ACER draft amendments to the Network

Code on Demand Connection

Fields marked with \* are mandatory.

Introduction

This consultation aims at presenting ACER's draft amendments to the Commission Regulation (EU)

2016/1388 of 17 August 2016 establishing a Network Code on Demand Connection ('NC DC').

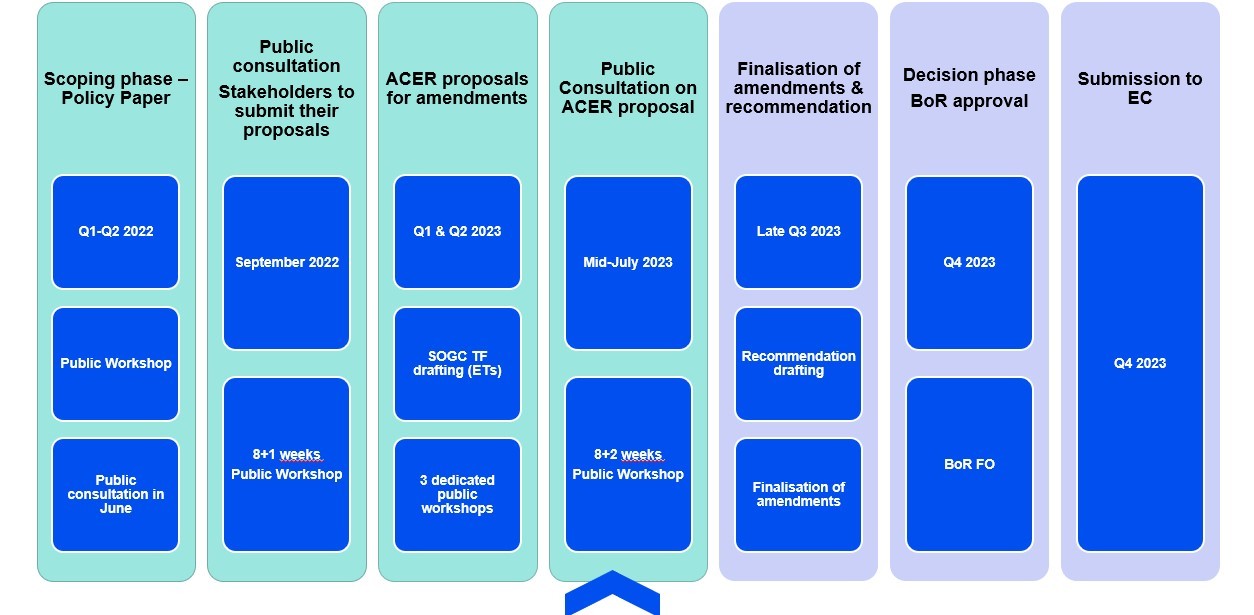
For draft amendments concerning Network Code on Requirements for Generators ('NC RfG'), please go to the respective form: NC RfG.

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

Background

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

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



1

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

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

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

November 2022.

Access the results of the Public Consultation on the amendments to the grid connection network codes.

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

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

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

Stakeholder's details

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

Find out more how we process your data: [https://www.acer.europa.eu/the-agency/about-acer/data- protection](http://www.acer.europa.eu/the-agency/about-acer/data-)

\* Name of the stakeholder:

\* Co

\* Co

|  |
| --- |
|  |
| ntact person: |
|  |
| ntact person's email address: |
|  |

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

Austria



Belgium



2

Bulgaria Croatia Cyprus Czechia Denmark Estonia Finland France



Germany Greece Hungary Iceland Ireland



Italy



Latvia



Liechtenstein



Lithuania



Luxembourg



Malta



Netherlands



Norway Poland Portugal Romania



Slovak Republic



Slovenia



Spain



Sweden



Outside the EEA (please, specify)



Please, specify the country:

\* Type of the stakeholder:

Generator (including association) Consumer (including association)



Transmission system operator (including association) Distribution system operator (including association) Manufacturers (including association)



Academia/research institution



Regulatory authority



Other (please, elaborate)



Please, elaborate on your answer above, if necessary:

3

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

Yes



No



\* Do you consent to the publication of provided answers?

