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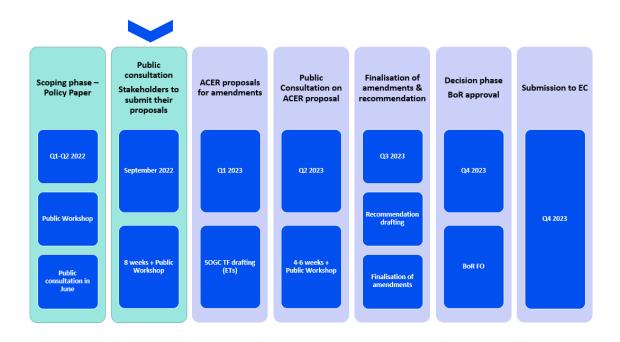
# Proposals for amendments to the Requirements for Generators

Fields marked with \* are mandatory.

#### Introduction

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

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



Following the scoping phase, ACER published the Policy Paper on the revision of the network code on requirements for grid connection of generators and the network code on demand connection in September 2022. The Policy Paper aims to transparently indicate to stakeholders the key policy areas in which amendments are to be expected. Moreover, the Paper draws on the alternative policy options and provides recommendations and proposed actions for the amendment process.

Access the ACER Policy Paper on the revision of the NC RfG and NC DC

This consultation aims at gathering, from all interested stakeholders, concrete proposals for amendments to the Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a **Network Code on Requirements for Grid Connection of Generators** ('NC RfG').

For amendment proposals concerning Network Code on Demand Connection, please go to the form: <a href="NC">NC</a>
<a href="DC">DC</a>.

Responses to this consultation should be submitted by 28 November 2022 23:59 CET.

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<u>protection</u>
* Name of the stakeholder:
EU DSO ENTITY
* Contact person:
Contact person.
Serdar BOLAT
* Contact person's email address:
serdar.bolat@eudsoentity.eu
* Country of the stakeholder's headquarters or main country of operation:
Belgium
* Type of the stakeholder:
Generator (including association)
Consumer (including association)
<ul> <li>Transmission system operator (including association)</li> </ul>
<ul> <li>Distribution system operator (including association)</li> </ul>
Manufacturers (including association)
Academia/research institution
Regulatory authority
Other (please, elaborate)
Please, elaborate on your answer above, if necessary:
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\* Do you consent to the publication of the stakeholder's name?

YesNo

- \* Do you consent to the publication of provided answers?
  - Yes
  - No (please, note that your answer, without your name and organization, may be shared with the EU institutions and national authorities, drafting team members, and other persons or entities involved in the European Grid Connection Network Codes amendment process)

#### Instructions

Stakeholders are invited to submit their amendment proposals to the RfG articles that they consider should be revised in a two-step process:

- 1. by inserting the proposed amendments in the provided Word file
- 2. by motivating/reasoning the proposed amendments through this online consultation form.

#### Both steps are mandatory for all amendment proposals.

(Where no amendment is proposed, the article text in the word file can be left unaltered and the cells in the consultation form can be left blank.)

The mandatory steps for submitting amendment proposals are detailed below. At the end of this section, you can find an example showing how to submit your proposals.

#### Step 1

Please include all your amendment proposals in the **Word file provided below using the Track Changes mode**. Once you edit the file and rename it with your stakeholder's name ("NC\_RfG\_stakeholder\_name"), please upload it in the last section of this form (FILE UPLOAD)

#### **Download the Word file (NC RfG)**

#### Step 2

In addition, please use this form to motivate/reason your proposals, following the instructions:

#### General requirements for type B power-generating modules

Please write your amendment proposal and the reasoning in the table below.

