from the new version of NC RfG.
NC DC	IFIEC	Recital 7, Article 4(2), and Article 48	The stakeholder points out the importance of distinguishing how "existing" and "new" will be tackled with every following version of the NC DC to have a clear view of requirements that will be applicable to parts of facilities and thus also knowing for which elements a CBA should be conducted.	Agree ACER agrees that the distinction of "new" and "existing" should be duly addressed in the new version of NC DC. Hence, it is ensured that this article is in line with the amendments made to the NC DC.
NC DC	IFIEC	Article 58	The stakeholder notes that Article 58 will have to be reviewed in function of the outcome of the discussion and selected options regarding the new versions of NC DC, in order to ensure that this issue is tackled correctly.	Agree ACER agrees that the distinction of "new" and "existing" should be duly addressed in the new version of NC DC. Hence, it is ensured that this article is in line with the amendments made to the NC DC.
NC DC	Better Energy SA	Whereas section (9)	The stakeholder proposes to replace "should" and "can" with "must" when referring to the application of principles of non-discrimination, transparency and optimisation, as well as to add that "the interests and expectations of all involved parties must be taken into account".	Disagree The recitals do not contain any legal obligations. Any legal obligations must be provided in the Articles of the Regulation.
NC DC	IFIEC	Whereas section (13)	The stakeholder suggests deleting the emphasis on domestic consumers when talking about reasonable limits of administrative burdens and costs associated with demand response, instead it should be relevant to all consumers, including industrial ones.	Disagree In ACER's view, the current wording of the recital is appropriate as the emphasis on domestic consumers, given the formulation "in particular", does not exclude industrial consumers.
NC DC	ENTSO-E	Whereas section (new)	The stakeholder proposes to include a new recital that would address the frequency-related requirements to support the stable operation of the energy system and introduce a new limited frequency sensitive mode for various demand	Agree ACER agrees on the need to include a recital on LFSM-UC as this new term is added in Article 2 as well as in the new provisions on LFSM-UC introduced in the new TITLE XXX.



Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views
			units (LFSM-UC) due to the expected reduction in effectiveness of existing low frequency demand disconnection (LFDD).	
NC DC	ENTSO-E	Article 1.1	The stakeholder suggests including in the subject matter the following: distribution-connected demand facilities to provide demand disconnection and reconnection, when specified by the relevant TSO in coordination with the relevant system operators; electrical charging demand units and power-to-gas demand units both larger than 800W at all voltage levels and; temperature-controlled devices larger than 800W at all voltage levels.	Partly agree  ACER agrees that the subject matter of the Regulation should be extended to V1G electric vehicles and associated V1G electric vehicle supply equipment, heat-pumps, and power-to-gas demand units. Temperature-controlled devices will be narrowed down to heat-pumps.
NC DC	ENTSO-E	Article 1.1(c)	The stakeholder proposes to add a new point (c) in the subject matter, namely, "distribution-connected demand facilities, if specified by the relevant TSO, in coordination with the relevant system operators, to provide demand disconnection and reconnection". In line with Article 1.1(c), the stakeholder suggests including the distribution connected demand facilities in Articles 19 and 22, arguing that it needs to be explicitly foreseen that the LFDD could be requested for distribution connected demand facilities/distribution system as well as that operational notification procedures are extended to all DSO and all demand facility if requirement apply to them (i.e. LFDD).	Disagree  ACER is of the opinion that the suggested changes would be disproportionate since it is not clear to what extent they would affect or have implications for system users. ACER considers that the existing requirements for the specific units are set out in a clear and explicit way. Moreover, the said proposal is related to the system operation, which is out of the scope of the NC DC.
NC DC	ENTSO-E	Articles 2(3) and 2(4)	The stakeholder proposes to rephrase the definition of transmission-connected distribution facility by "a part of a distribution system and equipment used at the site of the connection point to the transmission system", arguing that it should be made clear that a demand unit is a part of a 'demand facility' or of a CDSO. The concept of 'demand facility' is different to the one of 'distribution system facility'. Similarly, it was suggested to alter the definition of the "demand unit" as "an indivisible set of installations, being part of a demand facility or part of a closed-distribution system, containing equipment which can be actively controlled by a demand facility owner or by a CDSO, either individually or commonly as part of demand aggregation through a third party, or is an electrical charging demand unit, power-to-gas demand unit or temperature controlled device. A demand unit which requires a separate connection agreement should be treated as a demand facility and meet all requirements and procedures foreseen for it", emphasising that not only the equipment at the connection point but also the equipment needed for the connection should be included should be covered in the relevant definition.	Partly agree  ACER concurs that the proposed wording provides more clarity to the definition. Further, ACER amended the definition of the "demand unit" to also include V1G electric vehicle and associated V1G electric vehicle charging point or installation, power-to-gas demand unit or heat-pump.
NC DC	IFIEC	Articles 2(16), 2(17) and 2(18)	The stakeholder suggests specifying in the definitions of "demand response active power control", "demand response reactive power control" and "demand response transmission constraint management" that they can be provided in exchange for a remuneration.	Disagree  ACER considers that it does not seem necessary to include remuneration in those definitions.
NC DC	Edison SpA, Eurelectric	Article 2 (new definitions)	The stakeholders propose to introduce the definitions of "electric vehicle charging station/point or installation", as infrastructure necessary to safely conduct electrical energy between the electricity supply grid and the electric vehicle; "one-way electric vehicle charging station/point or installation", as infrastructure to conduct electrical energy to the electric vehicle with demand-only behaviour; and "bi-directional electric vehicle charging station/point or installation", as infrastructure necessary to conduct electrical energy to and from the electric vehicle with both generation and demand behaviour.	Partly agree  ACER agrees that these terms are relevant and should be defined. However, ACER is proposing to define these terms in the revisions to the NC RfG, so any reference to these terms should have the meaning as defined in that network code.
NC DC	EFAC	Article 2 (new definitions)	The stakeholder suggests adding the definition of "component", meaning any hardware element or software application having an impact on the electrical characteristics and /or operation of a demand facility or a demand unit.	Disagree  In NC DC the term is used only once – in Article 21. ACER considers that there is no need for such a definition.
NC DC	ENTSO-E	Article 2 (new definitions)	The stakeholder proposes to add new definitions of "demand unit document", "temperature-controlled device", "electrical charging demand unit", "power-to-gas demand unit", "limited frequency sensitive mode – underfrequency consumption", and "minimum technical operating level".	Partly agree  ACER agrees that the new version of NC DC should define such terms as "demand unit document", "power-to-gas demand unit", "limited frequency sensitive mode – underfrequency consumption" and "minimum technical operating level". "Temperature-controlled device" will be narrowed down to "heat-pump" using the definition in point (18) of Article 2 of Directive 2010/31/EU.
NC DC	Eurelectric	Article 2 (new definitions)	The stakeholder proposes to use or refer to the definitions of "energy storage" and "fully integrated network components" included in Directive (EU) 2019/944, and also add the definitions of "storage equipment", "maximum storage equipment capacity" and "maximum import capacity of storage equipment".	Partly agree  ACER is proposing to define these terms in the revisions to the NC RfG, so any reference to these terms should have the meaning as defined in that network code. Terms that are not used in the NC DC should not be defined.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC DC	VDE FNN, Gunnar KAESTLE	Article 2 (new definitions)	Some stakeholders suggest including the definition of "dispatchable load", since this definition is necessary to support the amendment to Article 12 and it is taken from IEC-DTS 62898-3-3.	Disagree	Terms that are not used in the NC DC should not be defined.
NC DC	ENTSO-E, Edison SpA	Article 3.1	Some stakeholders suggest adding a new point (e) mentioning new charging demand units. ENTSO-E also proposes to include power-to-gas demand units and new temperature-controlled devices, all three shall be larger than 800W at all voltage levels.	Partly agree	ACER considers that the scope of application of the new NC DC should also cover new V1G electric vehicles and associated V1G electric vehicle charging point or installations, heat-pumps and power-to-gas demand units, with maximum consumption capacity larger than 800W at any voltage level.
NC DC	smartEN	Article 3.1	The stakeholder proposes to specify that the communication of refusal by the relevant system operator to connect a new demand facility shall be justified.	Disagree	In ACER's view, such an obligation would be redundant since the requirements for connection of a new demand facility are explicitly established in the NC DC, therefore, non-fulfilment of those requirements results in the refusal from the relevant system operator.
NC DC	Better Energy SA	Article 3.1	The stakeholder suggests providing that when a transmission-connected demand facility is connected to the transmission system in the same connection point as a production facility, Title I will not apply to the transmissions-connected demand facility if the maximum export capability is below 10% of the production capacity.	Disagree	ACER addressed the topic of mixed customer sites in the NC RfG amendments; thus no change is necessary to the current provision of NC DC.
NC DC	ENTSO-E, EU DSO, Eurelectric, Green Power Denmark, smartEN	Article 3.2	A number of stakeholders consider that point (b) excluding storage devices except for pump-storage PGMs from the DC application should be removed. One of those stakeholders (Eurelectric) proposes to replace point (b) with storage owned by system operators which are considered as fully integrated elements serving the purpose of providing security of supply at specific points in the system and where they are not participating in electricity markets. Another stakeholder (ENTSO-E) proposes to instead provide in point (b) the electricity storage modules and pump-storage power generating modules that have both generation and charging/pumping mode.	Partly agree	ACER agrees with the proposals to delete the current point (b) and replace it with the wording suggested by ENTSO-E to ensure clarity.
NC DC	Oesterreichs Energie	Article 3.2	One stakeholder proposes to exclude from the NC DC application those demand facilities that part of other frequencies than 50 Hz and DC-current (e. g. 16.7 Hz power supply systems) that are not connected on the synchronous area (e. g. static converter stations), reasoning that 16.7 Hz power supply system does not operate synchronously.	Agree	ACER agrees with the proposed amendment, which ensures consistency with the amendments made to NC RfG.
NC DC	smartEN	Article 3.3	One stakeholder suggests specifying that in case of demand facilities or closed distribution systems with more than one demand unit, these demand units shall together be considered as one demand unit if they, among other things, also can be controlled as one aggregated load.	Disagree	ACER considers that the proposed formulation would be redundant since the wording "can be reasonably considered in a combined manner" already provides sufficient clarity.
NC DC	ENTSO-E	Article 4.1(a)	The stakeholder proposes to change "has been modified" to "is being modified" in point (a) with regard to the existing facilities.	Disagree	The wording of the suggested amendment could raise legal uncertainty questions.
NC DC	IFIEC	Article 4.3	The stakeholder considers that for the sound and transparent quantitative cost-benefit analysis it should be carried out in coordination with the relevant stakeholders.	Disagree	ACER considers that the procedure, set in accordance with Articles 48 and 49, adequately involves stakeholders.
NC DC	smartEN	Article 5	The stakeholder suggests including electric vehicles in the article name and add new paragraph providing that any electric vehicle or charging station that only work in charging mode, even if physically able to do otherwise, shall be subject to the requirements of NC DC and shall be treated as demand unit.	Partly agree	ACER agrees that the introduction of EVs to the NC DC is a necessary step for a comprehensive regulation on the EU level. However, regarding the stakeholder's suggestion, ACER considers that the proposed changes to the text would not be necessary as the new provisions on EVs are described in the RfG amendment and will be applied consistently in a new Title on the connection of V1G electric vehicles and associated V1G electric vehicle charging point or installation, power-to-gas demand units and heat-pumps, introduced in NC DC.
NC DC	ENTSO-E, Edison SpA, Eurelectric	Article 5	The stakeholders propose to remove the pump storage generating modules from the scope of application of NC DC, hereby deleting paragraph 2 (ENTSO-E: deleting both 1 and 2). It is argued that the pump-hydro is covered by NC RfG and having two potentially conflicting sets of requirements can lead to legal ambiguity.	Agree	ACER considers that the changes suggested by ENTSO-E, to remove both paragraphs on the pump storage generating modules from the text, improve legal clarity.
NC DC	Better Energy SA	Articles 6.3 and 6.4	The stakeholder suggests providing that all requirements established by relevant system operators or TSOs under NC DC must be in accordance with NC DC including Article 6(3).	Disagree	ACER considers that the proposed amendment does not seem necessary and may be redundant in light of the current wording of this Article.