Yes



No (please, note that your answer, without your name and organization, may be shared with the EU



institutions and national authorities)

Instructions

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

1. by downloading the ACER draft amendments in the Word file provided below. The file could also be accessed on the right panel of the consultation form under the Background Documents;

2. by commenting on the ACER's draft amendments through this online consultation form and adding their alternative text proposals to the table, if any; and

3. by uploading the alterative amendment proposals to the entire NC DC using the Track Changes mode in the ACER draft amendments file downloaded from Step 1.

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

The mandatory steps for submitting the comments are listed below.

Step 1

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

Download ACER draft amendments to the NC DC here

Step 2

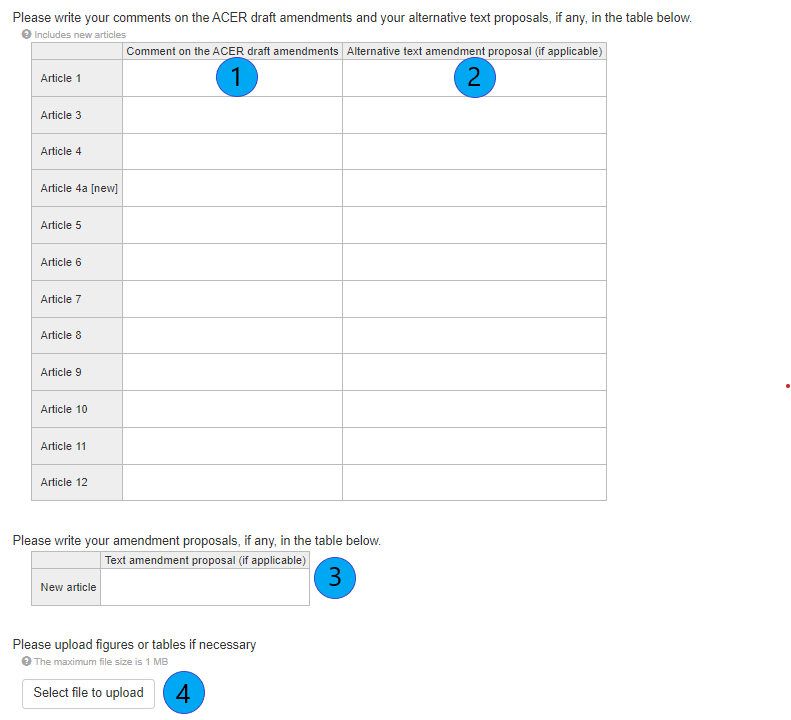
Kindly note that this consultation form follows the structure of the NC DC amended legal text provided by ACER in Step 1.

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

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[deleted]. New articles and titles are marked as [new].

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



1. Leave comments on the ACER draft amendment proposals.

2. Propose (if any) alternative wording of the relevant provision, as you provided in the Word file.

3. Provide (if any) your proposals for adding new provisions to the relevant section of the NC DC, as you provided in the Word file.

4. Upload figures or tables if necessary; text inputs should be provided directly in the consultation form.

Step 3

Where the stakeholder would like to propose an alternative amendment to the entire NC DC, please upload the Word file (downloaded from Step 1) containing all your alternative amendment proposals in the Track Changes mode to the next FILE UPLOAD section and rename it with your stakeholder's name ("ACER\_draft\_DC\_stakeholder\_name"). You can also upload your justification

documents, where applicable.

5

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

FILE UPLOAD

Please upload your file here

The maximum file size is 1 MB

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

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

Please upload your file

The maximum file size is 1 MB

Please upload your file

The maximum file size is 1 MB

Please upload your file

The maximum file size is 1 MB

Due to the significant length of this survey:

you have the possibility to edit your answer after submission. When clicking on "Submit" button, you will be given a Contribution ID which you can then use to access your answers and edit them, if necessary.

we kindly suggest that you download the entire survey as .pdf (link on the right), prepare your answers and then upload them at once in the EU Survey Tool, to avoid a session timeout on submission.