	Amendment proposal	Reasoning	Relation to other provisions
Article 14(1)	1	2	3
Article 14(2)			
Article 14(3)			
Article 14(4)			
Article 14(5)			

	Proposal for new provisions in this section	Reasoning	Relation to other provision
New provisions			

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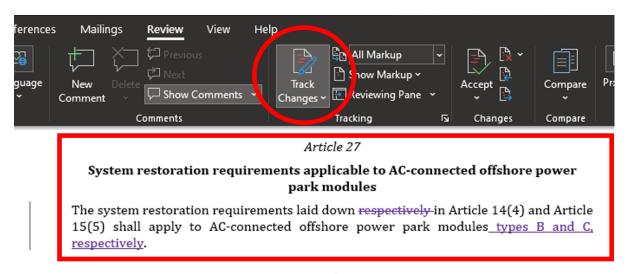
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- 1. Propose an amended wording of the relevant provision, as you provided in the Word file.
- 2. Provide the motivation/reasoning behind your proposal.
- **3.** Indicate (if any) which other provisions of the NC RfG are impacted and may need to be amended following your proposal.
- **4.** Provide (if any) your proposals for adding new provisions to the relevant section of the Regulation, as you provided in the Word file.
- 5. Upload figures or tables if necessary; text inputs should be provided directly in the consultation form.

### Example

Stakeholder XYZ would like to propose an amendment to Article 27 of NC RfG. In their view, the meaning of the word "respectively" in this article is not clear. Following a two-step process, the stakeholder downloads the Word file from the **Instruction** section, turns on the Track Changes mode and edits the text (first step).

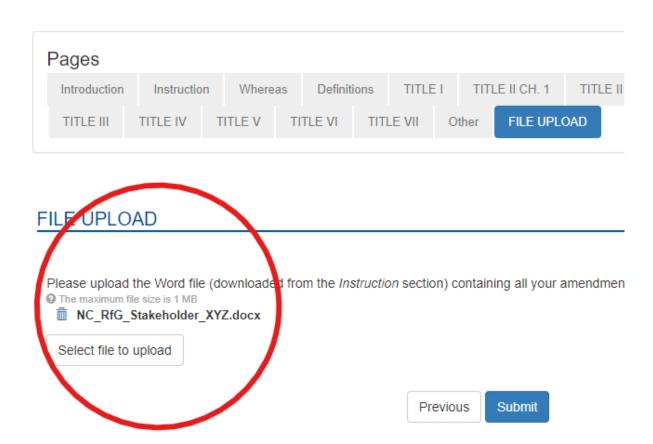


Article 28

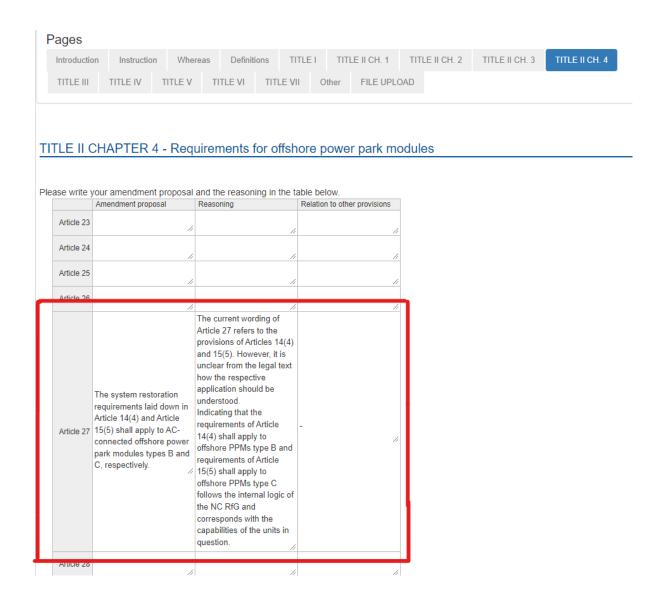
## General system management requirements applicable to AC-connected offshore power park modules

The general system management requirements laid down in Article 14(5), Article 15(6) and Article 16(4) shall apply to AC-connected offshore power park modules.

After saving the edited file on their device under the name "*NC\_RfG\_Stakeholder\_XYZ*", the stakeholder uploads it in the **FILE UPLOAD** section.



The stakeholder proceeds to motivate/reason their proposal. As they would like to propose an amendment to Article 27 of NC RfG, they enter **TITLE II CHAPTER 4** Section and insert the proposed amended wording and the reasoning (second step). As the proposed amendment of Article 27 does not affect other provisions, they leave the last column blank.



As the survey is long,

- 1. you have the possibility to edit your answer after submission. When clicking on "submit", you will be given a contribution ID, which you can then use to access your contribution here. This allows you to proceed in steps.
- 2. we kindly suggest that you download the entire survey as .pdf (link on the right), prepare your answers and then upload them at once in the EU Survey Tool, to avoid a session timeout on submission.