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
			<p>It is also proposed to emphasise in point (a) that the principles of proportionality and non-discrimination shall apply for all parties involved. Additionally, the stakeholder recommends adding new points in paragraph 3 and establish that, when applying NC DC, the interests and expectations of demand facility owners, DSOs and other stakeholders shall be taken into account; same for the climate targets in a fair, cost-effective and competitive way that promotes and maximises the production and use of renewable energy.</p> <p>Moreover, it is suggested to specify that when new or changed requirements are proposed pursuant to paragraph 4, the regulatory authority or designated entity shall receive documentation from the relevant system operator or TSO that points (a), (c), [new](g) and [new](h) of Article 6.3 have been taking into account. The regulatory authority or designated entity must also make sure that the requirements in accordance with points (a), (c), [new](g) and [new](h) and are taking into account all parties involved.</p>		
NC DC	smartEN	Articles 6.3 and 6.4	The stakeholder considers that it should be explicitly provided that, when applying NC DC, Member States, competent entities and system operators shall, inter alia, offer at least one draft of the regulation or methodology for the public to provide reviews and comments.	Disagree	ACER disagrees with the proposal as it falls under the discretion of the relevant Member State to apply such procedure on a national level.
NC DC	Better Energy SA	Article 6.7	The stakeholder proposes to provide that relevant regulatory authority or designated entity can also deem an amendment necessary, allowing regulatory authorities to propose an amendment in case something is not in accordance with NC DC or the principles.	Agree	ACER agrees with the suggested changes.
NC DC	Better Energy SA	Article 6 (new paragraph)	The stakeholder suggests establishing a dispute settlement procedure, where any party affected by the requirements adopted by the relevant system operator or TSO may submit a complaint to the regulatory authority that shall act as a dispute settlement authority. The decision on the dispute must be issued within two months after receipt of the complaint, the period may be extended by two more month and after that with the agreement of the complainant.	Disagree	ACER disagrees with the proposal as it falls under the discretion of the relevant Member State to apply such procedure on a national level.
NC DC	Eurelectric, Edison SpA	Title I (new provisions)	The stakeholder considers introducing new provisions on the application to the electric vehicle charging points and on the application to storage facilities, providing that they shall be subject to the requirements of both NC DC and NC RfG.	Partly agree	ACER agrees with the general idea of including a new provision for electric vehicle charging points and storage facilities. For that, a new Title on the connection of V1G electric vehicles and associated V1G electric vehicle charging point or installation, power-to-gas demand units and heat-pumps is introduced in NC DC.