The maximum length of each cell is 5000 characters. This is the maximum technical limit set by the

EUsurvey tool, which cannot be increased.

Whereas Section

6

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

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

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
| (1) |  | |
| (2) |  | |
| (3) |  | |
| (4) |  | |
| (5) |  | |
| (6) |  | |
| (7) |  | |
| (\*\*) | Proposal to add as home energy management systems should also be in the scope of this NC:  Transmission-connected demand facilities, transmission-connected distribution facilities, new distribution systems, demand units used by a demand facility or a closed distribution system to provide demand response services to relevant system operators and relevant TSO, **home energy management system**, V1G electric vehicles and associated V1G electric vehicle supply equipment, heat-pumps, and power-to-gas demand units are subject to the requirements of this Regulation regardless of whether they are part of an energy community as defined in Regulation (EU) 2019/943 , another entity, or a form of system users aggregation, unless such energy community, another entity, or a form of system users aggregation constitutes a fully autonomous energy island. | |
| (8) | Proposal to add:  Demand response is an important instrument for increasing the flexibility of the internal energy market and for enabling optimal use of networks. It should be based on customers' actions or on their agreement for a third party to take action on their behalf, **individually or as part of an aggregation portfolio.** | |
| (9) |  | |
| (10) |  | |
| (11) |  | |
| (12) |  | |
| (13) | Proposal to add:  The administrative burdens and costs associated with providing demand response should be kept within reasonable limits **and proportional to the consumer size**, in particular as regards domestic consumers, who will play an increasingly important role in the transition to low carbon society and their uptake should not be unnecessarily burdened with administrative tasks. | |
| (14) | Proposal to add:  Due to its cross-border impact, this Regulation should aim at the same frequency- related requirements for all voltage levels, at least within a synchronous area. That is necessary because, within a synchronous area, a change in frequency in one Member State would immediately impact frequency and could damage equipment in all other Member States **or jeopardise the European electricity network system.** | |
| (15) | Proposal to add:  Frequency-related requirements should support the stable operation of the energy system which is being transformed to accommodate the green transition. In the future, the effectiveness of existing low frequency demand disconnection (LFDD) schemes is expected to be reduced due to the increased penetration of distributed generation. Therefore, a new limited frequency sensitive mode for various demand units (LFSM-UC) is being introduced to account for these changes. Furthermore, charging units for electro mobility, such as V1G, power-to-gas demand units and heat-pumps are usually technically capable to fulfil such a requirement without negative consequences for the grid user. **Also, in big car parks, the impact of the V2G charging station on the frequency, namely superharmonic, should be considered.** | |
| (16) |  | |
| (17) |  | |
| (18) |  | |
| (19) |  | |
| (20) |  | |
| (21) |  | |
| (22) |  | |
| (23) |  | |
|  |  | |

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(24)

8

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

Text amendment proposal (if applicable)

New recital

Definitions (Article 2)

9

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

Includes new definitions

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
| Article 2(1) |  | |
| Article 2(2) |  | |
| Article 2(3) |  | |
| Article 2(4) |  | |
| Article 2(5) |  | |
| Article 2(6) |  | |
| Article 2(7) |  | |
| Article 2(8) |  | |
| Article 2(9) |  | |
| Article 2(10) |  | |
| Article 2(11) |  | |
| Article 2(12) | Request for clarification: Why just “on load tap changer”? The market already offers different solutions (after the transformer), for example, based on power electronics, to achieve the same objective. | |
| Article 2(13) |  | |
| Article 2(14) |  | |
| Article 2(15) |  | |
| Article 2(16) |  | |
| Article 2(17) |  | |
| Article 2(18) | Proposal to delete this point as it’s the same as (16). If not, please introduce concrete examples. Otherwise, it should be deleted. | |
| Article 2(19) |  | |
| Article 2(20) |  | |
| Article 2(21) |  | |
| Article 2(22) |  | |
| Article 2(\*) |  | |
| Article 2(\*\*) |  | |
|  |  | |