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

#### Whereas Section

Numbers in the first column correspond with the recitals of the NC RfG Whereas section

,	Amendment proposal	Reasoning	Relation to other provisions
(1)			
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(31)		

	Proposal for new recitals	Reasoning	Relation to other provisions
New recitals	New addition - on Preamble (inserted as new points 3+,4+)	The new provisions are related to Storage - to be included within RfG framework	

	Amendment proposal	Reasoning	Relation to other provisions
Article 2(1)			
Article 2(2)			
Article 2(3)			
Article 2(4)			
Article 2(5)	Amending (Changes to Definition)	Suggestion to link 50549 CENELEC requirements to the RfG	
Article 2(6)			
Article 2(7)			
Article 2(8)			
Article 2(9)			
Article 2(10)	Amending (Changes to Definition)	Storage in RfG should be treated similar to "power generating module".	
Article 2(11)			
Article 2(12)			
Article 2(13)			
Article 2(14)			
Article 2(15)			
Article 2(16)			
Article 2(17)			
Article 2(18)			
Article 2(19)			
Article 2(20)			
Article 2(21)			
Article 2(22)			

Article 2(23)		
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Article 2(60)		
Article 2(61)		
Article 2(62)		
Article 2(63)		
Article 2(64)		
Article 2(65)		

	Proposal for new definitions	Reasoning	Relation to other provisions
New definitions	New additions in Art.2. (66), (67) (68) (69) and (70)	New provisions on Art 66-70, covering Storage and EVs, introducing the definitions	

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## TITLE I - General provisions

	Amendment proposal	Reasoning	Relation to other provisions
Article 1	Amending.	It is in the interest off all grid operators to maintain a stable system and therefore we need requirements to Electricity Storage included in RfG	
Article 3	Amending. Deletion of point d	It is in the interest off all grid operators to maintain a stable system and therefore we need requirements to Electricity Storage included in RfG	
Article 4	Amending 1a. 1b		

Article 5	Amending of points 1 and 2. Deletion of the voltage level	EU DSO Entity supports the calls from other user groups, for removal of these references to the connection point voltages. There was an overwhelming consensus of this view from the stakeholder workshop. EU DSO Entity would support the views expressed that these references:  1. Are unnecessary  2. Unduly discriminate against smaller generators who happen to avail of connections at or above 110kV because of location  3. Unduly discriminate against small generators that are present on demand sites which happen to be connected at 110kV or greater. Further, that the MW thresholds are sufficient in and of themselves.
Article 6		
Article 7		
Article 8		
Article 9		
Article 10		
Article 11		
Article 12		

Proposal for new articles in this section	Reasoning	Relation to other provisions
	a) The application of the RfG to     existing PGMs which are modified	
	is covered in article 4, but the	
	application is very uncertain	
	because of the lack of specific	
	guidance on what is the critical	
	level of modernization or	
	replacement.	
	The DSO Entity believes that	
	Article 4 should implement the	
	following high level policy:	
	If a power generating module is	
	modified such that	
	(i) this is a clear investment by the	
	owner in the capabilities of the	
	power generating module; and	
	(ii) this has a material effect on its	
	electrical and grid-dynamic	
	characteristics, then the investment	
	should include bringing the power	
	generating module up to NC RfG standards.	
	Stanuarus.	

New articles	a) New addition in art 4.1 (C). Article 4.1 to be extended to provide further definition as to what modernization or replacement is critical in triggering the retrospective application of the RfG to existing PGMs	Any new parts or components should, as far as possible, comply with the requirements of the NC RfG even if the module cannot do so, such that if compliance is required in the future, these replacement parts will not be a block on such compliance. This does not apply to recognized spare parts or maintenance activities.
	b) New addition in art 4 (4.8 and 4.9)	The application of this rule should not assign inappropriate or disproportionate costs to the owners of generation equipment.
	c) New addition in art 6, point 6	The key electrical characteristics referred above are:
		- The maximum capacity of the power generating module (PGM) — which is already in use as a criterion in some member states,
		-The PGM's reactive power capability, if the relevant system operator is formally relying on particular reactive power requirements,
		Its inertia, or other appropriate intrinsic characteristic which affects its stability

	b) New articles 4.8 and 4.9 to further clarify the application  c) An electricity storage module shall be capable of satisfying the requirements of this Regulation irrespective of whether the electricity storage module is injecting or consuming active power to and from the network	
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## TITLE II CHAPTER 1 - General Requirements