**18. IMPLEMENTATION MONITORING**

Applicable NC	Respondents	Section of proposed amendment	Summary of respondents' response	ACER views	
NC RfG	CharIN	Article 59(1)(b)	The stakeholder proposed to add to the concerned article the wording "or storage modules".	Partly agree	Rather than explicit referencing to the storage modules, ACER proposes to use definitions in such way that the electricity storage modules are implicitly covered by this paragraph.
NC RfG	COGEN EUROPE/ EUTurbines	Article 59	<p>The stakeholders propose that ACER should be explicitly empowered to force adherence of the national regulation to the European regulation with defined timelines, and that the wording should be aimed to limit as much as reasonable divergence from the regulation.</p> <p>EUTurbines emphasised that, during the implementation manufacturers and plant owners struggled to access the information relevant to the new regulation, therefore a single point where updated information can be accessed is needed.</p> <p>The stakeholders proposed rules for updating national regulation following a notification from ACER in case of divergence of the national implementation of the Regulation.</p> <p>The stakeholders proposed that TSOs and DSOs should be responsible to provide and update the information, and that ENTSO for Electricity and ACER should coordinate to provide an online focal point for the information.</p> <p>EUTurbines asked for transparent clarification on the workflow and role of actors such as the national regulatory authorities to allow for a clearer picture.</p> <p>The stakeholders proposed to introduce a requirement on sharing the implementation and application experience with regional coordination centres as part of their task.</p>	Partly agree	<p>As pointed out by the stakeholders, the monitoring role has been attributed to ACER (as provided in Article Regulation EU 2019/943), therefore ACER has made changes to the Article in this regard that partially align with the changes proposed by the stakeholders.</p> <p>ACER disagrees with the proposal to update national regulation in case of divergences since this is in the scope of application of NRAs and ACER has no legal mandate to affect the national connection rules.</p> <p>ACER has made changes to improve clarity regarding the workflow and to clarify TSOs and DSOs obligations.</p> <p>ACER considers that the creation of tasks for the regional coordination centres must follow the procedure indicated in Article 37(2) of Regulation EU 2019/943.</p>
NC RfG	Mercedes Benz AG	Article 59 (new paragraph)	<p>The stakeholder suggested to introduce a new paragraph to provide that ACER ensures that no divergent EV regulations be adopted in each member state, relevant TSO, and relevant DSO that modify or adjust the EV type class.</p> <p>The stakeholder added that, if necessary, national regulatory authorities should have the power to take action against violations.</p>	Disagree	ACER has no legal mandate to affect the national connection rules, and considers that the topic is out of scope of this article.
NC RfG	VGBE	Article 59(1)	The stakeholder proposed to add the wording 'As instructed by ACER' to the beginning of paragraph 1 to provide that the monitoring should be executed by ENTSO-E according to instructions from ACER.	Disagree	ACER disagrees with the amendment proposed by the stakeholder; nevertheless, ACER has proposed changes to the Article in this regard following the monitoring role being attributed to ACER (as provided in Article 32 of Regulation EU 2019/943).

## **19. NEXT STEPS**

ACER will launch a further consultation taking place from 17.7.to 25.9.2023 on its draft amendment proposals to the grid connection network codes resulting from taking into consideration stakeholders' submissions to PC\_2022\_E\_08.

In turn, ACER will evaluate stakeholders' responses to the 2023 public consultation, with the plan to submit the recommendations for the amendments of the NC RfG and NC DC to the Commission by the end of 2023.