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Article 2(\*\*\*)

Article 2(\*\*\*\*)

11

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

Text amendment proposal (if applicable)

New definition

Please upload figures or tables if necessary

The maximum file size is 1 MB

TITLE I - General provisions

12

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

Includes new articles

|  |  |
| --- | --- |
| Comment on the ACER draft amendments Alternative text amendment proposal (if applicable) | |
| Article 1 | With regards to 2.a/b/c/d – Rate of change of frequency and considering a “level playing field” among grid users, it is surprising that a V1G electric vehicle and associated V1G electric vehicle supply equipment, power-to-gas demand unit and heat-pump have to comply to these ROCOF requirements while other demand facilities do not have to comply to ROCOF requirements. What is the reasoning for this discrepancy? |
| Article 3 | Request for clarification:  On Art. 3 b) it says: “The droop shall be 5%.” It is not clear to us what the actual requirement is. Is it per second? Is it one drop of 5% instantaneous?  Also, as distribution networks are, simplistically, constituted by lines and substations that connect multiple users which are also connected to the transmission grids in several cases: Are only new facilities (ex.: substations) are to be considered even if there is an existing adjacent distribution substation which does not comply and that can provide N-1 backup to the new substation? Clarification on what constitutes a facility should be provided on the above as the present definition included in the DCC allows for different interpretations. |
| Article 4 |  |
| Article 4a [new] |  |
| Article 5 |  |
| Article 6 | So far, FRT was only applicable to generators as described in NC RfG (Network Code Requirements for Generator). In RfG, the minimum level of Uret is 0,05. The Uret proposal for P2G is 0 which is very stringent. The technology used in P2G PCUs (power conversion units) is comparable with the technology of solar or wind turbine converters. Solar and wind turbine converters are capable of dealing with Uret of 0,05, but we are very concerned that these converters will not be able to cope with Uret = 0. Therefore, we see this requirement (Uret = 0 for P2G) as a real risk. We note that Uret = 0 is a more stringent requirement that the Uret requirement in RfG. Please explain why Uret = 0 is necessary for P2G and why it differs from RfG and from FRT requirements for V1G vehicles and associated V1G electric vehicle supply equipment? |
| Article 7 |  |
| Article 8 |  |
| Article 9 |  |
| Article 10 | Proposal to add the EU DSO Entity as a stakeholder:  "ACER, in close cooperation with the European Network of Transmission System Operators for Electricity (ENTSO for Electricity), **and the EU DSO Entity**, shall organise stakeholder involvement..." |
| Article 11 |  |

13

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

Text amendment proposal (if applicable)

New article

Please upload figures or tables if necessary

The maximum file size is 1 MB

TITLE II - Connection of transmission-connected demand facilities, transmission-connected distribution facilities and distribution systems