General requirements for type A power-generating modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 13(1)			
Article 13(2)			
Article 13(3)			
Article 13(4)			
Article 13(5)			
Article 13(6)	Amending - To introduce the possibility to reduce or modify active power output following an instruction.	Already many type A PGMs are in some member states now being connected on flexible connection contracts where the generation owner and the DSO have agreed a connection contract whereby the DSO can reduce the PGM output to avoid DSO (and even TSO) network overloading.  To be a good system operator, it will be very useful for the DSO to have the possibility for active power control type A.  We do recognize that for some technologies, this will be a problem.  We think for those, it is the best, they do a proposal for derogation /amendment themselves.	
Article 13(7)			

	Proposal for new provisions in this section	Reasoning	Relation to other provisions
New provisions	<ul> <li>a) New addition on Art.13 2. (Point h). Text added also under fig1</li> <li>b) New addition on Art.13. Point 8 and 9</li> <li>c) New addition on Art.13 Point 10</li> </ul>	<ul> <li>a) In the case of electricity storage modules, Pref could be the maximum capacity or the maximum consumption capacity at the moment the LFSM-O threshold is reached or the maximum capacity or maximum consumption capacity as agreed with the relevant system operator.</li> <li>b) Adding requirements for reactive power control and voltage control. Most of the technologies already provide this and many DSOs are already specifying these requirements.</li> <li>c) Point added for the orderly certification and management of V2G connected to DSO networks</li> </ul>	

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General requirements for type B power-generating modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 14(1)			
Article 14(2)	Amending	Completing the article with Storage provisions	
Article 14(3)			
Article 14(4)			
Article 14(5)	Amended, deletion of current point ii	Please see (new proposed provisions)	

	Proposal for new provisions in this section	Reasoning	Relation to other provisions
New provisions	New additions. Provisions on art 14(5) d (new points ii,iii, iv)	The capabilities of modern protection relays make it possible in almost all new installations that there is disturbance information stored in these relays. This suggestion is to draft an option to allow the RSO to place an obligation on the generation owner to provide fault recording information from such, or other, facilities.	

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General requirements for type C power-generating modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 15(1)	Amending	To avoid conflict with the new Art 14.5(d)(ii), (iii) and (iv).	
Article 15(2)			
Article 15(3)			
Article 15(4)			
Article 15(5)	Amending on 15.5 b.  Remove the prohibition on the use of switchgear position signals to detect island mode	It is not clear, in the limit, what other characteristics of the island comprehensively identify that an island situation exists, nor why this criterion is prohibited. The first part of Article 15.5(b)(ii) seems sufficient in that it provides for the RSO to agree the conditions with the affected parties. The exclusion of the most obvious criterion for detecting islanding seems unduly restrictive and is in conflict with historic practice of some DSOs.	
Article 15(6)			

	Proposal for new provisions in this section	Reasoning	Relation to other provisions
New provisions	New additions. Provision 15.2 (vi)	on Storage provisions	

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General requirements for type D power-generating modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 16(1)	Amending	To avoid conflict with the new Art 14.5(d)(ii), (iii) and (iv).	
Article 16(2)			
Article 16(3)			
Article 16(4)			

	Proposal for new provisions in this section	Reasoning	Relation to other provisions
New provisions			

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

Requirements for type B synchronous power-generating modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 17(1)			
Article 17(2)	Amending	Remove the requirements which are now in 13.8	
Article 17(3)			

	Proposal for new provisions in this section	Reasoning	Relation to other provisions
New provisions			

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Requirements for type C synchronous power-generating modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 18(1)			
Article 18(2)			

	Proposal for new provisions in this section	Reasoning	Relation to other provisions
New provisions	New addition 18.2 (d)	New paragraph confirming that reactive power should be available for all four quadrants from a synchronous electricity storage module. Storage should be able to modulate reactive power over all four quadrants, ie when both importing and exporting.	