14

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

in the table below

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
| Article 12 | Proposal to add on 12.1 as ‘Distribution systems’ is a vague definition as it can also include the users that are part of the distribution network. The DSO does not have control over the users’ facilities:  Transmission-connected demand facilities, transmission-connected distribution facilities and distribution systems **assets managed by the DSO** shall be capable of remaining connected to the network and operating at the frequency ranges and time periods specified in Annex I. | |
| Article 13 | Proposal to add on 13.1 as ‘Distribution systems’ is a vague definition as it can also include the users that are part of the distribution network. The DSO does not have control over the users’ facilities:  Transmission-connected demand facilities, transmission-connected distribution facilities and distribution systems **assets managed by the DSO** shall be capable of remaining connected to the network and operating at the frequency ranges and time periods specified in Annex I.  Proposal to add on 13.7 as TSOs and DSOs should be in agreement on these issues:  With regard to transmission-connected distribution systems with a voltage below 110 kV at the connection point, the relevant TSO **and DSO** shall **agree on the** voltage range at the connection point that the distribution systems connected to that transmission system shall be designed to withstand... | |
| Article 14 |  | |
| Article 15 | Proposal to delete on 15.2: "where applicable" is not clearly defined and thus should be deleted. | |
| Article 16 |  | |
| Article 17 | Proposal to delete on 17.2 (e): "on 1 phase faults"  Justification: Limiting automatic reconnections to one-phase faults can create operational difficulties for both TS0 and DSO. The one-phase fault provision shall be eliminated, and the decision must be between TSO/DSO agreement. | |
| Article 18 |  | |
| Article 19 |  | |
| Article 20 |  | |
| Article 21 | Proposal to add on 21.1:  Transmission-connected demand facilities and transmission-connected distribution systems, **if agreed between DSO and TSO,** shall fulfil the requirements set out in paragraphs 3 and 4 related to the simulation models or equivalent information.  Justification: Distribution network models are dependent on the behaviour of the clients connected to the distribution grid. Currently there is no European regulation that obliges the Distribution grid client to provide the DSO with a model of its installation. The models that the DSO can provide will necessarily have large errors.  Proposal to delete 21.1 (a) (iii): There is no practical difference between (i) and (iii). Thus we propose to delete (iii) and refer that demand response active power control can be used for constraint management services. | |
| Article 22 |  | |
| Article 23 |  | |
| Article 24 |  | |
| Article 25 |  | |
| Article 26 |  | |

15

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

Text amendment proposal (if applicable)

New article

Please upload figures or tables if necessary

The maximum file size is 1 MB

TITLE III - Connection of demand units used by a demand facility or a closed distribution system to provide demand response services to system operators

16

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

in the table below

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
|  | General comment by Eurelectric: We call for a confirmation that the requirements in this section only apply to those (power to grid) assets that will participate in provide services to the grid and hence, not to those that are only consumer |  |
| Article 27 | **Propose to delete 27 (a) (iii)** as there is no practical difference between (i) and (iii). Thus we propose to delete (iii) and refer that demand response active power control can be used for constraint management services. | |
| Article 28 | Proposal to add on 28.1:  Demand facilities and closed distribution systems may offer demand response active power control **including constraint management or**, demand response reactive power control to relevant system operators **(DSOs and TSOs)**.  Proposal to add on 28.2:  Demand units with demand response active power control **or** demand response reactive power control shall comply with the following requirements, either individually or, where it is not part of a transmission-connected demand facility, collectively as part of demand aggregation through a third party:  Proposal to add on 28.2 (k):  (...) have the withstand capability to not disconnect from the system due to the rate-of-change-of-frequency up to **a** **common value to be proposed by ENTSO-E**. With regard to this withstand capability, the value of rate-of-change-of-frequency shall be calculated over a 500 ms time frame. For demand units connected at a voltage level below 110 kV, these specifications shall, prior to approval in accordance with Article 6, be subject to consultation with the relevant stakeholders in accordance with Article 9(1);  Justification:  The RfG provides standard values for the ROCOF withstand. The DCC should do the same to avoid distortions between Member States. ENTSO-E should be mandated to provide a supported proposal. | |
| Article 29 |  | |
| Article 30 |  | |
| Article 31 |  | |
| Article 32 | On 32.1. proposal to add:  The operational notification procedure for a demand unit providing demand response services within a demand facility or a closed distribution system connected **or proposed to be connected** at a voltage level of or below  1000 V shall comprise an installation document.  Justification: It is very important that for the provision of demand response services to qualify demand units about to be connected to the distribution network.  On 32.6 (d) proposal to delete as in some cases, only connected demand units may have the certificate. Since is it very important to consider demand units about to be connected to the distribution network as well, this information doesn’t need to be requested. | |
| Article 33 |  | |

17

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

Text amendment proposal (if applicable)

New article

Please upload figures or tables if necessary

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[NEW] TITLE XXX - Connection of V1G electric vehicles and associated V1G electric vehicle supply equipment, power-to-gas demand units and heat-pumps

18

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

in the table below

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
| Article XX | Proposal to add: 5. With regard to fault-ride-through capability on V1G electric vehicles and associated V1G electric vehicle supply equipment, **power to gas units and heat pumps**:   1. The V1G electric vehicle and associated V1G electric vehicle supply equipment, power to gas units and heat pumps, when operating above the minimum stable operating level, shall be capable of staying connected to the network and continuing to operate stably after the power system has been disturbed by faults in the transmission network according to a voltage-against-time-profile in line with Figure XX.c at the connection point and with the set points in Tables X.1.1 and X.1.2.   Justification: Also power to gas units and heat pumps which are included in the revision of the DC should be included in this Article not only V1G | |
| Article XX+1 | Proposal to delete: "(...) **~~and heat pumps demand units~~**" as in some Member States heat pumps are treated like any normal costumer load behind the meter. This could be different in other countries but it should not imply to have a notification procedure for heat pumps across the whole EU. | |
| Article XX+2 |  | |
| Article XX+3 |  | |

19

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

Text amendment proposal (if applicable)

New article

Please upload figures or tables if necessary

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TITLE IV - Compliance

20

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

in the table below

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
| Article 34 |  | |
| Article 35 |  | |
| Article 36 |  | |
| Article 37 |  | |
| Article 38 |  | |
| Article 39 |  | |
| Article 40 |  | |
| Article 41 |  | |
| Article 42 |  | |
| Article 43 |  | |
| Article 44 |  | |
| Article 45 |  | |
| Article 46 |  | |
| Article 47 |  | |

21

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

Text amendment proposal (if applicable)

New article

Please upload figures or tables if necessary

The maximum file size is 1 MB

TITLE V - Applications and derogations

22

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

in the table below

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
| Article 48 |  | |
| Article 49 |  | |
| Article 50 |  | |
| Article 51 |  | |
| Article 52 |  | |
| Article 53 |  | |
| Article 54 |  | |
| Article 55 |  | |

23

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

Text amendment proposal (if applicable)

New article

Please upload figures or tables if necessary

The maximum file size is 1 MB

TITLE VI - Non-binding guidance and monitoring of implementation

24

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

in the table below

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
| Article 56 | On 56.1 proposal to add:  No later than six months after the entry into force of this Regulation, the ENTSO for Electricity **in cooperation with the EU DSO Entity** shall prepare and thereafter every two years provide non-binding written guidance to its members and other system operators concerning the elements of this Regulation requiring national decisions. The ENTSO for Electricity **and the EU DSO Entity** shall publish this guidance on its website.  Justification: The EU DSO Entity is now established next to ENTSO-E and should therefore be involved on a level playing field.  The same for 56.2 with the same justification:  ENTSO for Electricity **and the EU DSO Entity** shall consult stakeholders when providing non-binding guidance. | |
| Article 57 |  | |

25

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

Text amendment proposal (if applicable)

New article

Please upload figures or tables if necessary

The maximum file size is 1 MB

TITLE VII - Final provisions

26

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

in the table below

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
| Article 58 |  | |
| Article 59 |  | |

27

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

Text amendment proposal (if applicable)

New article

Please upload figures or tables if necessary

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ANNEX I

28

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

in the table below

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
| Annex I |  | |

29

Please upload figures or tables if necessary

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ANNEX II

30

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

in the table below

|  |  |  |
| --- | --- | --- |
|  | Comment on the ACER draft amendments | Alternative text amendment proposal (if applicable) |
| Annex II |  | |

31

Please upload figures or tables if necessary

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Other additional provisions

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

Text amendment proposal (if applicable)

Other new provisions

Please upload figures or tables if necessary

The maximum file size is 1 MB

32