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Requirements for type D synchronous power-generating modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 19(1)			
Article 19(2)			
Article 19(3)			

	Proposal for new provisions in this section	Reasoning	Relation to other provisions
New provisions			

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# TITLE II CHAPTER 3 - Requirements for power park modules

Requirements for type B power park modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 20(1)			
Article 20(2)			
Article 20(3)			

	Proposal for new provisions in this section	Reasoning	Relation to other provisions
New provisions			

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Requirements for type C power park modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 21(1)			
Article 21(2)			
Article 21(3)	Amending. Deletion 21.3.d (i)  Amendment 21.3.D (vi)	Remove the requirements which are now in 13.8  On storage	

	Proposal for new provisions in this section	Reasoning	Relation to other provisions
New provisions	New additions. Art 21.3. C	New paragraph confirming that reactive power should be available for all four quadrants from a nonsynchronous electricity storage module.  Storage should be able to modulate reactive power over all four quadrants, e.g. when both importing and exporting.	

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# Requirements for type D power park modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 22			

	Proposal for new provisions in this section	Reasoning	Relation to other provisions
New provisions			

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# TITLE II CHAPTER 4 - Requirements for offshore power park modules

	Amendment proposal	Reasoning	Relation to other provisions
Article 23			
Article 24			
Article 25			
Article 26			
Article 27			
Article 28			

	Proposal for new articles in this section	Reasoning	Relation to other provisions
New articles			

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# TITLE III - Operational notification procedure for connection

	Amendment proposal	Reasoning	Relation to other provisions
Article 29			
Article 30			
Article 31			
Article 32			
Article 33			
Article 34			
Article 35			
Article 36			
Article 37			
Article 38			
Article 39			

	Proposal for new articles in this section	Reasoning	Relation to other provisions
New articles	New addition on Art.30 (3)	Needed for electromobility – requires EVs with AC coupled V2G to have equipment certificates. Required to differentiate between an AC coupled V2G, where the vehicle could be connected anywhere, and a DC coupled V2G, which depends on a (ie any) fixed charge points. Fixed charge points can be treated like any other electricity storage module. As DSOs, it is important to emphasize explicitly that we need valid requirements for the V2G.	

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# TITLE IV - Compliance

	Amendment proposal	Reasoning	Relation to other provisions
Article 40			
Article 41			
Article 42			
Article 43			
Article 44			
Article 45			
Article 46			
Article 47			
Article 48	Amending 48.4 a	Inclusion of Storage provision	
Article 49			
Article 50			
Article 51			
Article 52			
Article 53			
Article 54			
Article 55			
Article 56			
Article 57			
Article 58			
Article 59			

	Proposal for new articles in this section	Reasoning	Relation to other provisions
New articles	New addition. Art.40 point 2	To ensure the safety of public and the resilience of the grid, system operators need clear requirements and rules for V2G. The EU DSO Entity's proposals are intended to ensure safe and secure operation of the grid with V2G. The EU DSO Entity recognizes the significant challenges in finding the right compromise between operability and safety and security. The EU DSO Entity looks forward to further discussion on how the rules can be appropriately specified.	

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# TITLE V - Derogations

	Amendment proposal	Reasoning	Relation to other provisions
Article 60			
Article 61			
Article 62			
Article 63			
Article 64			
Article 65			

	Proposal for new articles in this section	Reasoning	Relation to other provisions
New articles			

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# TITLE VI - Transitional arrangements for emerging technologies

	Amendment proposal	Reasoning	Relation to other provisions
Article 66			
Article 67			
Article 68			
Article 69			
Article 70			

	Proposal for new articles in this section	Reasoning	Relation to other provisions
New articles			

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# TITLE VII - Final provisions

	Amendment proposal	Reasoning	Relation to other provisions
Article 71			
Article 72			

	Proposal for new articles in this section	Reasoning	Relation to other provisions
New articles			

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# Other additional provisions

	Proposal for new provisions	Reasoning	Relation to other provisions
Other new provisions	Addition for an Annex 1 on Storage	Annex for RfG specifically for Electricity Storage Modules, Technical requirements	

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# **FILE UPLOAD**

Please upload the Word file (downloaded from the **Instruction** section) containing all your amendment proposals in the Track Changes mode.

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#### Contact

**Contact Form**